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Chapter Title: Reasons for Kuznets Cycles in Fertility of Different Population Groups

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land, in which he concluded that "during the period between 1860 and 1915 no definite trend appeared in the native fertility rates" [38, p. 34]. For the period from 1915 through 1925 (the last year of the study), he found an upward tendency in fertility. Here, then, is an area in the forefront of the process of urbanization and industrialization in which native white fertility did not significantly decline over a long period stretching well back into the 19th century.<sup>14</sup> The appearance of a similar pattern for the nation as a whole at a later date would clearly be consistent with this earlier New England experience.

One final point should be noted regarding Figure 4. The decline of total native white fertility in the 1920's is now seen to be owing more to a decrease in rural than urban fertility. Between 1915-19 and 1925-29, the reduction in rural fertility was close to 10 per cent, while that for urban fertility was under 6 per cent. Thus further understanding of this period calls particularly for an explanation of the rural decline.

#### E. *Summary*

While the fertility of the total white population declined substantially from the latter part of the 19th century to the mid-'thirties, there was significant variation in the rate of change over time and among component population groups. Even after averaging data so as to eliminate or substantially reduce variability due to the business cycle, marked fluctuations—Kuznets cycles of 15 or more years duration—stand out in the patterns for the total, native, and foreign-born white populations. Moreover, in the first three decades of this century the over-all decline in total white fertility was owing almost exclusively to declines for the foreign-born white and rural native white populations and to the shift from rural to urban areas; the fertility of the urban native white population, the group of central importance in understanding recent and prospective movements in the aggregate, remained virtually unchanged. Considerations such as these raise the question whether the baby boom, rather than an abrupt reversal in a long-term down-trend, might not be at least in part a Kuznets cycle of much larger magnitude than heretofore. To answer this, it is necessary to look into possible reasons for these movements.

### II. *Reasons for Kuznets Cycles in Fertility of Different Population Groups*

Briefly stated, the analytical viewpoint underlying the subsequent discussion is this: variations in the fertility of a given population group

<sup>14</sup> A recent re-examination by Robert Gutman [17] of the reliability of the Massachusetts birth registration data used by Spengler, while arriving at a somewhat different evaluation from Spengler, does not upset this finding.

are caused primarily by changes in two classes of factors—economic condition and demographic composition. The “group” for which these factors should be studied comprises those in the family-building ages. Broadly, this embraces those aged 15-44 years, but for some purposes particular attention should be paid to the younger members, those aged, say 20-29, where so many decisions regarding marriage and childbearing are concentrated. “Economic condition” refers to the employment and income experience of the group. Ideally, “income” here would embrace all sources, including even interpersonal transfers from other age groups, though in the following discussion attention is concentrated on the chief source, labor income. “Demographic composition” refers to the distribution of the group according to characteristics such as age, sex, nationality, and parentage. A change in demographic composition may itself stem basically from economic forces, for example, a change in age composition of the foreign-born due to a rise in immigration, but it is nevertheless useful to distinguish the different channels through which these forces operate. Both economic condition and demographic composition may affect the over-all fertility of a population group by influencing either marriage behavior, marital fertility, or both. No consistent effort is made here to distinguish the role of these two components in over-all fertility change, though it would be of interest in a fuller treatment.<sup>15</sup>

The analysis below for the foreign-born takes up only compositional factors, while those for the two native-born groups concentrate on economic condition. It would have been of interest to examine, where possible, the influence of economic factors on foreign-born fertility in so far as they exert effects other than through compositional change, and of changes in demographic composition on native-born fertility, especially those associated with rural-urban migration.<sup>16</sup> In the present discussion, however, we have not attempted an exhaustive analysis, but have

<sup>15</sup> This brief statement of analytical viewpoint is intended merely to highlight the determinants studied here. Among other possibly important factors are variations in the competitive situation of children in the consumers' scale of preference associated, e.g., with the introduction of new consumer durables or a change in the net income which children add to the family (see Joseph S. Davis [9, pp. 56-58] and Gary S. Becker [70, pp. 209-311]); changes in the availability of credit resources; and shifts in techniques and knowledge of birth control. Mention should also be made of a stimulating paper by Moses Abramovitz [2, pp. 158-79] which touches on some of the longer-term forces shaping contemporary attitudes toward fertility.

<sup>16</sup> A cursory look at the available data on compositional aspects of the native white rural and urban populations suggests that they exhibit much less decade-to-decade variability than the foreign-born white. See the 1890-1930 figures in Thompson and Whelpton [45, Tables 41 and 56, and App. Tables 17, 23, and 27]. While there are some excellent recent general studies on U.S. population [6] [41], it is unfortunate that there is nothing that continues this remarkable study to the present in its full analytical depth.

singled out those factors which seemed on the basis of our initial investigation to throw significant light on the Kuznets cycles shown by each group.

#### A. *Foreign-Born White Fertility*

As populations go, the foreign-born is an unusual one—primarily because the source of its growth is immigration rather than births.<sup>17</sup> One result of this is a very atypical age distribution. Unlike the usual age distribution of a growing population, where the numbers tend to fall progressively with each older age group, that of the foreign-born shows a concentration in the middle age groups with relatively small numbers at the extremes, at least as long as immigration remains high [45, p. 144]. Moreover, not only are the additions to this population fed in at relatively advanced ages—the “prime” working ages—but there is a significant disproportion between the sexes, with males noticeably predominating. Finally, given wide swings in immigration, such as have occurred in this country, the relative size even of adjoining age-sex groups can fluctuate widely in as short a period as a decade.

