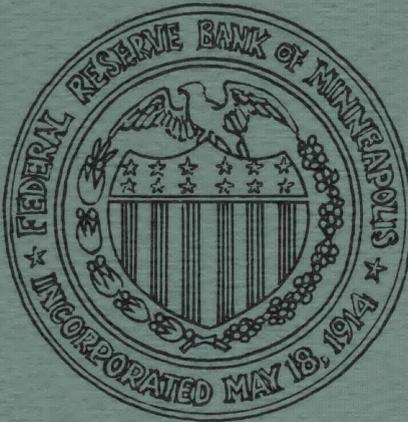
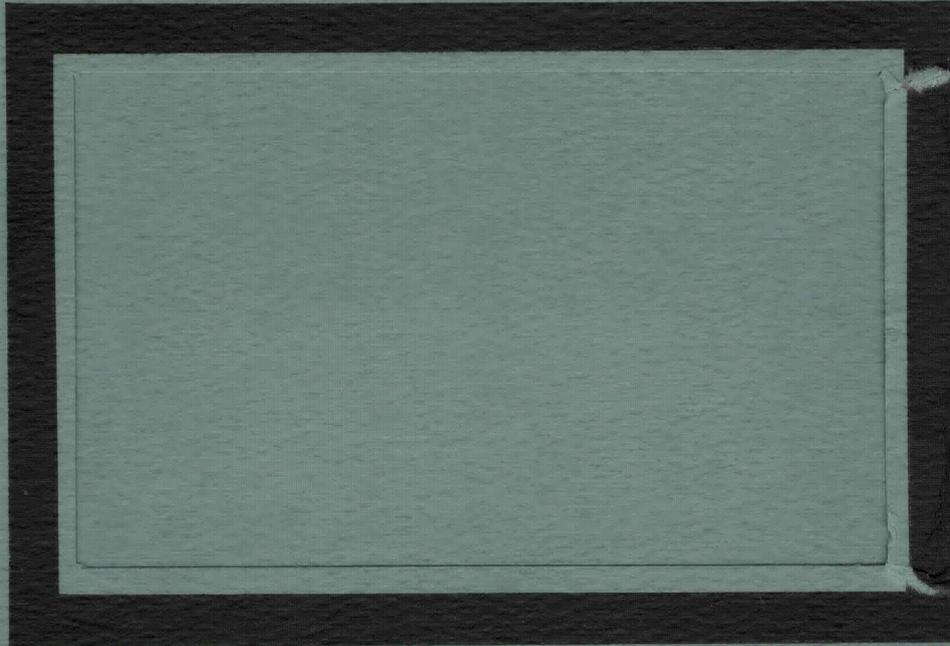


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Women's Work in 1980:
Where Will the Jobs Be?

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March 1975

Working Paper #: 38

Rsch. File #: 342.1

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Women's Work in 1980:
Where Will the Jobs Be?

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Women's Work in 1980: Where Will the Jobs Be?*

Paul Samuelson, writing on the topic of discrimination in his famous textbook, asks the question:

"How is it that a woman who has the same amount of schooling as a man, who also has two eyes and hands, the same tested IQ and aptitude scores, and the same parental background, nonetheless ends up getting paid for full-time work an average of only 60 percent of what a man of similar abilities gets?"^{1/}

Later in the same chapter, he partly answers his own question as he cites examples of the prevailing myths about working women-- myths that are commonly used to justify the pay and employment differentials of men and women.

Women, the mythology says, "are emotional. They have monthly ups and downs. They cannot carry heavy weights. They lack self-confidence. Men will not work under a woman . . . Women lack imagination and creativity. If you mix men and women . . ., they will carry on to the detriment of efficiency and good morals. By the time you have trained a woman, she'll get married and leave you . . .; or alternatively, you won't be able to get rid of a woman once you've hired her. If a woman does turn out to be a superlative economic performer, she's not feminine . . ." ^{2/} And so on.

Such is the mythology which has dominated our culture almost without challenge until relatively recently. By any comparison to the real and observable world about us, the mythology seems absurd and antiquated. Yet it still survives.

True, by fits and starts, the situation is changing. But changes have come--and will continue to come--slowly. Today, we will focus on some of the past changes and will consider possible future changes. More specifically, I hope to do three things today: (1) to summarize past gains and present trends, (2) to indicate some of the

supply and demand factors underlying those trends, and (3) to speculate on the future economic prospects for working women in Minnesota.

I have promised to keep my presentation short in order to allow time for discussion. Accordingly, I am going to restrict my own comments in several ways. First, I am going to stay within the traditional straits of economics. I recognize that there are hazards in this somewhat narrow approach. The topic of women in the work force has many noneconomic aspects, and in some ways the noneconomic considerations may be more important than the economic considerations--even to an economist. Still, I would argue that economics is at the core of the women's movement. And the degree to which women can gain equal access to jobs and incomes will go far in determining whether their overall drive for full equality succeeds or fails.

Much of my presentation will deal with long-run trends. I will comment on the future, but my comments will be somewhat general in nature. I have not prepared a detailed scenario of the future. Nor will I comment on the job outlook in specific occupations. I have neither the expertise nor the insight to do that, and given the current uncertainties in the economy, the presentation of a detailed scenario of 1980 conditions seems a dubious undertaking. Instead, I view my charge as providing a broad economic interpretation of long-run developments.

Past Trends and the Present Situation

First, we must consider the state within the context of the national economy.

The same economic forces which buffet the national economy also influence Minnesota. The same forces that shape the attitudes of

citizens in--say--Atlanta, Boston, or San Francisco, also shape the attitudes of this state's citizens. Though Minnesota is not as sensitive to the business cycle as is the national economy, it is not immune to inflation or unemployment, and the economic policies made in Washington are perhaps as important to our state's well-being as the policies made in St. Paul.^{3/}

This state is not an economic island. We sell our goods in national markets, and we buy products from other regions. Resources move freely from state to state. The technologies available to Minnesota firms are no doubt similar to those in other regions. And while it is true that a region within the state may occasionally be caught in an economic backwater, a region as large and diversified as this state is not likely to deviate far from the economic mainstream.

Thus it should come as no surprise to us that the state's trends in female employment and income closely parallel national developments.

In both the state and the nation, women's share of total employment has risen steadily over the last three decades. By the last census more than two of every five workers were women.

Participation rates of women have moved together in the state and the nation. Likewise, growth rates in the female labor force have followed similar patterns. Growth rates have been rapid since the forties. The only dip came in the fifties--possibly either because of the two recessions of that decade or because of the emphasis on the nuclear family.

The occupational mix of female workers in Minnesota is strikingly similar to that of the nation.^{4/} In both cases, roughly a

third of the jobs are in the clerical field. About 15 percent of the women workers are in the professions--mainly nursing and teaching. Roughly three of every five workers are in white collar jobs. And nationwide--as is well-known--women have had little success making inroads into management or the skilled trades; the same is true at the state level.

That women have made employment gains in the state is undeniable. The employment of women workers has increased dramatically in Minnesota in the past third of a century, and employment has nearly doubled in the past two decades alone. Women have gained both absolutely and relative to men. Since 1950 job gains by women in the Twin Cities metro area--at least in sheer numbers--have matched those of men. And in outstate areas, while male employment was falling in the past quarter century, female employment grew by better than 100,000 workers.

Earnings are also up, but are still below the earnings of men and the gap is not narrowing. Among women employed year-round the median income of female workers in the state in 1970 was nearly 250 percent of what it was in 1950. Over those same two decades, male earnings jumped 278 percent.

