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TABLE 10

Hours Worked by Women in Selected Industries, March 24-30, 1940

| INDUSTRY | MEDIAN HOURS | PERCENTAGE WORKING | |
|---|---|---|---|
| | | Less than 40 hours | 60 or more hours |
| Domestic service | 48.3 | 25.2 | 24.8 |
| Hotels and lodging places | 48.2 | 14.7 | 13.1 |
| Laundering, cleaning and dyeing | 40.9 | 21.0 | 4.1 |
| General merchandise and variety stores | 42.7 | 17.4 | 1.8 |
| Eating and drinking places | 48.1 | 20.4 | 10.9 |
| All female workers | 40.8 | 26.4 | 7.9 |

Census of Population, 1940, *The Labor Force,* III, Part I, p. 260.

extremely short and long hours are common in domestic service. In general the evidence suggests that hours in domestic service have fallen in about the same proportion as hours in these competing employments. The widening gap between hours in domestic service and the general average of female employment is due in large part to social legislation which has never covered servants.

## 4 Factors Affecting the Income of Servants

The ratio of servants to families fell a third between 1900 and 1940. Nevertheless, the increase in servants' wages has not exceeded that in manufacturing, and may have fallen short of the rise in national income per worker.[28] These facts imply a decrease in the desire of American families to hire servants. What are the facts that have contributed to this decrease?

We begin by describing changes in the characteristics of the employer, the American family, then indicate relevant technological changes in household operation and shifts of activities to the market. Finally, we examine the effects of family income, number of servants, and wages in competing employments.

### *Changing Characteristics of Families*

Of the family characteristics described in Table 11 one is dominant in importance and clear in its effects: the more than doubling of

[28] The increase in national income per member of the labor force (employed and unemployed) rose about 140 percent from 1899 to 1939, compared with 130 percent in money earnings of full-time female servants (*Economic Almanac,* National Industrial Conference Board, 1941-42, p. 334).

TABLE 11

Number, Size, and Distribution of American Families, 1900-1940

| | 1900 | 1910 | 1920 | 1930 | 1940 | % Change 1900-40 |
|---|---|---|---|---|---|---|
| Families (000) | 15,964 | 20,053 | 24,201 | 29,905 | 34,949 | +118.9 |
| Persons in families (000) | 73,411 | 89,149 | 102,814 | 119,812 | 128,427 | +74.9 |
| Persons per family | 4.60 | 4.45 | 4.25 | 4.01 | 3.67 | —20.2 |
| % of population under 10 years | | | | | | |
| Total population | 23.8 | 22.2 | 21.7 | 19.6 | 16.1 | —32.4 |
| Urban population | 20.8 | 18.8 | 19.0 | 17.2 | 13.5 | —35.1 |
| % of married women in labor force | 5.6 | (10.7) | (9.0) | 11.7 | 16.8 | +200.0 |
| % of families not on farms | 64.4 | 69.8 | 72.3 | 77.7 | 79.8 | +23.9 |

Urban population under the age of 10 in 1900 estimated from *Census of Population, 1910*, I, 432.

The count of married women in the labor force in 1910 and 1920 is untrustworthy (see App. A).

the number of families between 1900 and 1940 implies a vastly increased potential demand for servants.

The effect of the tripling of the proportion of married women in the labor force is more difficult to assess. The families with working wives can better afford servants, and the wives are not able to perform as much household work.[29] On the other hand, one-seventh of these working wives enter domestic service; so that in the aggregate we have the proverbial situation of families taking in each other's washing. On balance, we are inclined to believe that the net effect of the entrance of wives into the labor market has been to increase the demand for servants more than the supply, but it is improbable that this factor has been quantitatively important.[30]

[29] The 1935-36 Consumer Purchases Study tends to support the conclusion that among families with equal incomes, those in which the wife works hire more servants; see Family Expenditure on Housing and Household Operation (Department of Agriculture, *Misc. Bulletin 432*), pp. 57-8.

[30] If $a_1$ and $a_2$ are the respective number of servants per family in families with and without a wife in the labor force, the demand for servants rises by $(a_1 - a_2)$ when a married women enters the labor force. In 1940 one-seventh of the married women entered domestic service, so the increase in demand exceeded that in supply if $a_1 - a_2 > 1/7$. In addition, .13 of all families had wives in the labor force, so $.13\ a_1 + .87\ a_2 = .0943$, the number of servants per family. These conditions imply that the entrance of a married woman into the labor force raised the demand for labor more than the supply if $a_1$ is three times as large as $a_2$. The necessary margin of $a_1$ over $a_2$ is reduced if one allows for the fact that those married women who enter domestic service usually come from low-income families which do not employ servants.