These considerations explain our starting with demographic composition in seeking clues to the variations in the rate of change of foreign-born fertility. Our immediate point of departure in studying these movements, particularly the very steep decline in the 1920's was the observation that the proportion of young foreign-born women who were married dropped sharply from 1920 to 1930, as is shown by the following figures:

Age at Specified Date	Per Cent Married	
	1920	1930
20-24	61.6	47.5
25-29	81.6	75.9

Why, one may ask, should such an abrupt decline occur? The chance of a foreign-born white woman aged 20-24 by 1920 being married was almost two in three, but if she reached this age group only one decade later, the likelihood had declined to less than one in two.

An obvious hypothesis, stemming from the observation that the marriage proportion for young foreign-born *men* remained almost constant over the decade, is that the demand for women to marry dropped off

<sup>17</sup> Children born to foreign-born women after immigration are, of course, classified as native-born.

because of a decline in the relative number of males in the market [25] [46]. In testing this, however, one must recognize that the relevant ratio is not that of males to females in a given age group, the standard sex ratio, since, as is well known, men typically marry at a later age than women. For example, in the period 1890-1930, at least 45 per cent of foreign-born white women were married by the time they were 20-24, but for foreign-born white men this proportion was not attained until ages 25-29 had been reached [45, p. 395]. In attempting to explain the marriage proportion for foreign-born white women aged 20-29, therefore, the ratio of foreign-born white males aged 25-34 to females aged 20-29 was computed.<sup>18</sup>

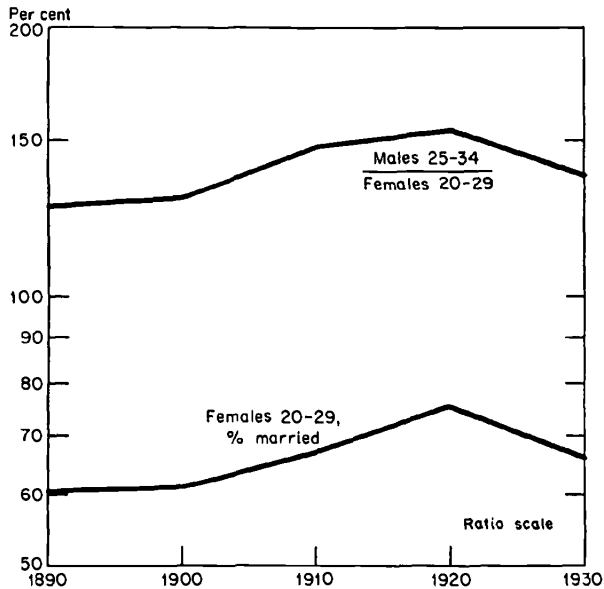


FIGURE 5. FOREIGN-BORN WHITE POPULATION, RATIO OF MALES AGED 25-34 TO FEMALES AGED 20-29, AND PER CENT OF LATTER MARRIED, 1890-1930

Source: Table A-5

The relevant series are plotted in Figure 5 for the decennial census dates 1890-1930. The close similarity between the patterns traced by the two curves—a similarity which would not appear if the standard sex ratio for those aged 20-29 were used—is impressive. Apparently, the marital experience of young foreign-born white females did depend

<sup>18</sup> The analysis implies of course that native-born men did not constitute a particularly important source of demand for foreign-born women. This assumption seems consistent with the facts; in 1920 the proportion of foreign-born mothers whose husbands were native-born was less than one in six [56, p. 232].

very considerably on the gyrations of our rather unorthodox sex ratio, which in turn arose from the impact of both earlier and current immigration on the age-sex structure of the foreign-born population.<sup>19</sup>

In Figure 6, this line of reasoning is pushed a step further. Here, at five-year intervals, the series for foreign-born white fertility and our marriage-relevant sex ratio (the two solid lines) are compared, the latter being used in the absence of direct observations on the marriage proportion at mid-census dates. As the lower panel shows, while the movements in the rates of change of the two series are not perfectly consistent, there is a noticeable similarity. Both series show two trough-to-trough swings with the dates of peaks and troughs close, if not identical. This suggests that at least one element responsible for Kuznets cycles in the rate of change of foreign-born fertility was the changing proportion of males aged 25-34 to females aged 20-29 and the consequent effect of this on the marriage proportion.

The broken line in the figure brings out a second demographic feature of the foreign-born population that may have contributed to the fertility swings, namely, the proportion of women aged 20-44 in prime reproductive ages, conceived here as encompassing ages 20-34. Here too there is a suggestion of two trough-to-trough swings with reasonably consistent timing, though the amplitude of the movements is somewhat smaller for this series. However, in the beginning of the period (for which the estimates are probably less reliable), the timing relationships are somewhat off.

This brief discussion of Kuznets cycles in the rate of change of foreign-born white fertility is designed to be exploratory rather than definitive, and enough has perhaps been said to provide some support for the view that shifts in demographic composition of the foreign-born associated with the changing impact of immigration were at least in part responsible for these movements. Even if one accepts this suggestion, however, there remain some troublesome discrepancies. One—of particular interest in the present analysis—is that in the latter part of the period considered here, the decline in the rate of change of fertility was somewhat greater than one would have expected on the basis of the two factors so far discussed. One possible explanation, suggested in several sources, and consistent with the emphasis here on compositional changes in the population, is an abrupt decline in the proportion of foreign-born women in the prime reproductive ages who came from the high-fertility countries of southern and eastern Europe. There is

<sup>19</sup> An interesting by-product of the sharp decline in the marriage-relevant sex ratio during the 'twenties, and the corresponding reduction in the proportion of foreign-born white females aged 20-24 who were married, was an abrupt rise in the labor-force participation of this group from 37.6 to 50.1 per cent [33, Table A-4].