The income position of women is depicted more starkly when we look not just at the workers employed year-round, but look instead at all women and at the distribution of incomes. Here, women fall far short. Male incomes are distributed rather broadly over all income levels with a heavier concentration coming in the middle and upper-middle income levels. On the contrary, the largest proportion of females fell in the category of having no income in 1970. Better than 40 percent of the women between 18 and 65 earned less than a thousand dollars per year, compared to only 8 percent of the men.

In the aggregate--that is, when we add up all the income received by all men and women--women get only about a fourth of the money income received by all income recipients. The share is slightly lower in rural areas.

This figure--this 25 percent of aggregate income--does not reflect the full contribution of women to our state's economy, for women produce goods and services for which they receive no money income. The housewife who bakes a cake is adding to the current production of goods and services just as much as is an employed baker. But the contribution of the housewife never shows up in our figures on money income or our data on GNP.

Can we adjust the income figures to take account of this defect? We can certainly try. What is entailed is imputing a wage to the services performed by persons who are not in the work force--namely the services performed by housewives.

If, for Minnesota in 1970, we assume that--outside the work force--there were about 425,000 housewives between the ages of 16 and 64 who, on average, were performing services valued at \$2.25 an hour 40 hours a week,^{5/} then the household sector of this state contributed about \$2 billion that year which didn't show up in GNP. That adjustment would have raised the share of women in the state's aggregate income to about one-third.

In addition, we should also note that the adjustment that I made is not all-inclusive. It doesn't, for example, impute any value to the services performed in the household by the women who were also in the work force.

And regardless of whether these computations overvalue or undervalue the true contribution of household work, one thing is certain: women's contribution to GNP is undervalued by the existing national income accounting system.

In summary, the overall female labor market in Minnesota--like the male labor market--has been characterized by rapid gains in employment and income. But while female employment gains have been more rapid than for males, the income gains of females seem to have lagged those of men.^{6/}

As in the nation, segregation by sex is pervasive in Minnesota's labor markets. That concentration was obvious in the previous discussion. And for women the concentration is greater than for men. Three broad occupational categories--the professions, clerical fields, and services--accounted for better than seven in ten female employees.

Among the professions, nearly two-thirds of the female professionals were either registered nurses or teachers. And concentration was also high in the services area where about three-fourths of the women were in either of two groups--food services or health services.

To say that women are concentrated in too few occupations is merely the converse of saying that there are other occupations in which women are not present to a significant degree.

First, consider several of the professions. In 1970 fewer than 1 percent of the state's engineers were women. Only 4 percent of the lawyers were female. And fewer than one of every sixteen physicians was a woman. Nor have women been active in the crafts. In 1970, only about 1 percent of the carpenters, plumbers, and electricians in

Minnesota were women. And less than 5 percent of all workers in the crafts were women.

Determinants of Employment and Income

What specific supply and demand factors determine the occupational mix? How have these factors been changing over time? And what is likely to happen in the future?

The factors which shift the demand curve for women workers include changes in the industrial structure, the rising affluence of consumers, the changing industrial structure, demographics, and the degree of discrimination. Let's take these in turn.

First, changes in the industrial structure determine changes in the occupational structure. It works like this: The mix of goods and services supplied in our economy is--at least over a long run--responsive to consumer buying habits. Changes in those habits cause changes in the industrial structure. The demand for the products of some industries--say, farming--may typically grow fairly slowly. The demand for other goods and services may grow rapidly.

Moreover, the occupational requirements of each industry differ. So shifts in the industrial structure cause shifts in the demand for different occupations. Thus, a slow rate of growth in the demand for farm products causes--quite naturally--a slowdown in the demand for farmers.

In Minnesota the shift in the state's industrial structure since 1940 has been remarkable. First manufacturing employment, then services employment, replaced farming as the most important economic activity. Changes in the male occupational mix paralleled the shifts

in the industrial structure; farm numbers fell, while trades workers and professional workers increased in numbers.

Among women workers, the occupational mix was more stable.^{7/} There was some growth in the importance of the clerical occupations. And household services employment declined rapidly back in the forties. Still, the changes which did occur were relatively minor. In fact, the stability over a thirty-year period is striking. Despite three wars, a long period of sustained economic growth, the transformation of the state's industrial structure, and the entry of large numbers of women into the work force, the broad occupational makeup of the female work force has not changed much at all.

What is the reason for the stability of the female occupational mix in an economy--and a society--that are both in rapid flux? The explanation, it seems, is fairly simple: More so than men, women have worked in jobs that are needed regardless of the industrial mix. Certainly that is true of nurses and teachers, cooks and secretaries.

Widespread affluence is another factor which is boosting the demand for female labor.^{8/} The line of causation runs like this: as families--or individuals--become more affluent they begin paying other people to do the things that they don't like doing themselves or can't do efficiently for themselves. This alters the industrial structure and translates into a rising demand for the laborers employed in supplying personal services. For example, we eat out rather than cooking in homes. We throw away our monkey wrenches and hire plumbers. And rather than using home remedies, we more and more rely on the services of physicians and nurses.

Another cause of the rising demand for female labor is the increasing stratification and complexity of our industrial structure.^{9/} As the industrial structure becomes more complex, the demand increases for the workers who are in large part engaged in the preparation, processing, transmission, and interpretation of information. The group includes clerks, typists, programmers, and so on. Many of these workers have typically been women.

Demographics--especially the age structure of the population--is another important factor which influences the demand for female workers. Consider the recent experience in the teaching profession: a few years ago the age structure of the population created a large demand for the teachers necessary to tutor the postwar baby boom. Now that the baby boom has moved into the work force, supplies of female labor are relatively large and the demand for teachers has fallen off. Other examples of the demographic influence are not so pronounced.

A final determinant of the demand structure for female labor is discrimination. A bias against female laborers in some occupations will push down the overall demand for female labor or will channel female labor into low-paying occupations. That there is--and has been--discrimination against women is undeniable. But the extent of discrimination is not known and is less widely agreed upon.

Barbara Bergmann, for instance, says that "There is considerable evidence that discrimination is far from a negligible factor" in determining occupational structure. And as she adds, though "much of the evidence is anecdotal, it is no less real for being so."^{10/}

Other economists have questioned the discrimination argument. Fuchs, for instance, writes that,

"neither inherent physical or mental differences nor employer discrimination can explain most of the differential in earnings."^{11/}

And Samuelson cautions that "no mere banishing of prejudice . . . will provide miraculous uniformity of opportunity and incomes."^{12/}

Discrimination shouldn't pay. It's expensive to discriminate, and most firms probably can't afford it. Still, one cannot deny that it exists.

Demand factors alone do not determine income and employment. Supply considerations are just as important. And now we must ask: What determines the supply of female labor in the marketplace?

The overall supply of female labor--including both market employment and household employment--is obviously determined by the number of working-age women.

The supply of labor to the market is determined by the tradeoff between home production and market work. However, we don't know very much about the value which women place on housework. It has been argued that the large growth in the female work force implies that the value placed on housework is falling vis-a-vis the return that can be earned in the marketplace.^{13/}

We do know some things about the wage and income considerations which influence the labor supply: Among low-income groups, the wife is more likely to work and is also likely to contribute a substantial portion of family income.^{14/} All else constant, the higher the husband's income, the more likely it is that the wife won't work. And, of course, relative wage rates in different occupations influence career decisions. Among women in Minnesota, incomes are highest in the

professions. Clerical workers are in the middle-income range. Service workers and sales workers were in the lower-paying occupations.

Certainly, a great many women have switched from housework to a combination of housework and market work. But many women are still outside the work force.