A third factor leading to potentially greater demand for domestic service has been the progressive urbanization of families. There is considerable evidence that urban families employ more servants than rural or farm. For example, of the 1930 families without lodgers having one or more servants 'living in', 2.2 percent of urban, 1.5 percent of rural non-farm, and 0.9 percent of farm families had one or more servants 'living in'.[31] The 1935-36 Consumer Purchases Study yields similar data.[32] The evidence suggests, as we shall see, that it is the higher incomes of urban families, rather than their urbanization, which explains the greater demand for servants in cities.

The declining size of family and the fewer children per family have had more ambiguous influences on the demand for domestic servants.[33] There is no doubt that a larger family desires and in an obvious sense needs more assistance in household operation, but the higher necessary expenditures for food and clothing leave less out of a given income for other purposes.[34] It is a statistical commonplace, for example, that within a given income group the expenditure for rent falls as family size increases.

The inconclusiveness of these a priori considerations cannot be wholly removed by study of the available statistics. The samples collected in the Consumer Purchases Study for families with incomes in excess of $5,000 (employing about one-third of all

[31] *Census of Population, 1930,* VI, 26.

[32] See *Family Expenditures in the United States* (National Resources Planning Board, 1941), p. 30.

| | EXPENDITURE ON SERVANTS | |
|---|---|---|
| FAMILIES | Aggregate (millions) | Per family |
| Urban | $522 | $30.79 |
| Rural nonfarm | 116 | 20.42 |
| Rural farm | 61 | 9.01 |

[33] The decline in family size due to fewer children has been partly offset by the decline of one person families. Though the latter cannot be measured directly from Census data, the following percentages of married to all males and females over 19 years of age are informative.

| | *1900* | *1910* | *1920* | *1930* | *1940* |
|---|---|---|---|---|---|
| Males | 63.7 | 65.0 | 67.7 | 68.9 | 69.7 |
| Females | 65.7 | 67.4 | 68.2 | 68.8 | 68.0 |

[34] Income must be held constant in order to isolate the influence of family size, but income and size of family are positively correlated through the age of the family head and number of secondary earners.

servants) are very small, and the national averages are difficult to interpret.[35] The data for New York City and Chicago, where the samples are relatively large, are given in Table 12. The 2 person

TABLE 12

Average Expenditures per Family on Household Help by Size of Family, New York City and Chicago, 1935-1936

| | INCOME GROUP | | | | | |
|---|---|---|---|---|---|---|
| | $2,500-2,999 | $3,000-3,499 | $3,500-3,999 | $4,000-4,999 | $5,000-7,499 | $7,500-9,999 |
| | NEW YORK CITY | | | | | |
| 2-person | $16 | $69 | $89 | $181 | $372 | $416 |
| 3-4-person | 41 | 87 | 180 | 273 | 417 | 703 |
| 5-or-more-person | 6 | 25 | 34 | 101 | 319 | 515 |
| | CHICAGO | | | | | |
| 2-person | 22 | 52 | 74 | 111 | 264 | 538 |
| 3-person | 44 | 91 | 131 | 189 | 353 | 421 |
| 4-person | 66 | 39 | 139 | 236 | 237 | 536 |
| 5-or-more person | 18 | 37 | 36 | 89 | 204 | 400 |

From Family Expenditure in New York City (Bureau of Labor Statistics, *Bulletin 643;* Vol. II), pp. 133 ff.; and Family Expenditure in Chicago (Bureau of Labor Statistics, *Bulletin 642,* Vol. II), pp. 151 ff.

families are made up of two adults, the 3- and 4-person families, of two adults and one or two children under 16, and the 5 or more person families, of adults and children. It seems clear that expenditures on domestic service increase with the number of children (up to two, at least), but this tendency is weaker the larger the family income,[36] and is completely reversed when the larger family con-

[35] Data on consumption were collected from only 840 families with incomes between $5,000 and $10,000, and from only 126 families with larger incomes (*Consumer Expenditures in the United States;* Washington, D. C., 1939; p. 122). The family patterns are given in *Family Expenditures in the United States* (Washington, D. C., 1941), pp. 100 ff. On the whole the data behave so erratically as to defy generalization. But in the important urban group with incomes of $5,000-10,000, the relation between number of persons and expenditure on household help is inverse. What this means is hard to say owing to the width of the income group, the uncertain regional composition, and the uncertain ages of family members, to mention only three factors.

| PERSONS IN FAMILY | AVERAGE EXPENDITURE ON HELP |
|---|---|
| 2 | $325 |
| 3-6 | 271 |
| 7 or more | 234 |

[36] A study of 16 cities or groups of cities confirms these two points. Of 2-adult urban families with incomes of $2,500-3,000, 36.1 percent without children had servants and 50.6 percent of those with one or two children had servants; in the $5,000-7,500 group the respective percentages were 89.9 and 90.9 (Family Expenditures in Selected Cities, Bureau of Labor Statistics, *Bulletin 648,* pp. 303 ff.). The average expenditures of the two family types in the lower income group were $35.80 and $62.80.

tains three or more adults. The greater use of servants by families with children, it should be noted, is shown only for middle income classes. Families with more than two adults should have less need for servants and a larger supply of unpaid service; such families cannot be separated in the data but our findings tend to confirm this expectation. We may conclude that the declining number of children per family has reduced the demand for servants.