AMERICAN BABY BOOM

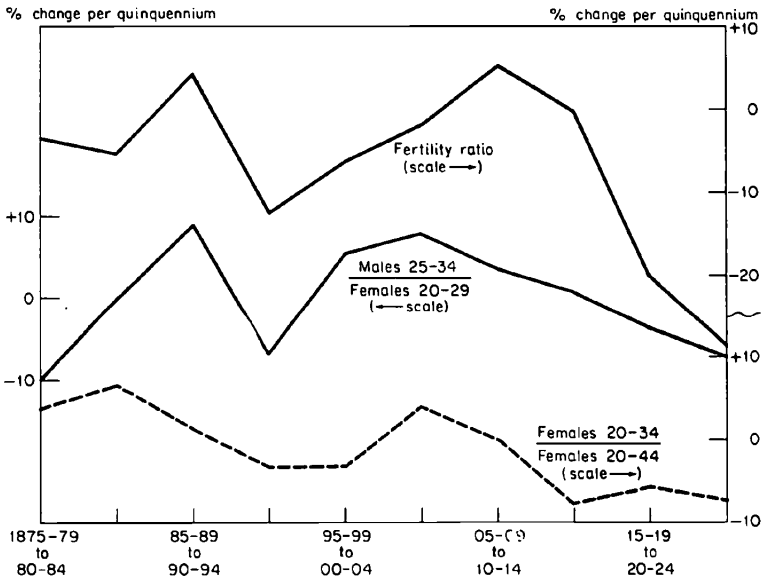
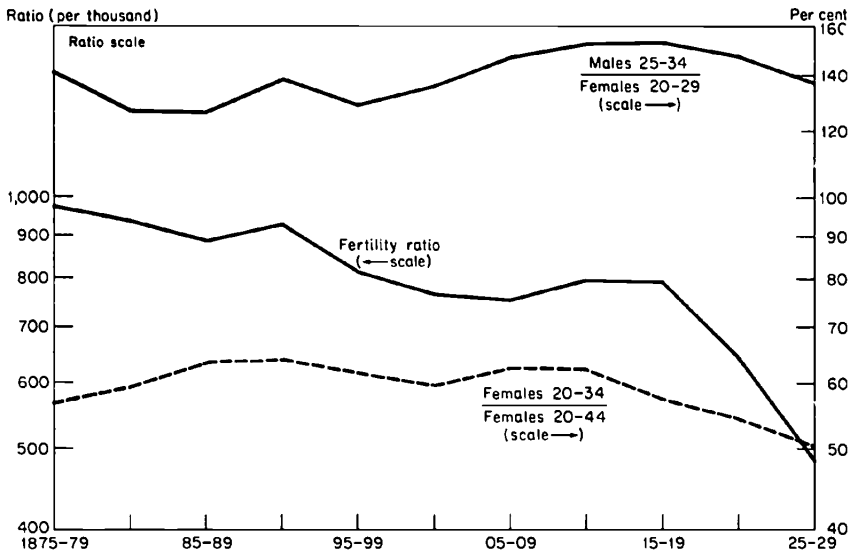


FIGURE 6. FOREIGN-BORN WHITE POPULATION; LEVEL AND RATE OF CHANGE OF FERTILITY RATIO, AND OF RATIO OF MALES 25-34 TO FEMALES 20-29 AND FEMALES 20-34 TO FEMALES 20-44, 1875-79/1925-29

Source: Table A-6

substantial evidence that female immigrants from this area typically had significantly higher fertility than contemporaneous immigrants from northern and western Europe [57, pp. 4, 10] [69] [16, p. 108]. Clearly, a sudden drop in the share of young foreign-born women from this source would tend to depress fertility.

Direct evidence to test this proposition is not available since, during the period with which we are concerned, the census did not regularly publish age detail for the foreign-born by country of origin. However, it seems possible to form a rough impression of the validity of the argument. In the period 1890-1915, about two-thirds of all female immigrants came from southern and eastern Europe; in 1915-30, about one-third. We have attempted to estimate, therefore, for foreign-born women aged 20-34 at each of several dates, the proportion who had immigrated between 1890 and 1915, the peak period of the "new immigration."<sup>20</sup> The results are as follows: 1900 = 45, 1910 = 82, 1920 = 86, 1930 = 48. The figures clearly suggest a drastic decline during the 'twenties in the share of young foreign-born women accounted for by the new immigration,<sup>21</sup> and thus appear consistent with the suggestion that the decline in the rate of change of foreign-born fertility during this decade, attributable in part to the demographic shifts previously noted, was aggravated by this factor.

### B. *Rural White Fertility*

The explanation investigated here for Kuznets cycles in rural fertility is a simple one; namely, that the rate of change of rural fertility varies directly with that in the economic condition of the farm population in family-building ages, approximated here by real farm income per head of the farm population (or labor force) as a whole. If the rate of growth of real farm income per head drops off, the rate of change of farm fertility would be expected to decline (algebraically). The converse is true if the rate of farm income growth increases.