For example, among Minnesota women 14 and over, there are four women not in the work force for every three women who are working. That added up to better than 800,000 women in 1970, compared with a female work force of about 600,000.

That so many women are still outside the work force and that they are either working part-time or not at all implies--it seems to me--that there is still a potentially large supply of female labor which could be drawn into the work force if the opportunities existed.^{15/} There is, logically, some price at which any woman would value her work in the marketplace more than her work in the home. As wages rise, one would expect an increased rate of entry into market employment.

How many of those 800,000 women represented potential entrants into the work force? A good many, I would surmise. Let's start paring the total down: About one in twelve was either 14 or 15 years old and therefore presumably in school. Among women 16 and over, 83,000 were enrolled in school. A fifth of the 800,000 were over 65, and about 3 percent were inmates in institutions. That still leaves about 460,000 women between the ages of 16 and 64, and only two in five of those women had children under the age of 6. Eliminating those women leaves about a quarter of a million women who--it seems to me--represented potential entrants into the work force. And as long as there is such a reservoir of labor still outside the work force,

there will be downward pressure on wage rates for women, especially if women are still being channeled into the traditional female occupations.

And this reservoir of female labor has been with us for the last third of a century. If, in each of the last four census years, the participation rates among female workers had been the same as for male workers, then better than half a million jobs would have been needed in Minnesota in both 1940 and 1950 and about 450,000 additional jobs would have been needed in 1960 and 1970.

Other factors influence the overall supply of female labor. Participation rates of female workers differ across age groups far more than is the case with men. The rates decline for women of childbearing ages, but pick up again among the older age groups. Over the long run, participation rates have been rising for all age groups. And--at least for women past their midtwenties--the occupational mix is fairly similar across all age groups.

The investment in human capital--that is, the education, training, and experience acquired by workers--is a fourth factor which shapes the supply response of female workers. Let me make several comments about human capital investments: First, women with more education are more likely to enter the labor force; that makes sense in that the opportunities lost by not participating are greater for the educated woman.^{16/} Second, the workers who embody greater human capital will likely--though not necessarily--find their way into the better jobs. Third, if we view human capital expenditures as an employers' investment, then clearly--given the current institutional framework--the woman worker is disadvantaged relative to the male.^{17/} The reason for this is that the female worker--viewed as a capital good--may be idled

over her childbearing years, and the expected returns from a fully employed input are greater than for an input which is idle over part of its lifetime. Hence, the employer has a greater incentive to invest in the male worker. One solution is to seek institutional revisions which minimize the "downtime" of the female worker--that is, the solution is to provide through public or private channels the child-care facilities which are needed to free female labor resources.

Fourth--and still on the topic of investment in human capital--we note that with all else constant, the employer would prefer to invest in the input which has the longer working life. That means that the older worker seeking to reenter the labor force is disadvantaged relative to the younger worker. Thus the problem faced by women is this: the employer will not invest in female workers because they will be forced to drop out of the work force for several years. But when these women come back in, the employer may still be reluctant to invest in them because they now have a shorter working life than younger workers--male or female.

Thus there is a vicious line of causation in the human capital argument, and it runs like this: To get into, say, managerial positions, women need the embodiment of as much human capital as their male counterparts. But the investments in human capital will not be made so long as women may have several years of downtime during their working lifetimes. And so long as women have children, they are likely to be idled at some point because they need to take care of their children. That is why day-care centers and child-care facilities are of such crucial importance to the women's movement.

I have indicated several of the supply and demand factors which determine female incomes and employment. There are probably others which I have not considered. Future levels of income and employment--and the occupational structure of female employment--will be determined by future shifts in these supply and demand factors.

Future Prospects

What is the outlook for female workers over the short run and the long run? And how might economic or political developments disrupt the likely course of events?

Some forecasters already have their hats in the ring. Let's quickly review their forecasts. Fuchs, taking a long view, sees the outlook as highly favorable.^{18/} He argues that women will find increasing acceptance in a variety of occupations, that the constraints of sex-stereotyping will gradually be eliminated, and that the increased shift toward a services economy all augur well for the women's movement.

Denis Johnston, of the Bureau of Labor Statistics, forecasts that female participation rates will not be growing so rapidly through the rest of the 1970s and 1980s.^{19/} He attributes the slowdown to two factors: (1) an increasingly large proportion of working-age women will be concentrated in the 25 to 34 age group, which has had lower participation rates; and (2) the fertility rate--he says--will gradually rise from its current level of 1.7 to a replacement level of 2.1. Johnston recognizes that these assumptions are controversial. Moreover, as I've indicated, there seems to be a fairly large body of underemployed women in the work force, so it is by no means certain that overall participation rates will decline. If they do slow down, the result would be to take some of the pressure off the supply side of the female labor market, and--if

demand keeps growing--to increase female earnings more rapidly than in the past.

Other forecasters, however, see tighter labor markets in the years immediately ahead. Jane Hedges, also of the Bureau of Labor Statistics, has said that many more women must be prepared to move outside the traditional female occupations for this decade, or the consequence will be high unemployment among female workers.^{20/}

Hilde Kahne, of Radcliffe, says that the next few years will see a difficult job market--for both men and women.^{21/} She agrees that the traditional female occupations will not be able to absorb the increased numbers of women seeking work.

Regarding specific occupations, Paul Rosenthal, of the Bureau of Labor Statistics, has said that the overall market for college grads is expected to be tight into the 1980s--though there are individual fields in which the market will be strong.^{22/} The BLS has estimated that the supply of college graduates nationwide will exceed the demand by three-quarters of a million workers--or an excess supply of about 5 percent. The excess will be greater in some fields. From 1980 to 1985 the market will tighten still further, and the overall excess supply is expected to run at better than 10 percent. This will occur despite a slowdown in the number of degrees granted.

What are the implications of this excess supply of college graduates?^{23/} First, it means that the competition for professional positions is going to be tough for both men and women. Second, it means that the student has to pick and choose carefully. Continuing shortages are still anticipated in engineering and medicine over the next decade. On the other hand, there is expected to be a glut of teachers, at least

into the 1980s, though there may again be something of an upturn in the mid-1980s.^{24/}

Let me comment now on these various forecasts and add some considerations of my own.

These forecasts are certainly not incompatible. It may be, as Kahne argues, that labor markets will be tight for several years to come. I tend to agree with that. The baby boom is now--and has been--entering the work force. Labor supplies are growing more rapidly than they have historically. Our capital plant is expanding at historical rates. The result is that labor is growing rapidly, relative to capital. Unless there are offsetting technical changes, this--it seems to me--implies a period of slow growth in real wages and a period of high job competition.^{25/}

Moreover, though we might talk wistfully of a postliberation economy, it seems to me that--for economic reasons alone--it's still a long way off. Unless we see rather dramatic institutional changes, it is simply not possible for the economy to absorb the increased labor that women would supply if their participation rates were to rise to equality with men. To reach such a "postliberation" ideal, much additional investment in our capital plant would be needed.

And I might additionally emphasize that this forecast has nothing whatsoever to do with the current downturn in the economy. Labor markets are likely to be tight until the late 1970s, even if we see a rapid recovery from the current recession. A primary reason--to repeat--is demographic--the baby boom simply cannot easily be absorbed into the work force.

I have indicated that the years immediately ahead may be a period of slow growth in real wages. Women should keep in mind, however,

that employment opportunities are not entirely determined by the rate of economic growth or by the growth rate of different occupations. In fact, for many occupations a high turnover rate guarantees that job openings will far exceed the openings created by economic growth alone.