*Technological Advance in the Household*

Technological developments have greatly reduced the time and effort necessary to perform routine household tasks. It is tempting to investigate the whole gamut of improvements, ranging from the widespread use of gas and electric stoves to the stupendous gadgets that amuse rather than assist.[37] Instead, we illustrate by brief summaries for two widely adopted appliances—the vacuum cleaner and the washing machine.

Both were produced in quantity only after World War I. Washing machines had sales of about 3,000 in 1909, 70,000 in 1916, and 500,000 in 1919; the vacuum cleaner apparently dates from about 1911;[38] more recent data on domestic sales are given in Table 13. The great improvements in quality preclude accurate or realistic price comparisons, but wholesale prices for standard models fell

[37] As far as stoves are concerned, we are still far from complete mechanization. Many families cooked with fuels other than gas or electricity in 1940.

| | DWELLING UNITS |
|---|---|
| Coal or coke | 3,961,550 |
| Wood | 8,101,610 |
| Gas | 16,776,077 |
| Electricity | 1,837,503 |
| Kerosene and gasoline | 3,343,936 |

(U. S. Census, 1940, *Housing,* II, 40). Only 21.3 percent of the dwelling units were heated by gas or petroleum products (*ibid.,* p. 42).

[38] These estimates were provided by William Shaw of the American Washer and Iron Manufacturers' Association (letter, Nov. 27, 1943). The Census of Manufactures first reports vacuum cleaners in 1921, when output was 740,000 valued at $19.8 million, or 90.4 percent of vacuum cleaners, vibrators, clippers, etc. In 1919 the value, including vibrators, clippers, etc., was $21.8 million. This combination was 39.9 percent of household and industrial equipment, which in 1914 amounted to only $4.0 million.

Similarly in 1925 washing machines had a total value of $61.9 million, or 88.9 percent of washing machines and clothes wringers, etc., and this broader class had the following values of products: 1923, $50,373,000; 1921, $31,621,000; 1919, $43,082,000; 1914, $8,032,000.

TABLE 13

Domestic Sales of Washing Machines and Vacuum Cleaners Biennially, 1921-1939

| | WASHING MACHINES | VACUUM CLEANERS |
|---|---|---|
| 1921 | | 710,000 |
| 1923 | | 1,191,000 |
| 1925 | 882,000 | 1,063,000 |
| 1927 | 892,000 | 1,083,000 |
| 1929 | 1,127,000 | 1,351,000 |
| 1931 | 874,000 | 920,000 |
| 1933 | 1,027,000 | 538,000 |
| 1935 | 1,388,000 | 1,902,000 |
| 1937 | 1,604,000 | 1,493,000 |
| 1939 | 1,449,000 | 1,427,000 |

Data on production from *Census of Manufactures;* adjusted for exports and imports from *Foreign Commerce and Navigation of the United States.*

between 1926 and 1939 from about $80 to $30 for washing machines and from $18 to $10 for vacuum cleaners.

The formal history of the washing machine has apparently not been written but the catalogues of Sears, Roebuck and Company give ample testimony of the great progress. As early as 1896 primitive hand-operated machines were available (at $2.50), but it was almost a decade before the crank-driven 'High Speed Wizard' appeared and became a favorite. It was listed in the catalogue for more than two decades.[39] By 1910 power driven machines were available: those powered by water faucets for $12.40 and those powered by electricity for $46.95. These early machines had wooden tubs; metal tubs began to be prominent in 1920 in washers priced at $134.00.

A similar impression of rapid growth is conveyed by statistics on the production of other durable consumer goods designed to lighten household tasks. The data on the prewar output of the more important, with a few fragments of data for historical comparison, are presented in Table 14. It must be kept in mind, of course, that one must add the output of perhaps a decade before one can form a notion of the stocks of such goods in working order.

A few rash souls have attempted to measure how much these

[39] In 1910 the price was $7.15; in 1920, $17.45; and in 1930, $15.95; apparently without significant changes in construction.