The analysis comprises two parts, one for 1885-89 through 1925-29 based on observations at decennial intervals; and one, employing averages at quinquennial intervals, for 1920-24 through 1954-58. In

<sup>20</sup> The technique for 1930, for example, was to compare the number of survivors from the group of foreign-born women aged 5-19 in 1915, estimated by appropriate survival rates from [31, p. 23], with the number aged 20-34 enumerated in 1930.

<sup>21</sup> Thompson and Whelpton draw an opposite conclusion, namely, that the share accounted for by the new immigration rose slightly during the decade and thus could not have contributed to the fertility decline [45, pp. 271-72]. The procedure they use to infer the share of the new immigration, however, rests primarily on figures for foreign-born women of all ages, and fails to take account of the fact that the major shift in national origins of immigration in the 'twenties particularly affected the younger foreign-born age groups, those central to the explanation of fertility.

the first part of the analysis, we use fertility data for the total rural white rather than native rural white population, since the earlier estimates for the former are probably somewhat more reliable for the present purpose and the bias introduced by the inclusion of the relatively unimportant foreign-born group in the rural total is probably fairly small. This series is compared with five-year averages of real gross farm income per person engaged in farming. The dates chosen for the latter allow for a lead of one to one and a half years over the fertility series. In the second part of the analysis, annual estimates of the birth rate for the total farm population (white plus nonwhite), converted to five-year averages for the first and second half of each decade, are compared with real net farm income per head of farm population, again with allowance for a lead of the former over the latter.<sup>22</sup> Both the quinquennial and decennial farm income series are deflated by an index chosen to approximate the cost of living to farmers. The series are plotted in the upper panel of Figure 7, and the percentage change, our particular interest, in the lower.

By and large, as the lower panel shows, the data seem reasonably consistent with the hypothesis—at least as consistent as one might hope given the shortcomings of the data and the inevitable limitations of any monocausal explanation. Swings in the rate of growth of real farm income per head or per worker appear to be matched fairly closely by swings in the rate of growth of rural fertility. Reference to the adjoining scales will show that the magnitude of the income swings is substantially greater than that of fertility. This might be interpreted as suggesting an elasticity noticeably under one, a result which seems consistent with the findings of similar business cycle analyses.<sup>23</sup>

If this reasoning is accepted, then the historical course of rural fertility change in this century would be conceived as reflecting in significant measure the pattern of major surge and relapse which has characterized farm income growth. The accelerated rate of decline of farm fertility in the 'twenties and early 'thirties would be attributed to the drastic setback to the growth of farm income in the period following the First World War, a decline so great that the absolute level itself was substantially reduced. The subsequent baby boom in rural areas would be explained by the corresponding resurgence in farm income growth in the late 'thirties and 'forties associated particularly with the war and postwar booms. And finally, the decline in the rate

<sup>22</sup> The shift to the farm birth rate series is due in part to statistical convenience, but more fundamentally to the fact that the connection between "rural" fertility and farm income becomes progressively more tenuous as the rural nonfarm population grows.

<sup>23</sup> Cf. the studies of Gary S. Becker [70, pp. 209-31], Dorothy S. Thomas [15] [43], Dudley Kirk [70, pp. 241-57] [48, pp. 84-85].

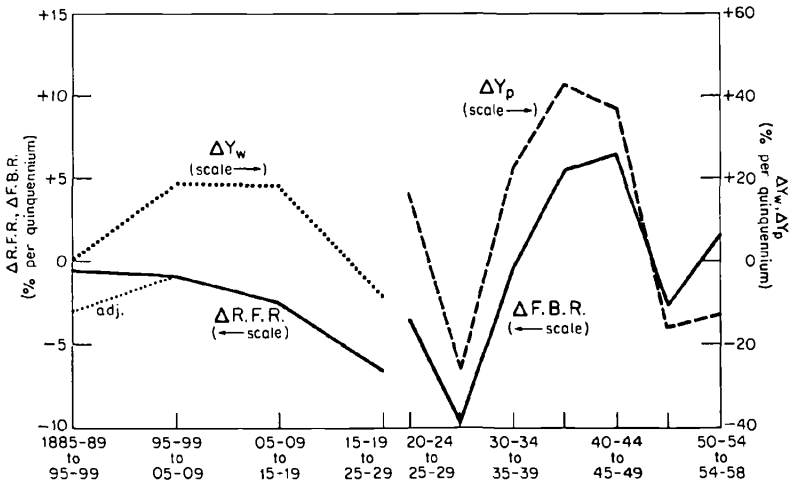
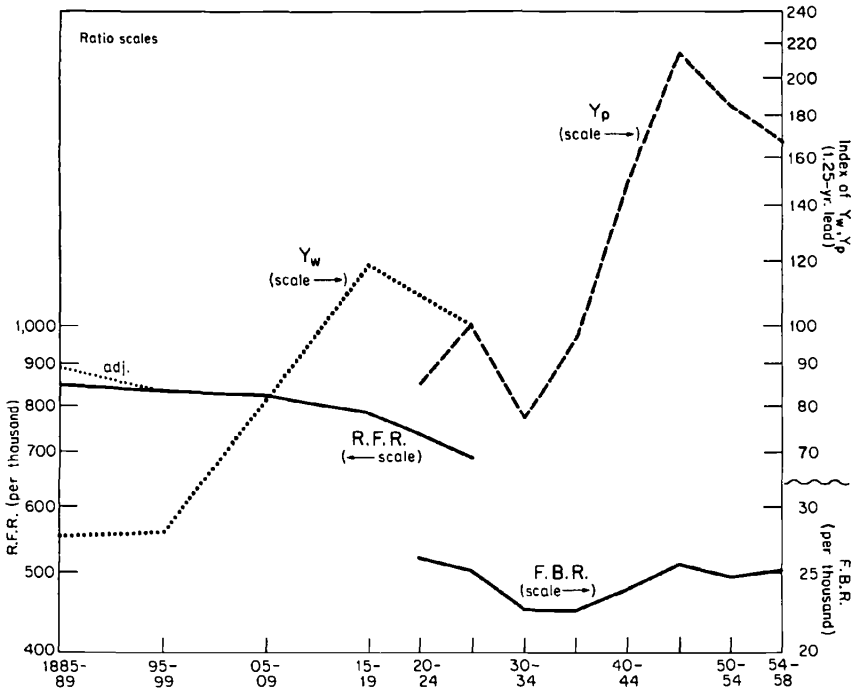