The number of job openings in any occupation clearly depends on the size of that occupation, on the turnover rate in the occupation, and on the growth rate of the occupation. To now, we've talked largely in terms of growth rates. But it's possible that there might be more opportunities available for women in a large, slow-growing occupation than in a smaller, rapidly growing occupation. This is something which the potential entrants must consider for themselves. But let me illustrate my point with some examples.

Women are currently making further inroads into many of the professions. The number of women enrolled in law schools around the country quadrupled from 1965 to 1972--and in 1972 equalled 12 percent of the total law school enrollment. The proportion of medical students who are female increased from 4 percent in 1960 to 12 percent in 1972.

Female dental student enrollment tripled but still amounted to only 3 percent of total enrollment in dental schools. The same was true in engineering. Gains in degrees granted showed the same upward trends.

But, in Minnesota, if the number of female physicians, dentists, surgeons, lawyers, judges, engineers, and architects were all to increase by 10 times over in the current decade, total employment in these professions would still amount to only about 1 percent of the projected 1980 female labor force.^{26/}

Or to take a second hypothetical example, rapid growth in the demand for lawyers would create far fewer job openings than a slow rate of growth in the demand for secretaries.

Let's also consider some real-world examples. First--at least nationwide--female employment in the skilled trades was up 80 percent in the 1960s, nearly twice the rate of growth in overall female employment.^{27/} That happened even though the skilled trades was one of the slower growth occupational groups.

A second example of increased female participation in a traditional male sector--and a slow growth sector--is the move of women into mining in increasing numbers. A trade journal reports that the hiring of women by U.S. and Canadian mining companies is up 100 percent in the last decade. Women are working as truckers, welders, drill operators, and bulldozer operators. One of the reasons for the female employment gains is a shortage of male labor.^{28/}

Clearly, women are making inroads into the traditional male occupations. The lesson from the examples just presented is this: Women should not be discouraged from seeking employment merely because of slow growth; significant gains can be made simply by exploiting the turnover rates in the traditional male sectors.

We have covered much ground, and it is time to tidy up my discussion. Let me quickly do so by summarizing several of the key considerations which will determine the situation of female workers through the remainder of the 1970s and into the early 1980s.

First, rapid growth in the labor force through the remainder of the 1970s will put pressure on labor markets. Overall growth in the labor force will slow by 1980, but growth in female employment will still be strong as the baby-boom generation moves through the childbearing ages and attempts to reenter the labor force. As Johnston has put it, "The baby boom generation will strain the economy at every stage as it moves through the life-cycle."^{29/}

Second, it appears to me that there is still a large body of female labor outside the labor force, and I believe that there is still the potential for substantial gains in female employment--perhaps over the rest of this century. Rapid gains in employment, however, are contingent on the existence of employment opportunities and on the establishment of the child-care centers needed to free female labor resources.

Third, women will continue to make inroads into managerial positions, into the skilled trades, and into other professions. This will be true even if the growth rate in those occupations is slow. A primary factor underlying these gains is the weight of law as specified in the Equal Employment Opportunity Act of 1972. The gains will be sizable, relative to past levels of female employment in those occupations. However, the gains are still likely to be fairly small relative to the total gains in female employment.

Fourth, many professions will be buyer's markets into the mid-1980s for both men and women because of the excess supply of college graduates.

Fifth, there should be gains in the traditional female sectors in the next few years because of the shift toward a services economy and because of rising per capita incomes over the long run. The rate of gain will depend on how quickly we recover from the current recession.

Sixth, there is still much institutional inertia in the economy and progress toward a more equitable society will likely come slowly. The inequities which now exist cannot be righted quickly. And despite substantial gains in some occupations in the 1970s, the overall female occupational mix in 1980 may not look far different from what it was in 1970.

Finally, economic developments through the rest of the 1970s and into the 1980s obviously depend on how effectively we are able to deal with the current problems of inflation, recession, and energy. I have suggested that labor markets will be tight in the near future even if there is a quick recovery from the current recession. A protracted recovery means that labor markets would be even tighter. Over the longer run, as growth in the labor force slows down, the opportunities for increased participation by women should increase substantially.

Women--like men--are hurt by recession, inflation, and high energy and food prices. There seems little reason to suppose that inflation and the energy crisis hurts women more than men. But I am not sure if the same things can be said of unemployment. On one hand, women workers are probably concentrated in the sectors which are not as cyclical as, say, the durable goods industries. On the other hand, female unemployment rates are typically higher than male unemployment rates, and, moreover, many would-be female entrants into the work force may be discouraged from entering during an economic slump.

FOOTNOTES

* The author is an economist for the Federal Reserve Bank of Minneapolis. Appreciation is due to Shelly Fitzmaurice of the Minnesota Department of Employment Services, to Ester Wattenberg of the University of Minnesota, and to the author's colleagues at the Federal Reserve Bank, all of whom provided helpful assistance, comments, and criticism.

The views expressed here are the sole responsibility of the author and should not be construed as necessarily reflecting the views of the Federal Reserve Bank of Minneapolis.

1/ Paul A. Samuelson, Economics, 9th ed. (New York, 1973) p. 787.

2/ Ibid., p. 796.

3/ John E. Brandl (University of Minnesota), "Minnesota's Economy: the Future," (paper presented to the Minnesota Legislature as part of the "Minnesota Horizons" legislative seminar, January 14, 1975).

4/ Data presented in this study is taken primarily from the U.S. Census of Population. Readers should be aware that census data is based on samples of the population, that it is taken every ten years, and that respondents' interpretations of questions may not be entirely consistent from census to census. For a more complete discussion, see Carolyn Shaw Bell, "Definitions and Data for Economic Analysis," in Women and Success: The Anatomy of Achievement, edited by Ruth Kundsinn. William Morrow and Company, Inc., (New York, 1974), pp. 151-159.

5/ Leibowitz says that the average housewife puts in 53 hours of labor per week. Kahne says that the employed woman puts in an average of 34 hours of housework per week in addition to her time spent on the job. See Arlene Leibowitz, "Education and Home Productions," American Economic Review, Vol. LXIV, No. 2 (May, 1974), pp. 236-242; and "Prospects for Women Who Want to Work (An Interview with Hilda Kahne)," Radcliffe Quarterly, I (December 1974), pp. 2-4.

6/ One caveat needs to be noted here. Victor Fuchs, in looking at national data for the 1960s, concluded that the earnings of women have actually grown faster than the earnings of men after adjusting for hours worked and other factors. Moreover, he concludes that the ratio of female to male earnings actually increased by about 5 percent in the 1960s while the ratio of female to male employment was up by about 20 percent. And, attributing these changes to basic developments in our industrial and occupational structure he paints a fairly rosy future for female workers over the long run. See Victor R. Fuchs, "Recent Trends and Long Run Prospects for Female Earnings," American Economic Review, Vol. LXIV, No. 2 (May 1974), p. 237.

7/ For a more extensive discussion of long-run trends in the female occupational structure, see Shelly Fitzmaurice, "The Employment Status of Women in Minnesota: 1900-1970," Review of Labor and Economic Conditions, Vol. I, No. 3 (3rd Quarter, 1974), published by the Minnesota Department of Employment Services, pp. 13-24.

8/ Fuchs, loc. cit.

9/ Elizabeth Waldman and Beverly J. McEaddy, "Where Women Work--An Analysis by Industry and Occupation," Monthly Labor Review (May 1974), pp. 3-13.

10/ Barbara R. Bergmann, "The Economics of Women's Liberation," Women and Success: The Anatomy of Achievement, ed. Ruth Kundsinn (New York, 1974), pp. 171-177.

11/ Fuchs, loc. cit.

12/ Samuelson, op. cit., p. 799.