TABLE 14

Household Appliances, Production, Selected Years

| | PRODUCTION | | EARLIEST CENSUS REPORT | |
|---|---|---|---|---|
| | *1939* | *1929* | Production | Year |
| Domestic oil burners | 173,222 | 101,950 | 46,949 | 1927 |
| Mechanical stokers | 90,903 | 7,031 | 7,031 | 1929 |
| Cooking gas ranges | 1,502,301 | 1,602,427 | 1,406,039 | 1925 |
| Electric ranges | 237,128 | 225,477 | 27,260 | 1921 |
| Ironing machines | 129,293 | . . | 71,547 | 1931 |
| Electric appliances | | | | |
| Coffee makers | 1,801,588 | 709,154 | 260,050 | 1923 |
| Toasters | | | | |
| Automatic | 960,459 | 507,017 | | |
| Nonautomatic | 1,477,464 | 1,105,773 | 476,606 | 1923 |
| Waffle irons | 707,674 | 839,633 | 131,445 | 1923 |
| Flat irons, all | | 3,132,822 | 1,407,822 | 1919 |
| Automatic | 2,339,858 | | | |

From *Census of Manufactures*. The 1931 coverage of ironing machines is broader than in 1939.

appliances have lightened household tasks.[40] Without entering this terrain, it is clear that they have reduced the demand for servants, for they not only reduce the amount and unpleasantness of household work but also decrease the social stigma attached to performing certain duties. Pari passu they should have reduced the disutilities of domestic service.

*Transfer of Activities to the Market*

The shift of activities from the household to the business economy has been very extensive during the period under study. A compresensive analysis is again inappropriate here, but the subject is important enough in its own right to deserve at least a brief survey.

The shift from the private home to the multiple-dwelling unit has been very pronounced (Table 15). The average number of dwelling units per dwelling has more than doubled and is now about 4 units. While household demand for gardeners, furnace tenders, etc.,

[40] A typical example, derived in the course of a sales promotion contest for washing machines in 1913, is the winner's letter. The gentleman expressed the savings in dollars (*Electrical Merchandising*, Oct. 1913, p. 286). He doubtless thought time and labor would be saved because one need no longer seek servants.

| | | | |
|---|---|---|---|
| Wages to servants & washwomen | $63.00 | Laundry bills | $2.70 |
| Food & carfare of above | 8.40 | Cleaning bills | 6.00 |
| Labor | 22.00 | Time | 37.80 |
| Fuel | 6.30 | Space | 10.50 |
| Soap | 4.50 | Damage from quantities of steam in room | 2.75 |
| Wear & tear on clothing & materials | 13.50 | Long boiling | 1.00 |
| Tearing out buttons | .60 | Health | 4.20 |
| Laundry damage, e.g., iron rust marks | 1.30 | | |

TABLE 15

Dwelling Units, Percentage Distribution by Size of Dwelling
1900 and 1940

| | *1900* | *1940* |
|---|---|---|
| Dwelling Containing: | | |
| 1 Dwelling unit | 60.8 | 42.3 |
| 2 Dwelling units | 22.3 | 23.9 |
| 3 Dwelling units | 7.6 | 6.9 |
| 4 Dwelling units | 3.3 | 4.9 |
| 5-9 Dwelling units | 4.8 | 8.0 |
| 10 or more Dwelling units | 1.2 | 11.4 |
| Unclassified | .. | 3.6 |
| Total | 100.0 | 100.0 |

Based on cities with populations of 50,000-500,000 in 1900; see *Census of Population, 1900,* II, Part 2, p. 617; *Census of Population, 1940, Housing,* II; pp. 120 ff.

has been reduced, demand by apartment and hotel proprietors for janitors, chambermaids, and the like has been increased. The number of rooms per apartment has apparently also fallen, in part because of the decreasing size of families, in part because smaller quarters are a concomitant of multiple-dwelling life.[41]

More and more foods are being prepared outside the household. Only two examples are given here, bakery products and canned goods, although the immeasurable growth of restaurants is probably more important. The percentage of domestically consumed wheat used by commercial bakeries is a partial measure of the former transfer.[42] The complementary percentages overstate the household use of flour;[43] rough allowance for this overstatement

[41] See *Recent Social Trends* (McGraw-Hill, 1933), I, 476.

[42] The use of flour in bakery products is reported back to 1923 in the biennial Census of Manufactures. Before that year only the value of materials is given; this value was halved to approximate wheat flour purchases—the actual percentage was 45.1 in 1923, 51.6 in 1925, 53.8 in 1927, but averaged 44.4 in the 'thirties. The quantities were computed by dividing by the wholesale price, using Minneapolis Standard patents to 1913, then New York patents to 1899.

The figures for 1929 and 1939 are for consumption (*Wheat Studies,* XVII, 4, p. 214; Stanford University, Food Institute, Dec. 1940); the figures for 1899, 1909, and 1919 are for domestic disappearance (*ibid.,* II, 8, p. 267; July 1926).

| | *1899* | *1909* | *1919* | *1929* | *1939* |
|---|---|---|---|---|---|
| Percentage of wheat flour used by bakeries | 14.8 | 21.2 | 27.9 | 40.6 | 43.4 |

[43] The following uses are also reported in the *1939 Census of Manufactures:* In cereals, 453 million pounds of wheat products—which require on the order of 2,200,000 barrels (II, Part I, p. 150); in distilled liquors, the equivalent of 480,000 barrels, and in macaroni, spaghetti, etc., 3,485,000 barrels; all together another 6 percent of domestic consumption.