FIGURE 7. LEVEL AND RATE OF CHANGE OF RURAL WHITE FERTILITY RATIO (R.F.R.) AND REAL GROSS FARM INCOME PER ENGAGED (Y<sub>w</sub>), 1885-89/1925-29, AND OF FARM BIRTH RATE (F.B.R.) AND REAL NET FARM INCOME PER HEAD (Y<sub>p</sub>), 1920-24/1954-58

Source: Tables A-7a and A-7b.

of growth of fertility in the 1950's, which in terms of absolute level meant a leveling off, would be explained by the tapering off of the farm boom and substantial drop in farm-income growth. The data suggest that the adverse effect on fertility in this most recent period has been somewhat less than might have been expected. A number of possible reasons for this come to mind, such as compositional changes, the increased significance of nonfarm sources in the total income of farm families [40, pp. 48-49], and the progressive rise in the proportion of the "farm" population (1950 census definition) not engaged in agriculture [61]; but it is not possible to pursue these questions here.

From what has been said, it should be clear that the fertility trend for the *total* white population has been subject to substantial variation as a result of major fluctuations in the fertility of the foreign-born and rural white components. The fluctuations for these groups in turn appear to have been caused by the impact of the rise and fall of immigration on the age, sex, and nationality composition of the foreign-born, and of major swings in agricultural conditions on the economic condition of the farm population. It would seem to follow that generalizations based on the fertility record of the total white population (or of the entire population, whose behavior is of course dominated by the total white) would be extremely hazardous.

Consider, for example, the experience of the 1920's. If the foregoing analysis is correct, the striking decline in total white fertility that occurred in this decade was caused largely by the conjuncture of two exceptional circumstances—namely, major shifts in the demographic composition of the foreign-born population arising from the effect on immigration of the First World War and the subsequent imposition of restrictions, and, second, a major slump in agricultural conditions. When added to the continuous depressing influence of the rural-urban shift, these circumstances created a decline in white fertility noticeably out of line with previous experience. Knowing this, one is inclined to view with some reserve statements such as that quoted previously, which cites the sharp fertility decline for the *total* population in the prosperous 1920's as a reason for discounting the effect of economic conditions on fertility.

It is nevertheless true that even urban native white fertility declined in this decade, though the decline of under 6 per cent for this group is rather less impressive than the almost 20 per cent decline for the white population as a whole. It is time, therefore, to see what might explain the fertility pattern for this group.

### *C. Urban Native White Fertility*

As in the rural analysis, the aim here is to explore the relation between Kuznets cycles in fertility and in the economic condition of the

population of family-building ages. For the rural population, it seemed reasonable to assume that the economic experience of those in family-building ages could be inferred from the income experience of the farm population as a whole. Such an assumption, however, does not seem plausible for the urban group, with its much more varied distribution of industrial and occupational attachments. In the absence of direct information on the situation of those in family-building ages, therefore, we have attempted to infer the state of the labor market for young persons from two indicators, conceived as reflecting respectively the demand and supply sides of the market. The first is the unemployment rate for the labor force as a whole. A low rate is taken as reflecting a generally favorable state of demand for labor, young and old; a high rate, an unfavorable situation. The second is the rate of change of the total white male population, aged 20-29, taken as a crude index of the rate of entry of young persons into the labor market. Other things equal, a decrease in the rate of entry would make for a favorable labor market for young persons because of their scarcity; an increase, an unfavorable market. Thus the hypothesis is that the rate of change of urban native white fertility varies directly with that of aggregate labor demand (read "inverted unemployment rate") and inversely with that of the rate of labor market entry of young persons (read "rate of change of white male population, aged 20-29").<sup>24</sup>

An example may clarify the reasoning. If the economy is experiencing a Kuznets-cycle expansion, the rate of growth of labor demand would increase, and, other things remaining unchanged, one would expect this to lead, through its effect on income and employment conditions, to a favorable response in fertility of the native population by encouraging marriage and childbearing. However, under conditions of free immigration, the increased rate of growth of labor demand would also provoke an influx of immigrants. The resulting rise in the rate of additions to the labor market would tend to counteract the tendency toward tightening and thus offset in some measure the stimulus to fertility of the native-born. Note, in this connection, that immigrants are typically concentrated in exactly those age groups in which we are interested for the analysis of fertility. Conversely the tendency toward an adverse impact on native-born fertility of a decreased rate of growth