13/ A recent study which analyzes the tradeoffs between home production and market production is Leibowitz, op. cit., pp. 236-242.

14/ Fuchs says the labor supply function for educated females is more inelastic than the labor supply function for less-educated females. One consequence of the differing supply elasticities in the 1960s was that the incomes of educated females rose more rapidly than the incomes of less-educated female workers. See Fuchs, op. cit., p. 239.

15/ Ester Wattenberg (University of Minnesota), "Learned Helplessness: Some Observations of Women in the Labor Force and Their Implications for Social Work," (unpublished paper presented to the National Association of Social Workers, Inc., May 1974), p. 5.

16/ Leibowitz, op. cit., p. 243.

17/ Juanita Kreps, Sex in the Marketplace (Baltimore, 1971), p. viii.

18/ Fuchs, loc. cit.

19/ Denis F. Johnston, "The U.S. Economy in 1985: Population and Labor Force Projections," Monthly Labor Review (June 1970), p. 19.

20/ Janice Hedges, "Women Workers and Manpower Demands in the 1970's," Monthly Labor Review (June 1970), p. 19.

21/ Hilda H. Kahne, "Employment Prospects and Academic Policies," Women and Success: The Anatomy of Achievement, ed. Ruth Kundsinn (New York, 1974), pp. 160-161.

22/ Neal H. Rosenthal, "The U.S. Economy in 1985: Projected Changes in Occupations," Monthly Labor Review (December 1973), pp. 22-24.

^{23/}Rosenthal, op. cit., p. 22.

^{24/}Gerald W. Christiansen (Minnesota State Planning Agency, "What Do the Population Changes Mean?" (paper presented to the Minnesota Legislature as part of the "Minnesota Horizons" legislative seminar, January 14, 1975), p. 3.

^{25/}Gross Private Domestic Investment as a proportion of gross national product was roughly the same in 1964-73 as it was in the previous decade. However, growth in the labor force was much greater than in the previous decade. Growth in the labor force was due both to a growing population and to a rising participation rate among women. Growth due to changes in population should begin abating in the early 1980s.

^{26/}Computations are based on the author's unpublished projections. A detailed set of projections is available in Minnesota Employment Projections 1960-1980, published by the Minnesota Department of Employment Services, March 1974. The two sets of projections differ primarily in that the current author assumes a more rapid rate of employment growth through the current decade.

^{27/}Janice Hedges and Stephen E. Bemis, "Sex-Stereotyping: Its Decline in Skilled Trades," Monthly Labor Review (May 1974), pp. 14-21.

^{28/}Jane E. Laskey, "Womanpower: A New Force in the Mining Labor Pool," Engineering and Mining Journal, Vol. 176, No. 2 (February 1975), pp. 63-67.

^{29/}Johnston, op. cit., p. 11.