suggests that the relative home production of flour products was almost halved. Though we have no information on home canning, the rise in the commercial production of prepared foods greatly exceeds the rise in their consumption, thereby revealing a similar shift to the market.[44]

The shift from flour to bread can also be measured from budgetary studies near the two ends of one period (Table 16). As

TABLE 16

Flour and Bread Consumption by Urban Families in Four States 1901 and 1935

| RATIO OF BREAD TO FLOUR | NEW YORK | | OHIO | | CALIFORNIA | | LOUISIANA | |
|---|---|---|---|---|---|---|---|---|
| | *1901* | *1935* | *1901* | *1935* | *1901* | *1935* | *1901* | *1935* |
| Pounds consumed | 1.35 | 4.60 | .57 | 1.58 | 1.06 | 2.76 | 3.26 | 6.87 |
| Price paid | 1.76 | 1.58 | 1.98 | 1.65 | 2.42 | 1.69 | 1.34 | 1.38 |

Basic data from 18th *Annual Report of the Commissioner of Labor* (1903) and Bureau of Labor Statistics, Retail Prices, *Bulletin 635* (1937). The 1901 study was taken in cities but contains a few farm families. The 1935 cities in these states were combined in proportion to population. As the 1935 cities were probably larger relative to all cities than were the 1901 cities, the increases in bread consumption may be exaggerated, although there is little if any relation between the ratios and the size of (large) cities in the 1935 study.

both studies cover clerical and manual workers in cities, they probably understate the shift as far as urban families are concerned. In each state listed in Table 16 there was a sharp increase—more than a doubling—in the consumption of bread relative to flour, and in all except Louisiana the relative price of bread fell. If we could measure the change in the quality of baker's bread, the explanation of the shift would be much more complete; it is suggestive that near the beginning of the century bakers were claiming that their

[44] Production in these years is from the *Census of Manufactures, 1909, 1919,* and *1939;* for fruits, shipments from Hawaii are included (*ibid., 1909,* IX, 1387; *1919,* IX, 1676; and *Monthly Summary of Foreign Commerce of the United States, 1919, 1929, 1939*). Corrections for exports and imports are based on declared values relative to the value of product (*Foreign Commerce and Navigation of the United States* for the respective years).

| | *1899* | *1909* | *1919* | *1929* | *1939* |
|---|---|---|---|---|---|
| *Canned Vegetables* | | | | | |
| Cases (000) | 20,557 | 36,165 | 61,404 | 132,805 | 182,012 |
| Per 100 persons | 27.5 | 39.9 | 58.5 | 109.3 | 139.1 |
| *Canned Fruits* | | | | | |
| Cases (000) | 3,612 | 4,901 | 18,078 | 36,509 | 74,942 |
| Per 100 persons | 4.8 | 5.4 | 17.2 | 30.0 | 57.3 |

bread was "now" good. The budgetary studies also register by implication the rise of canned foods, for the 1901 study does not mention them.[45]

The taking of boarders and lodgers is another activity that has largely left the household, with the obvious effect of reducing work. At the beginning of the twentieth century 21.8 percent of native families and 25.4 percent of foreign-born families in urban areas reported income from boarders and lodgers. The former received 6.8 percent of its income, or $230 from this source; the latter 9.3 percent or $277.[46] No corresponding national figures are available from the Consumer Purchases Study, but the data suggest that the percentage of families with such incomes has fallen to about 5 or 6, and the percentage of income derived from this source to 1 or 2.[47]

The complete list of activities now carried on outside the household would be very long. In rural areas it would include the manufacture of soap, butter, and clothing, and in urban areas it would range from commercial laundries to nursery schools.[48]

*Family Income and Servants' Wages*

The strong influence of family income on the rate of wages paid a domestic servant, both within cities and between states, has already

[45] The 1935 study reports the number of standard-size cans per family (Bureau of Labor Statistics, Retail Prices, *Bulletin 635,* 1937, p. 183). The following are illustrative for the consumption of fruits and vegetables: New York, 51.6; Atlanta, 54.4; Chicago, 36.5; San Francisco, 39.9.

[46] *18th Annual Report of the Commissioner of Labor* (1903), pp. 51 and 61.

[47] For native New Yorkers the respective percentages are 5.5 and 1.0, and for foreign-born families, 3.4 and .6 (Bureau of Labor Statistics, *Bulletin 643,* I, 106, 146); in Chicago the percentages of families with income from boarders and lodgers are 14.9 (Negro), 6.5 (foreign-born), and 6.1 (native) (*Bulletin 642,* I, 68). For the Pacific Northwest, see *Bulletin 649,* I, 70; for the East North Central, *Bulletin 644,* I, 268, 294, etc.