<sup>24</sup> Although the view that variations in the general unemployment rate primarily reflect changes in aggregate demand seems most consistent with formal theory, it is not essential to the analysis. Alternatively, one might think of movements in the general unemployment rate as indicating the average course of employment conditions, and the net outcome of aggregate demand and supply, and changes in the rate of entry as indicating variations in the deviation from the average of the situation for young persons. However, the fact that for most of the period covered here a rise in the rate of entry accompanied a reduction in unemployment seems consistent with the emphasis on aggregate demand (Table A-8, cols. 2, 3).

of labor demand during a Kuznets-cycle contraction would be moderated by a decrease in the rate of immigration. Thus Kuznets cycles in the rate of change of labor demand would tend to be compensated by swings in the rate of entry into the labor market owing to immigration, and the consequent impact on native-born fertility would be counteracted in some degree.<sup>25</sup>

Figure 8 presents the relevant series; as before, the upper panel shows the levels of the variables, the lower, their rates of change. To facilitate inferences from the graph, the curve for each of the explanatory variables has been plotted inverted so that an upward movement would be expected to cause an upward movement in the fertility curve, other things remaining unchanged.

If we first consider variations in the decade rates of change through 1935-39, the most interesting feature is the inverse movements of the two explanatory series. As the lower panel shows, whenever the rate of growth of aggregate labor demand (the lower solid line) moves in a way favorable to fertility, the change in the rate of entry of young persons into the labor market (the broken line) moves adversely, and vice versa. In the early part of the period the swing in supply conditions reflects chiefly movements in immigration—exactly the situation described in the example above. Later, the supply movement reflects primarily variations arising from demographic sources. For example, the increase in the decade 1915-19/1925-29 over the preceding decade reflects an exceptional rise in the rate of increase of native white males aged 20-29, which traces in turn to a corresponding movement in the total white birth rate earlier in the century.

So far as directions of movement of the explanatory series during this period are concerned, therefore, they carry no clear implication regarding the expected behavior of the rate of change of fertility—a plus in one is accompanied by a minus in the other. And, indeed, the fertility curve fails to exhibit the fluctuations of either of the two explanatory series. Rather, one finds simply one extended swing from the beginning of the period through 1925-29/1935-39. The 'twenties, with a relatively small decline in the rate of change of fertility, form a consistent part of this picture, a favorable movement in demand conditions being offset by an adverse one in supply. Interestingly, if one were to smooth out fluctuations in the two explanatory curves by, say, a simple two-item moving average, both, and particularly the unemployment rate, would show an extended swing rather similar to that of

<sup>25</sup> Some may note a similarity between this reasoning and Francis Walker's analysis emphasizing the adverse influence of immigration on the fertility of the native population [71] [72]. Walker, however, was concerned with the primary trend, whereas the present analysis refers only to Kuznets cycles, and in addition takes account of the stimulating influence to native fertility of the very conditions which encourage a rise in immigration.