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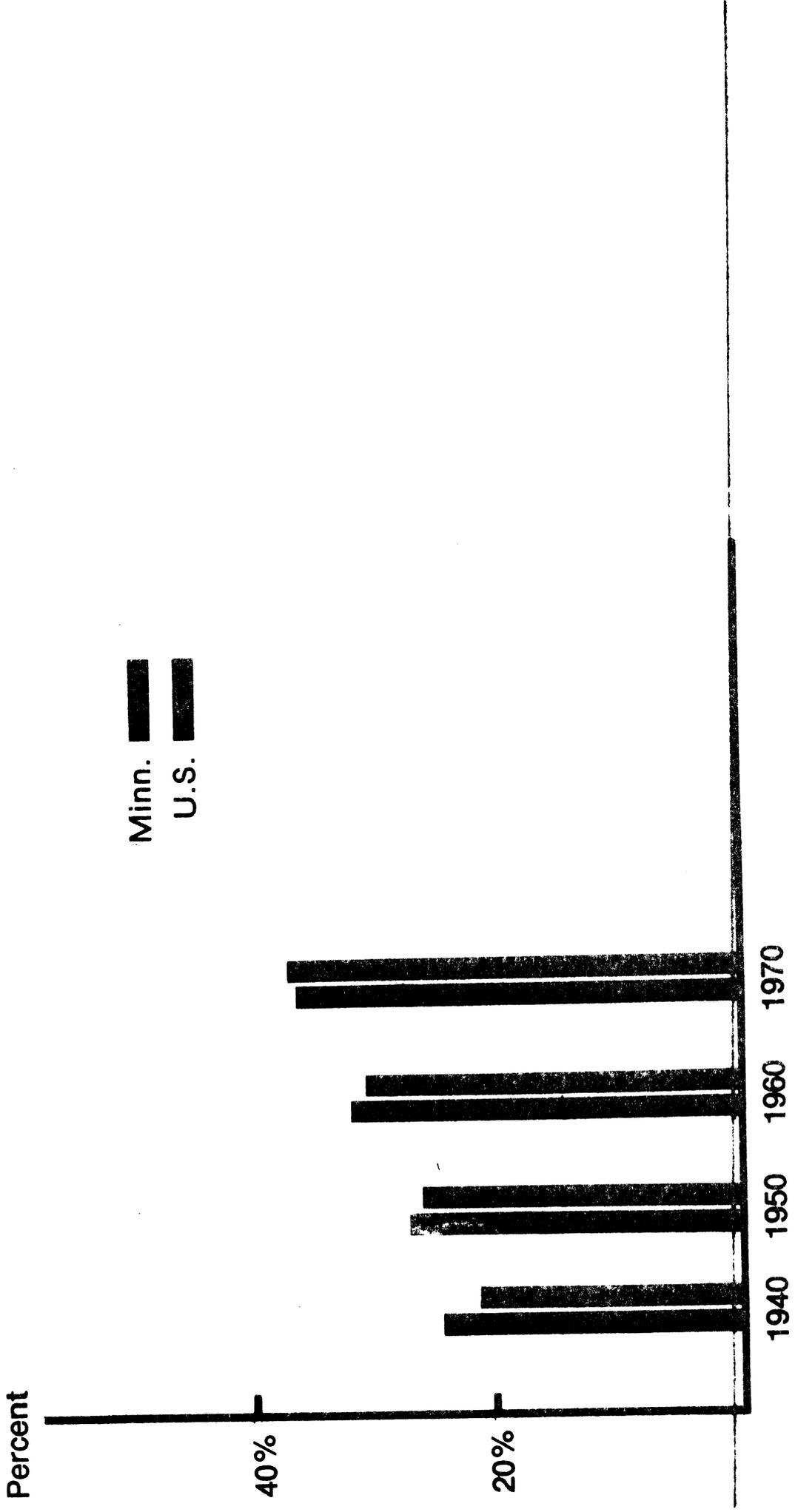
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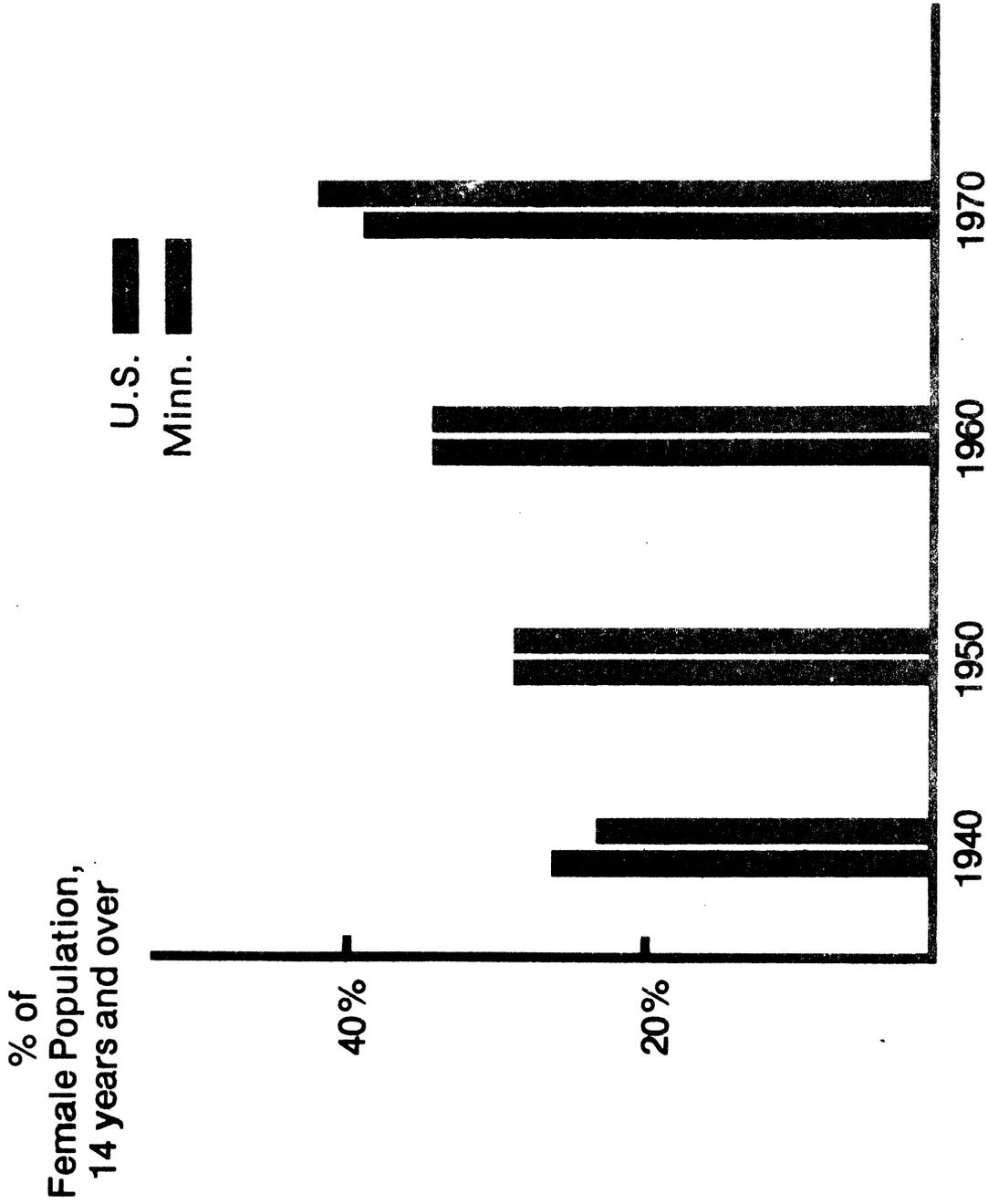
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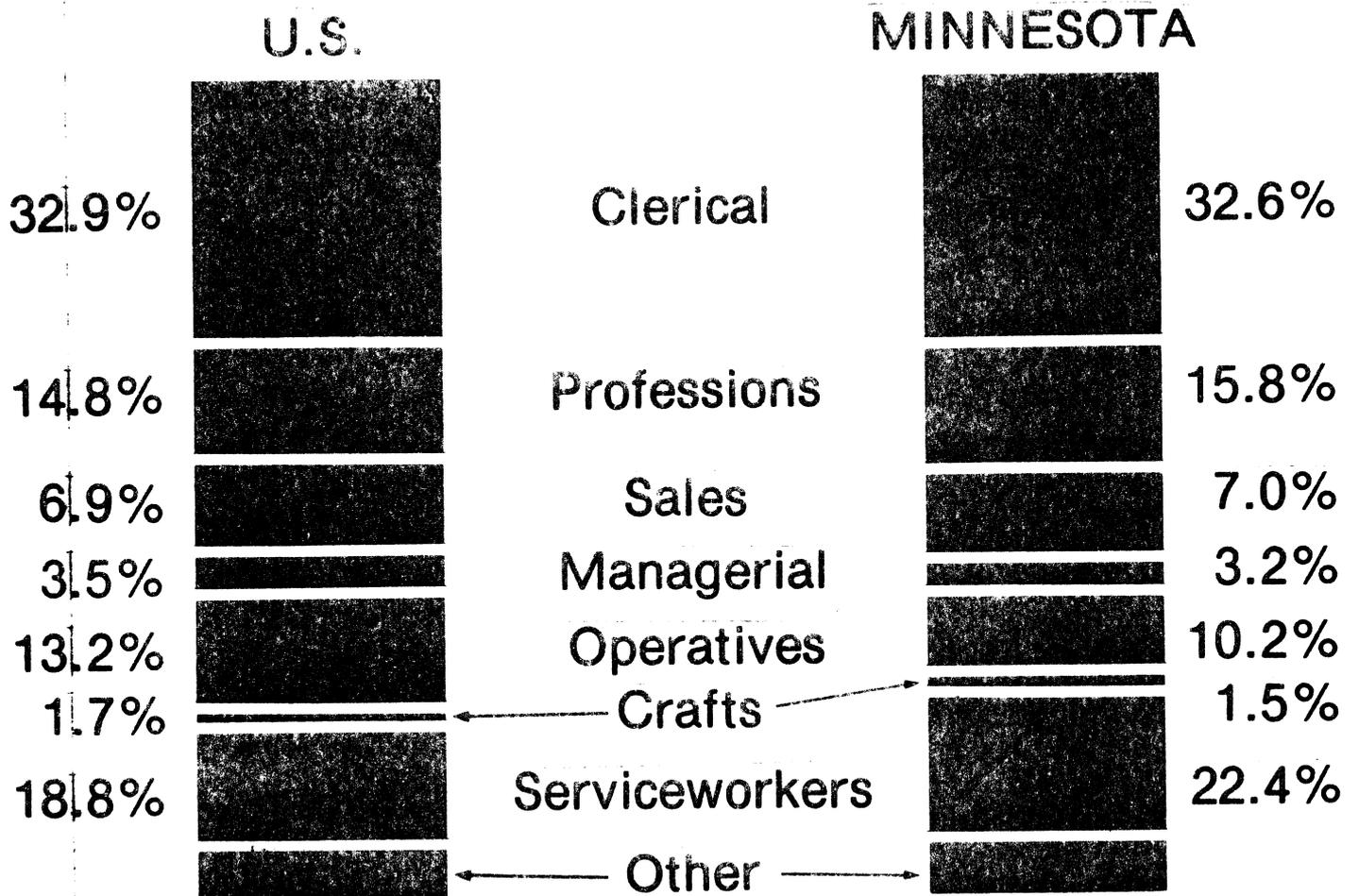
WOMEN'S SHARE OF TOTAL EMPLOYMENT