In the South the percentages are two or three times as large (*Bulletin 647,* I, 86). They were higher also in 1901, but by smaller margins (see *18th Report,* pp. 244 ff.). The 1940 Census reports 4,462,606 lodgers in private households, or one for every 7.8 households; the definition of lodger is broad, however: it includes everyone except relatives and servants and hired hands.

[48] The abandonment of the home manufacture of clothing cannot be measured. The output of ready-to-wear apparel more than tripled during the four decades; however, the shift toward more fashionable and less durable dress and the immeasurable but declining roles of seamstresses and custom tailors make it difficult to isolate home manufacture.

been observed. The equally pronounced influence of income on the distribution of servants among families may be documented from budgetary studies. Expenditures on servants increase rapidly with family income: families with incomes exceeding $5,000 were only 2.6 percent of all families but made 46 percent of aggregate expenditures on domestic service (Table 17). Even if we allow for the higher wages paid by well-to-do families, about half of all servants were employed by less than one-fifth of all families.

From Consumer Purchases Study data the income elasticity of demand for servants can be calculated; i.e., the percentage increase in the expenditures on domestic service when income increases 1 percent.[49] Savings and expenditures on domestic service are much the most responsive to increases in income (Table 18).

The influence of wages on the number of servants employed (i.e., the demand curve for domestic service) is more difficult to estimate. Because of the necessity for removing the influence of income, we must use a unit of analysis (the state) for which income data are available. The state, however, is often too heterogeneous, with its varying urbanization, wage rates, etc. A multiple regression analysis was made of the three variables: (1) the number of servant-years of employment per 1,000 families; (2) average 1939 earnings of female servants who worked 12 months; and (3) average income per family (App. C.).

This analysis confirms the finding of a high income elasticity of demand for servants; the estimate from the regression equation is 2.0. The price elasticity—the percentage change in the number of servants employed due to a 1 percent increase in their wages—has

[49] More precisely, the income elasticity is the quotient of the corresponding *relative* changes, and is measured here by the formula:

$$\text{Income elasticity} = \frac{E_0 - E_1}{E_0 + E_1} \Big/ \frac{I_0 - I_1}{I_0 + I_1},$$

where $I_0$ and $I_1$ are the incomes of two groups, and $E_0$ and $E_1$ the corresponding expenditures on a commodity or service.

The calculation of the elasticity from budgetary data assumes that the relation between the E's and I's is stable, which is improbable with our data. Incomes were rising in 1935-36 and expenditures on servants probably lagged. The calculated income elasticity will be wrong, as applied to stable incomes, unless the lag is proportionately equal for the two income groups being compared. The direction and magnitude of error on this score cannot be determined.

TABLE 17

Average Expenditures on Servants by Income Groups, 1935-1936

| | PAID HOUSEHOLD HELP | | | | PERCENTAGE OF TOTAL FAMILY EXPENDITURES | | | | NUMBER OF FAMILIES (000) |
|---|---|---|---|---|---|---|---|---|---|
| | All families | Urban families | Rural nonfarm families | Farm families | All families | Urban families | Rural nonfarm families | Farm families | |
| Under $500 | $1 | $1 | $1 | $2 | .2 | .2 | .2 | .4 | 4,178 |
| $500- 750 | 2 | 2 | 3 | 2 | .3 | .3 | .4 | .3 | 3,799 |
| 750- 1,000 | 3 | 2 | 6 | 3 | .3 | .2 | .7 | .3 | 4,277 |
| 1,000- 1,250 | 6 | 3 | 11 | 7 | .5 | .3 | 1.0 | .6 | 3,882 |
| 1,250- 1,500 | 9 | 6 | 17 | 9 | .7 | .4 | 1.3 | .7 | 2,865 |
| 1,500- 1,750 | 12 | 9 | 25 | 11 | .8 | .6 | 1.7 | .8 | 2,343 |
| 1,750- 2,000 | 16 | 14 | 30 | 13 | 1.0 | .8 | 1.8 | .9 | 1,897 |
| 2,000- 2,500 | 24 | 22 | 39 | 19 | 1.2 | 1.1 | 2.0 | 1.1 | 2,465 |
| 2,500- 3,000 | 40 | 39 | 61 | 24 | 1.7 | 1.6 | 2.7 | 1.3 | 1,314 |
| 3,000- 4,000 | 74 | 80 | 95 | 31 | 2.7 | 2.8 | 3.5 | 1.4 | 1,182 |
| 4,000- 5,000 | 121 | 138 | 109 | 47 | 3.7 | 3.9 | 3.4 | 2.0 | 403 |
| 5,000-10,000 | 225 | 278 | 154 | 87 | 5.1 | 5.5 | 3.9 | 3.0 | 510 |
| 10,000 & over | 728 | | | | 1.7 | | | | 283 |

*Family Expenditures in the United States*, pp. 1, 3, 53, 58, 62.