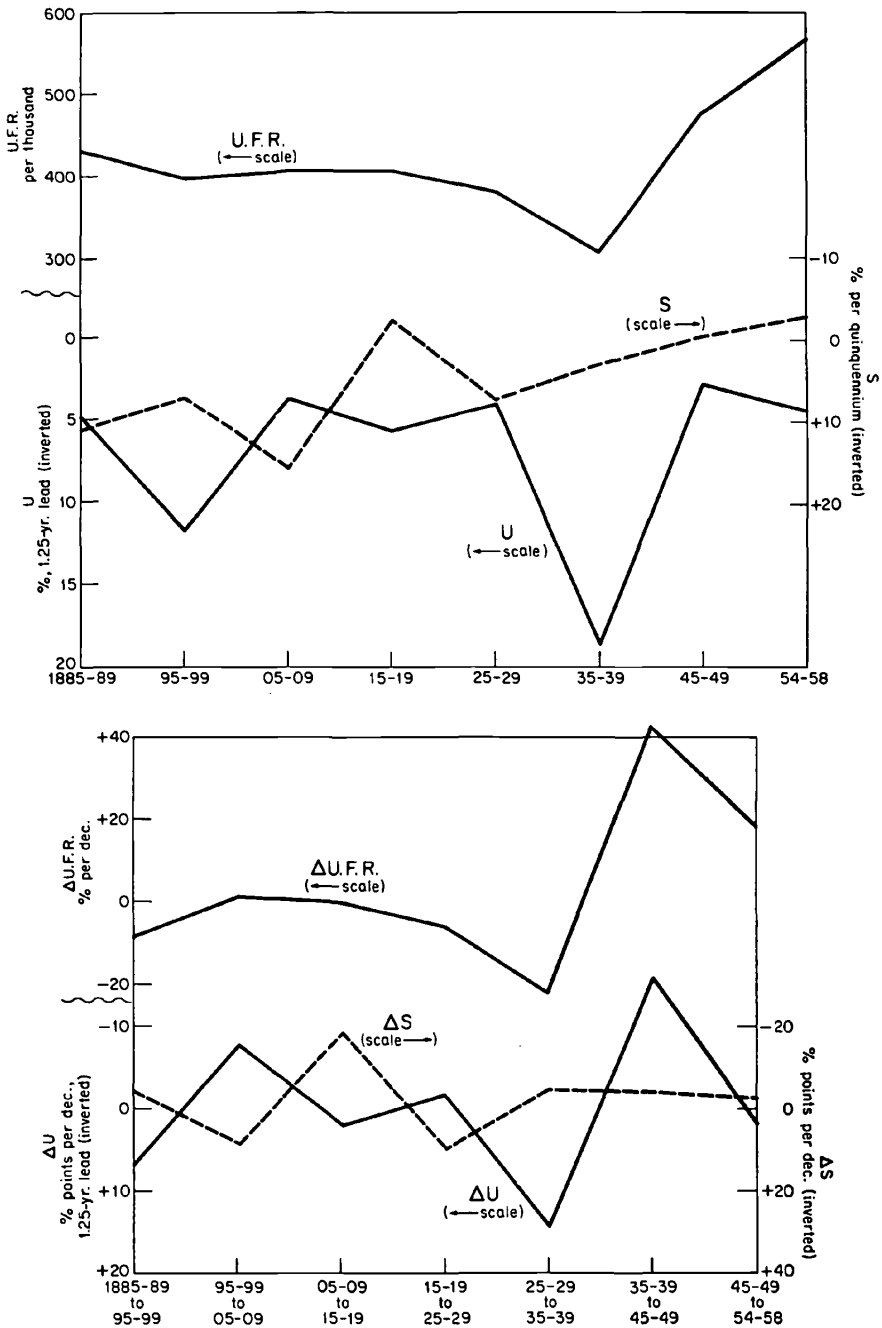


FIGURE 8. LEVEL AND RATE OF CHANGE OF URBAN NATIVE WHITE FERTILITY RATIO (U.F.R.),<sup>a</sup> UNEMPLOYMENT RATE OF CIVILIAN LABOR FORCE (U), AND RATE OF CHANGE OF TOTAL WHITE MALE POPULATION 20-29 (S), 1885-89/1954-58

Source: Table A-8

<sup>a</sup> Total white, 1925-29.

the fertility curve. An average of the two explanatory curves would produce the same effect.

Still more intriguing is the behavior of the three series after 1935-39. In this period, the rate of change of labor demand continues its pattern of rise and fall, with a swing of noticeably greater amplitude than previously. In striking contrast to the preceding pattern, however, the change in the rate of entry into the labor market levels off instead of fluctuating inversely. And, for the first time, the rate of change of fertility exhibits a Kuznets-cycle movement, reproducing with remarkable similarity the fluctuation in the rate of change of labor demand. The inference suggested by these movements seems clear. With immigration restricted and without a surge in the rate of labor market entry from the native-born population caused by demographic processes, the favorable impact of a swing in the rate of growth of demand—itsself much larger than heretofore—was felt with much greater force by the young native whites in the labor market. As a result, the rate of change

TABLE 2—OBSERVATIONS ON PERCENTAGE RATE OF CHANGE PER DECADE IN URBAN NATIVE WHITE FERTILITY CLASSIFIED BY CONCURRENT CHANGE PER DECADE IN PERCENTAGE OF LABOR FORCE UNEMPLOYED AND IN PERCENTAGE RATE OF CHANGE OF TOTAL WHITE MALES, AGED 20-29, 1885-89/1954-58

Change per Decade in Percentage Rate of Change of Total White Males, Aged 20-29 (percentage points)	Change per Decade in Percentage Unemployed (percentage points)				
	-16	-8	-2 to +2	+7	+14
+8 to +10		+2	-6		
-2 to -5	+42		+18	-8	
-18			0		-22

Source: Table A-8.

of fertility of this group reproduced the swing in labor demand in significant measure for the first time.

If one considers magnitudes of the variables rather than simply rates of change, the argument seems reasonably well borne out, though the correlation is not perfect. In Table 2, each of the seven observations on the rate of change in fertility is classified according to the accompanying values of the rate of change in the unemployment rate and in the percentage change in white males aged 20-29. One finds that, holding the change in rate of entry into the labor market constant (that is, examining each row in the table separately), the rate of change of fertility varies directly with the rate of change in demand (inversely with the rate of change in the unemployment rate). Conversely, holding demand conditions constant (examining each column separately), there is a tendency for the rate of change of fertility to vary inversely

with the change in the rate of entry into the labor market, though in this case there is one inconsistency (the +18 and 0 entries being out of order vertically). Whether this discrepancy primarily reflects a fundamental deficiency in the analytical scheme or an inadequate approximation to the economic condition of those of family-building age provided by the explanatory series used here, it is not possible to say.

A comprehensive measure of the income and employment experience of young persons for the period covered here remains tantalizingly out of reach. Yet such additional evidence as we have been able to assemble supports the view that the income experience and labor market situation of young persons were exceptionally favorable in recent years. Consider the following:<sup>26</sup>

1. In the 'forties, earnings in the lower-income occupations rose much more rapidly than those in the higher, and then, in the 'fifties, at about the same or a slightly lower rate [51, No. 33 (Jan. 15, 1960), pp. 6-7, and No. 35 (Jan. 5, 1961), p. 52]. Since young people are more highly concentrated in lower-income occupations than older, they must have particularly benefited from the movement of the 'forties. The very fragmentary evidence available suggests no corresponding development in the 'twenties.