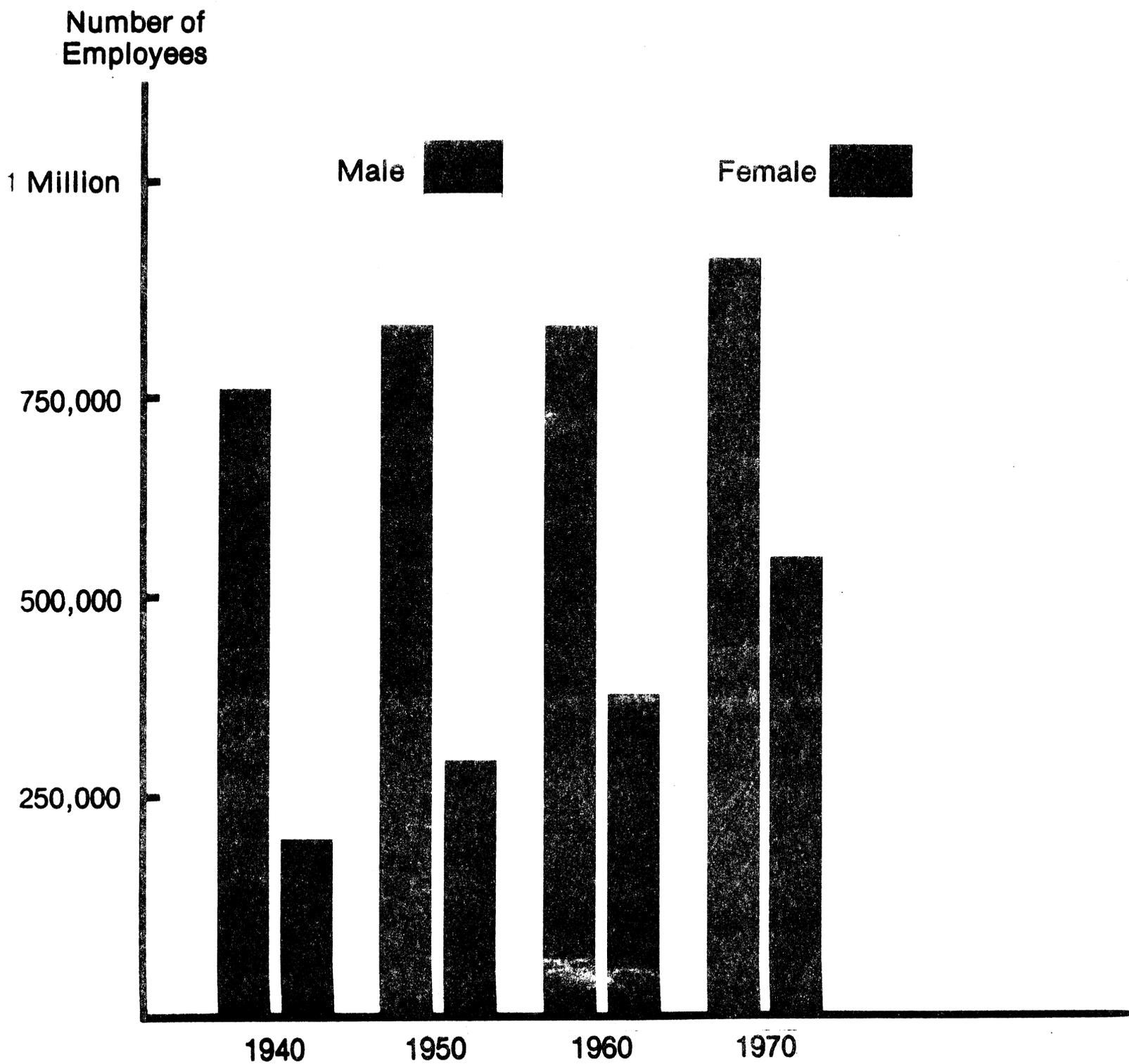
FEMALE PARTICIPATION IN THE LABOR FORCE



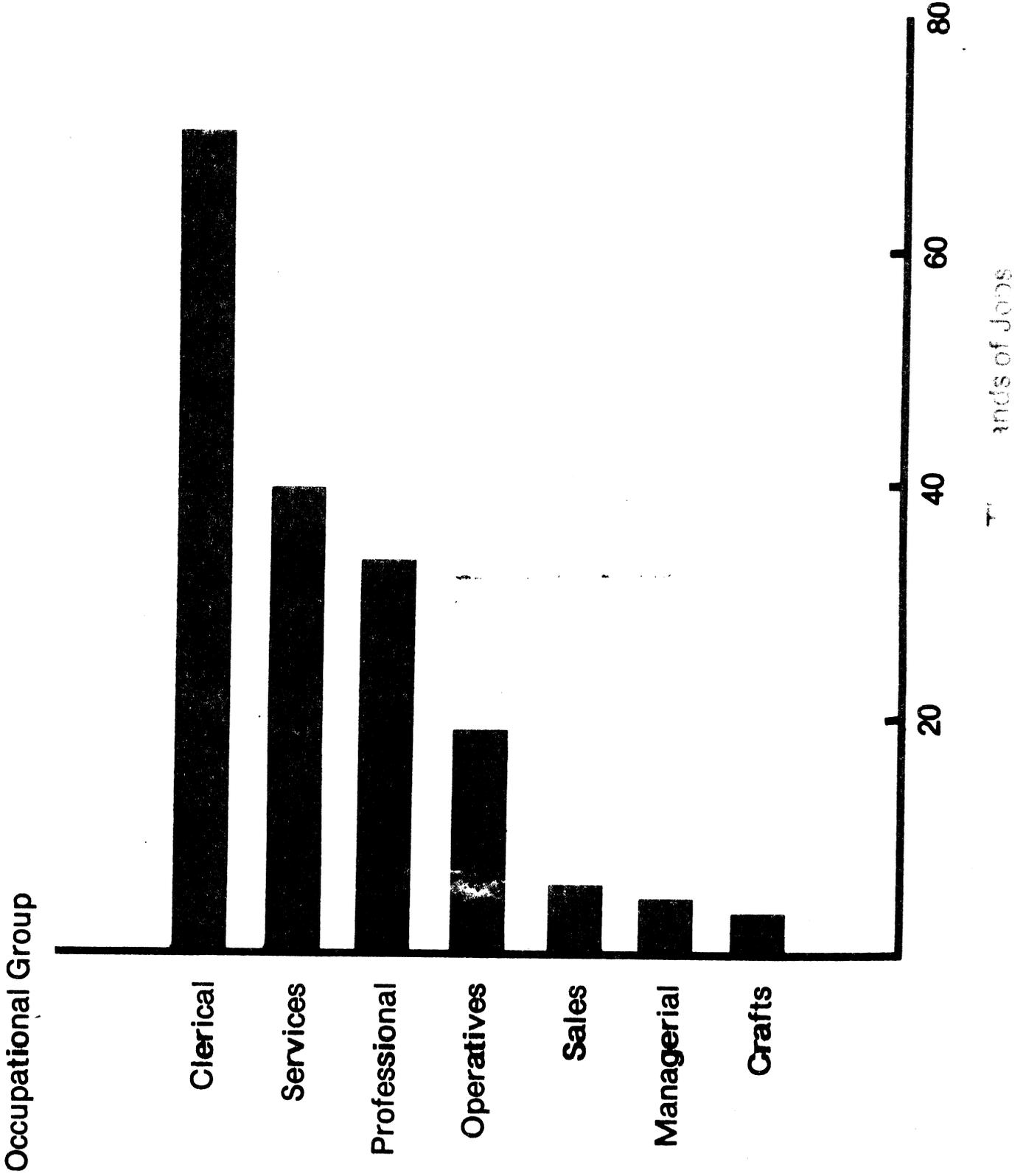
DISTRIBUTION, BY OCCUPATION, OF THE FEMALE WORK FORCE, 1970