TABLE 18

Income Elasticities of American Families, 1935-1936

| | INCOME GROUPS COMPARED | |
|---|---|---|
| | $2,500-3,000 and 4,000-5,000 | $4,000-5,000 and 5,000-10,000 |
| Paid household service | 2.13 | 1.36 |
| Savings | 2.05 | 1.74 |
| Recreation | 1.07 | .93 |
| Automobile purchases | 1.04 | .80 |
| Clothing | .98 | .70 |
| Transportation | .94 | .70 |
| Household operation | .90 | .85 |
| Shelter | .77 | .77 |
| Food | .45 | .45 |

*Family Expenditures in the United States, 1935-1936,* pp. 1-3.

an even greater absolute value: —2.3. In the light of the defects of the data upon which such an analysis must rest, these particular numerical results are necessarily tentative. But it seems safe to infer that the number of servants employed is relatively responsive to changes in the wage rate. This, indeed, is to be expected because of the income structure of employers: the very wealthy have servants at any wage rate, and each successive decrease in wages makes it possible for members of an ever larger income group to enter the market for domestic service.

*A Note on the Supply of Servants*

The ethnic factors discussed in Section 2 are very important in explaining past and future trends in the number of servants; can any other important factors be caught in the coarse net of our statistical data? A study of the number of female servants in 1940 in the metropolitan areas of 35 cities with populations exceeding 250,000 sheds some light on the question.[50]

Ethnic factors account for a good deal of the variation in the number of servants. In Chart 5 the percentage of female workers in domestic service is plotted against the percentage of female servants who are non-white. The closeness of the relation is appar-

[50] The 35 cities with populations exceeding 250,000 are parts of 33 metropolitan areas. Newark and Jersey City are part of the New York metropolitan area, an area so large and heterogeneous that it was deemed desirable to use only the data for the city proper and exclude the two New Jersey cities. The data for the cities, excluding suburbs, are somewhat more erratic, but yield essentially the same conclusions.

similar in entrance requirements and type of work.[52] Some indication of the mobility of women between domestic service and the commercial service industries may be gained by comparing their relative number in each city with their relative earnings. This procedure will yield a supply curve if the demand for servants relative to commercial service workers fluctuates more widely among cities than their relative supplies. It is highly probable that this proviso is fulfilled: average income, the most important factor in the demand for servants, varies considerably among cities; and there are also large differences among cities in the relative size of commercial service industries.

This line of reasoning cannot be tested very satisfactorily by data on wages. The sole measure of wages—average earnings of those who worked 12 months in 1939—is defective on several grounds, one of the most important being that income 'in kind' is omitted.[53] The resulting ratios of numbers and wages of domestic servants to those of service workers are plotted for the large non-southern metropolitan areas in Chart 6.[54] The expectation of a positive relation is confirmed: the coefficient of correlation between the two ratios is .701.[55] Virtually the same relation holds when the percentage of non-white servants is held constant.[56] The influence

[52] If proprietors and persons not reporting incomes are excluded, over four-fifths of this category consists of charwomen, cooks, servants, waitresses, housekeepers, untrained nurses, etc.

[53] No account is taken of unemployment. In 1940, 9 percent of both experienced service workers and experienced domestic servants were unemployed.

[54] These are the metropolitan areas used in Chart 5 except that Oakland and San Francisco are separated because servants' wages in the two cities differ by $115.

[55] The equation of the line in Chart 6 is $X_1 = .349 + .293\ X_2$, where $X_1$ is the ratio of servants' to service workers' wages and $X_2$ is the ratio of the number of servants to the number of service workers.

[56] If $X_3$ denotes the percentage of non-white servants, and $X_1$ and $X_2$ have the same meanings as in the preceding note, the multiple regression equation is $X_1 = .307 + .367\ X_2 - .00136\ X_3$, where the numbers in parentheses are the standard errors
(.081) (.00097)
of the regression coefficients. The multiple correlation coefficient is .732 and the other coefficients are

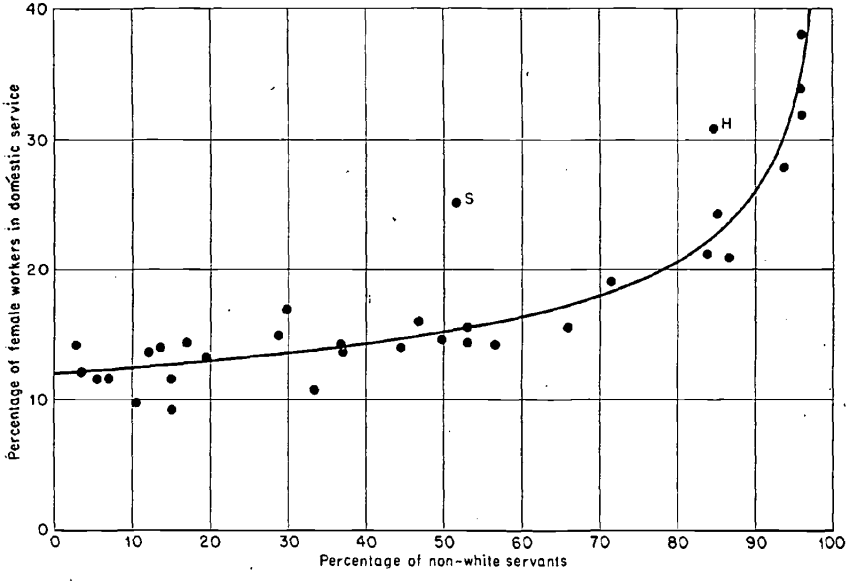
$r_{12} = .701$ $r_{12.3} = .702$
$r_{13} = .294$ $r_{13.2} = -.295$
$r_{23} = .647$ $r_{23.1} = .648$