2. The shift of young persons into higher earning occupations proceeded at a much higher rate in the 'forties than in the two preceding decades. In 1940, 17 per cent of males aged 15-24 in nonfarm occupations were in the three highest income classes (professional, technical, and kindred workers; managers, officials, and proprietors, except farm; and craftsmen, foremen, and kindred workers). By 1950, 41 per cent of this same group of males (now aged 25-34) were in these classes, an improvement of 24 percentage points. From 1920 to 1930, the improvement for the cohort moving through the same ages was 17 points, and from 1930 to 1940 it was 12 points. Corresponding figures for the cohorts aging 25-34 to 35-44 in the three successive decades are 7, 4, and 14 points. Other things being equal, this more rapid shift to higher-income occupations points to a significantly higher rate of income growth for young persons in the 'forties than in the two preceding decades.<sup>27</sup>

<sup>26</sup> In the examples cited, the typical movement from the 'thirties through the 'fifties is consistent with the pattern shown by the rate of change of fertility—that is, the abrupt break with past experience, in a direction reflecting a particularly favorable situation for young persons, occurs between the 'thirties and the 'forties. The movement from the 'forties to the 'fifties suggests a slowing or even reversal of the process. It is likely that between the first and second halves of the 'fifties this pattern would be still more apparent.

<sup>27</sup> The figures for 1930-50 are computed from [22, Appendix Table 1]; for 1920, from unpublished estimates comparable to [22] kindly provided by W. Lee Hansen. Data for armed forces as reported in the census were included with the 1940 and 1950 figures. I am indebted to Adrian Throop for assistance in assembling these figures.

3. Expansion of government transfer payments provided a new bulwark to income in the 'forties and 'fifties, especially in the form of veterans benefits and unemployment compensation for younger persons.

4. Labor-force participation rates in the 'forties showed a marked break with previous trends in a manner strongly suggesting a shortage of young workers. The sharp downtrend in participation of white males aged 14-19 which had prevailed since 1900 was completely reversed. A similar movement appears even to have characterized those aged 10-13 [31, pp. 364-67]. The long-term rise in labor-force participation of older women was greatly accelerated because jobs that would ordinarily have been filled by young persons were left open. And while, for young women as a whole, labor-force participation declined slightly as a larger proportion married and had children, the rates for wives, even those with preschool-age children, rose substantially. Finally, while it is not possible to cite figures on the long-term trend, part-time employment rose substantially after 1940, and it seems likely that this too stemmed at least in part from a shortage of young workers. In the 'fifties the rise in labor-force participation of older women continued virtually unabated, but the rate for those aged 14-19 resumed its long-term decline.<sup>28</sup>

5. Since 1940, home ownership among young persons has risen to levels markedly higher than had previously prevailed. The following figures for nonfarm household heads show, for each age group, the percentage of dwelling units which were owner-occupied at each date:<sup>29</sup>

<i>Age</i>	<i>1890</i>	<i>1900</i>	<i>1930</i>	<i>1940</i>	<i>1949</i>	<i>1959</i>
15-24	14	10	11	12	21	16
25-34	24	21	26	22	35	42
35-44	35	34	44	37	53	63

There is a marked advance in the situation of young persons after 1940, part of which must be due not only to a great increase in credit availability but to a substantially improved income position as well which encouraged taking on long-term commitments.

<sup>28</sup> The evidence cited in this paragraph is from the excellent census monograph by Gertrude Bancroft [5, pp. 29-31, 58, 77-82, and Ch. 4]. Further analysis of some of these developments is planned as part of a study by the present writer on long swings in American labor-force growth [12].

<sup>29</sup> The data through 1940 are from the census reports; for 1949 and 1959, from [21], p. 1107, Suppl. Table 1]. (Data for those aged 18-24 from the latter source were adjusted to 15-24 on the assumption that no heads of households under 18 own their own homes.) The 1930 and 1940 estimates are for male heads of household only, which biases them slightly upward compared to the figures for the other dates. The assistance of S. R. Lewis, Jr., in the preparation of these data is gratefully acknowledged.

6. Finally, there are the characteristics of the baby boom itself. A recent study [16] has shown that a major factor in the boom has been the significant decline since 1940 in age at marriage. From 1890 to 1940, age at marriage drifted irregularly downward, the decline in the median for all females amounting to only one-half year. In the next decade, a period one-fifth as long, the reduction was twice as great [55, Series A-229]. In addition, wives have had children much sooner after marriage. These two factors, earlier marriage and earlier child-bearing, rather than mothers having substantially more children, accounted for most of the rise in the fertility rate through 1954 [16, pp. 365-71].<sup>30</sup> The central role of young families in the baby boom is obvious. It would be difficult indeed to account for this unless their income and employment experience had been exceptionally good.

### III. *Conclusions and Possible Implications*

The most striking feature of the baby boom—and thus the one calling most urgently for explanation—is the apparent abrupt break with historical experience. However, reconciliation of present and past becomes easier when one recognizes that even before the 'forties the historical record was characterized by fluctuations of significant magnitude and duration, and that the record for the total white population is a composite of the varying experience of several component groups, subject in part to quite different influences. Major swings in agricultural conditions, on the one hand, and Kuznets cycles in nonagricultural activity with accompanying immigration fluctuations, on the other—each with their peculiar historical timing—gave rise to distinctive fertility responses on the part of the rural white, foreign-born white, and urban native white populations. When one unravels these differing strands of experience and considers their underlying influences, the impression emerges that the recent fertility behavior of the urban native white population, the group of central significance for explanation of the baby boom, is not as inconsistent with its earlier character as was heretofore believed. In the first three decades of the

<sup>30</sup> The draft law policy of deferring fathers doubtless encouraged earlier marriage and childbearing, but without an income situation that favored expansion of the family beyond the first child, it is doubtful that it could have produced a baby boom of the type experienced.

There is now reliable evidence that the average number of children per mother has also risen in the postwar period. This development is of course consistent with the analysis presented here. The longer the exceptional labor market situation prevails, the more likely the fertility response will take this form in addition to earlier marriage and earlier child-bearing.