When $X_2$ is treated as the independent variable, the multiple correlation coefficient is .840.

ent; the correlation coefficient is .906.[51] Indeed, the two large deviations, San Antonio and Houston (labelled S and H in Chart 5), are not real exceptions since both, and especially the former, have large Mexican populations. But the southern cities dominate this picture: there would be only a slowly rising regression line if they were omitted, and the correlation coefficient would be much smaller.

CHART 5

Relation between Percentage of Female Workers in Domestic Service and Percentage of Non-White Domestic Servants Metropolitan Areas of 33 Large Cities, 1940

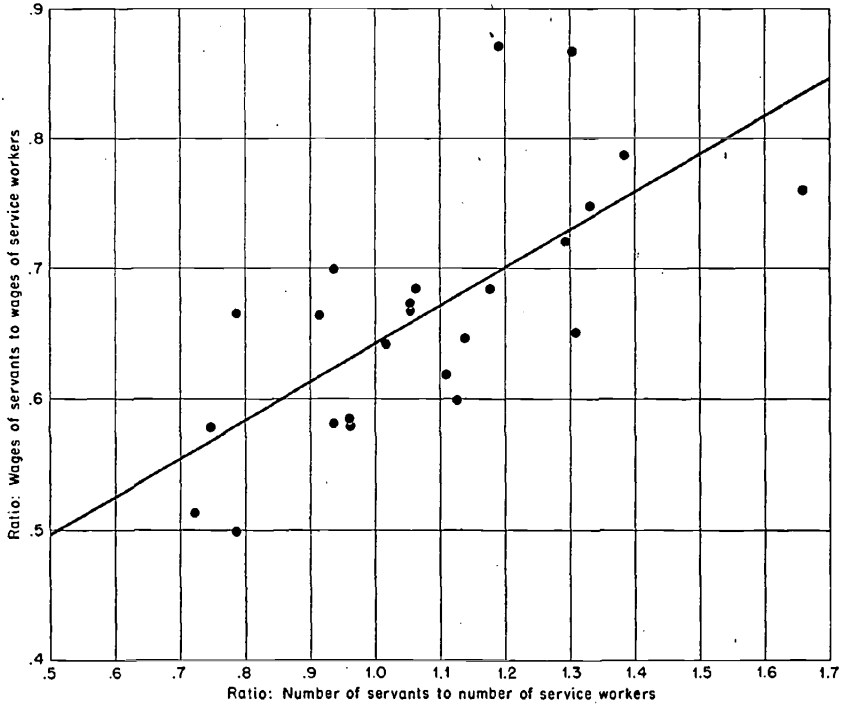



Several difficulties beset an attempt to determine the influence of wages on the number of servants. The chief competitive 'occupation' is no doubt marriage, and in the South agriculture is perhaps the most important alternative employment. In other regions, the service industries (other than domestic and protective) seem most

[51] The equation of the curve is $X_1 = 56.27\ (100 - X_2)^{-.3350}$, where $X_1$ is the percentage of female workers who are servants, and $X_2$ is the percentage of female servants who are non-white. The correlation coefficient is computed from the logarithms of $X_1$ and $X_2$.

CHART 6

Relation between Ratio of Servants' to Service Workers' Wages and Ratio of Number of Servants to Service Workers Large Non-Southern Cities, 1940




of ethnic factors is dominant only when southern cities are included; in the North and West wage rates are as or more important.

## 5 Conclusion

It is venerable Anglo-Saxon tradition to view the servant problem with alarm. Even in Utopia Thomas More felt the need for bondsmen purchased from societies where they had committed crimes—a policy, it will be recalled, subsequently adopted in the American colonies. It is to be feared that many would still favor this and related solutions of the 'problem'.[57]

[57] In 1926 the Canadian Department of Immigration and Colonization issued a pamphlet (Housework in Canada) to entice more immigrant women into Canadian homes. The pamphlet paints a glowing picture of life in Canada; there was even an attraction, one suspects, in the parting admonition: "Do not accept from strangers the offer of a ride in a motor car."