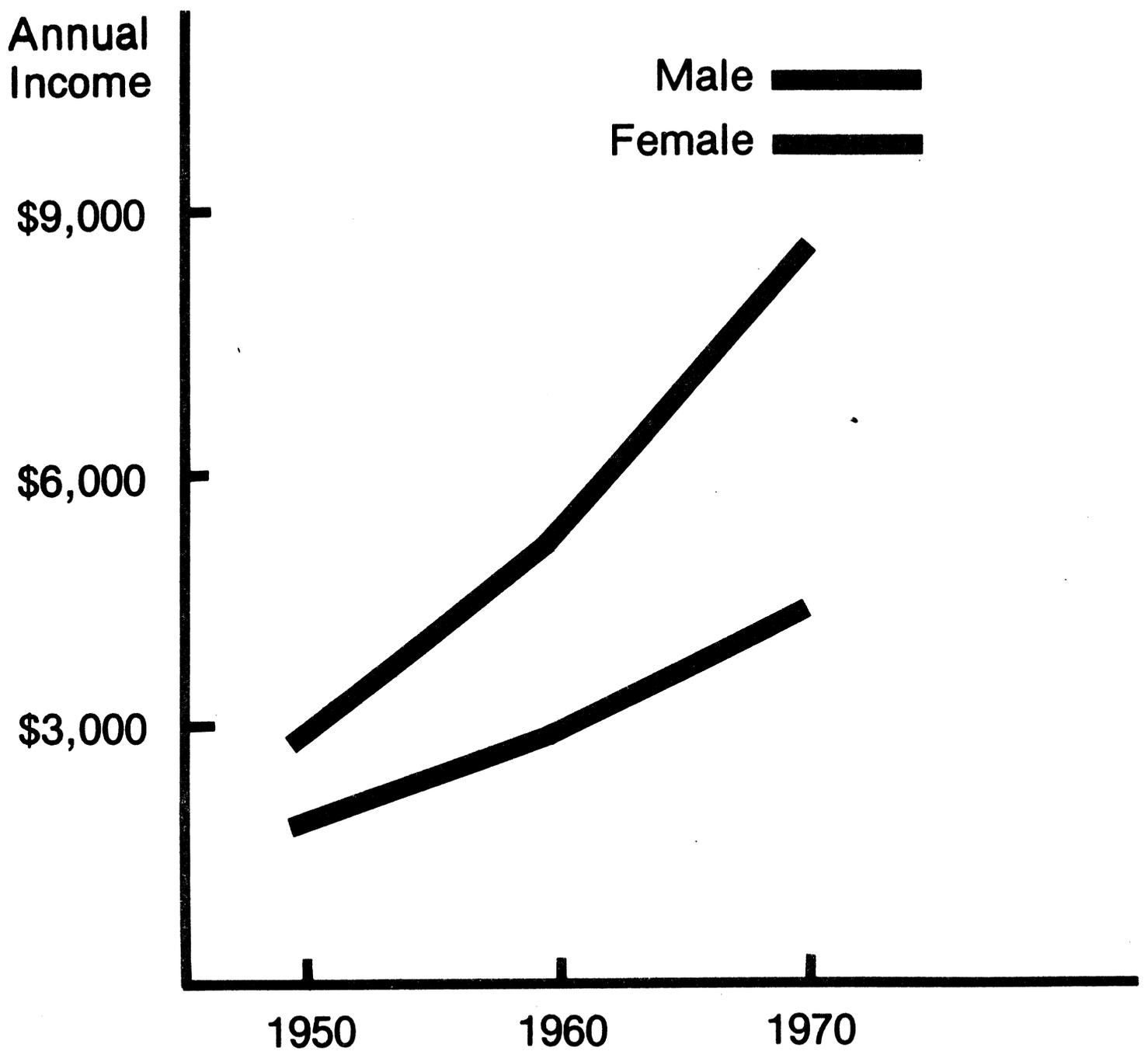
EMPLOYMENT IN MINNESOTA, 1940-1970



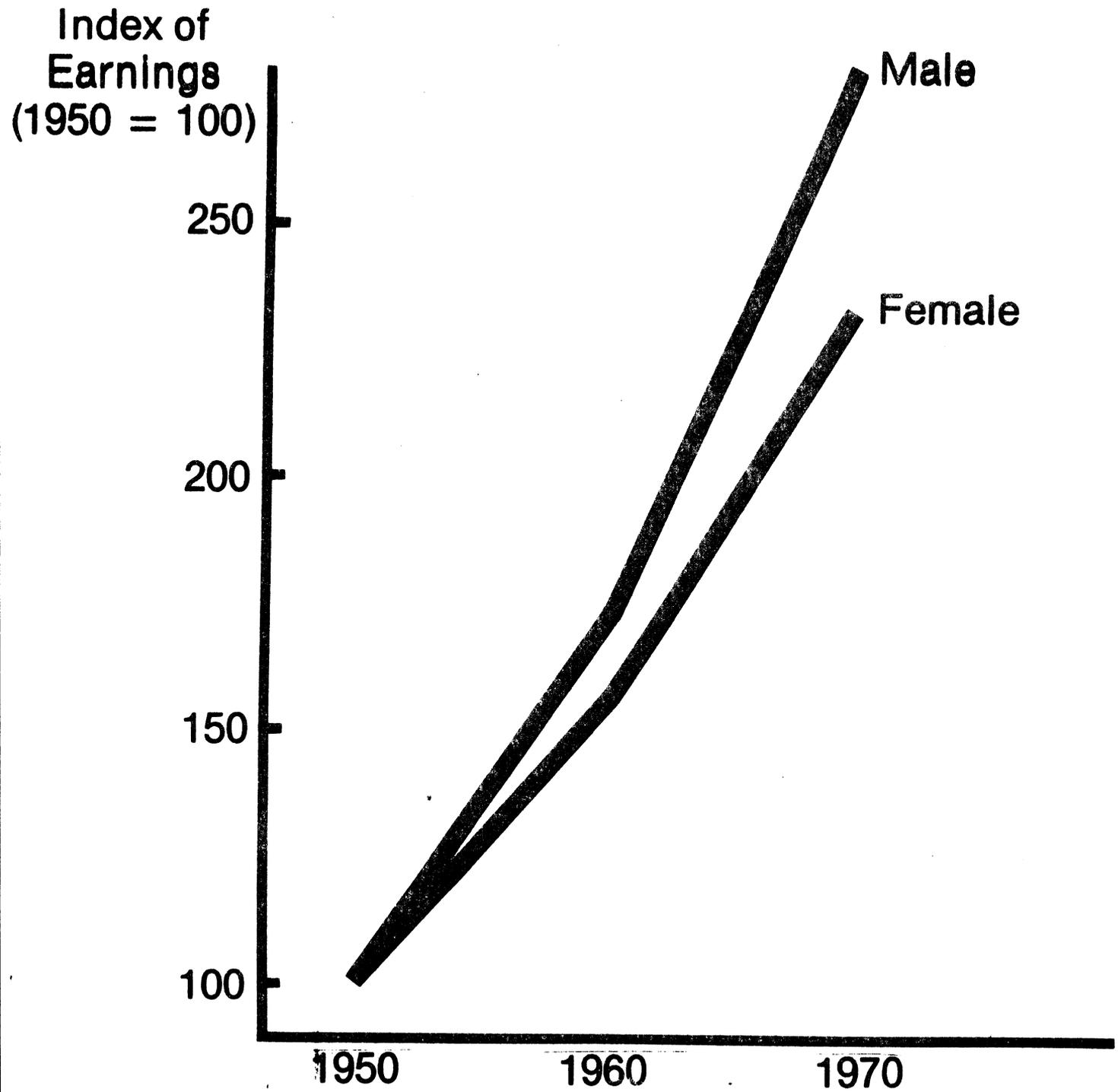
FEMALE EMPLOYMENT GAINS IN THE 1960'S IN MINNESOTA



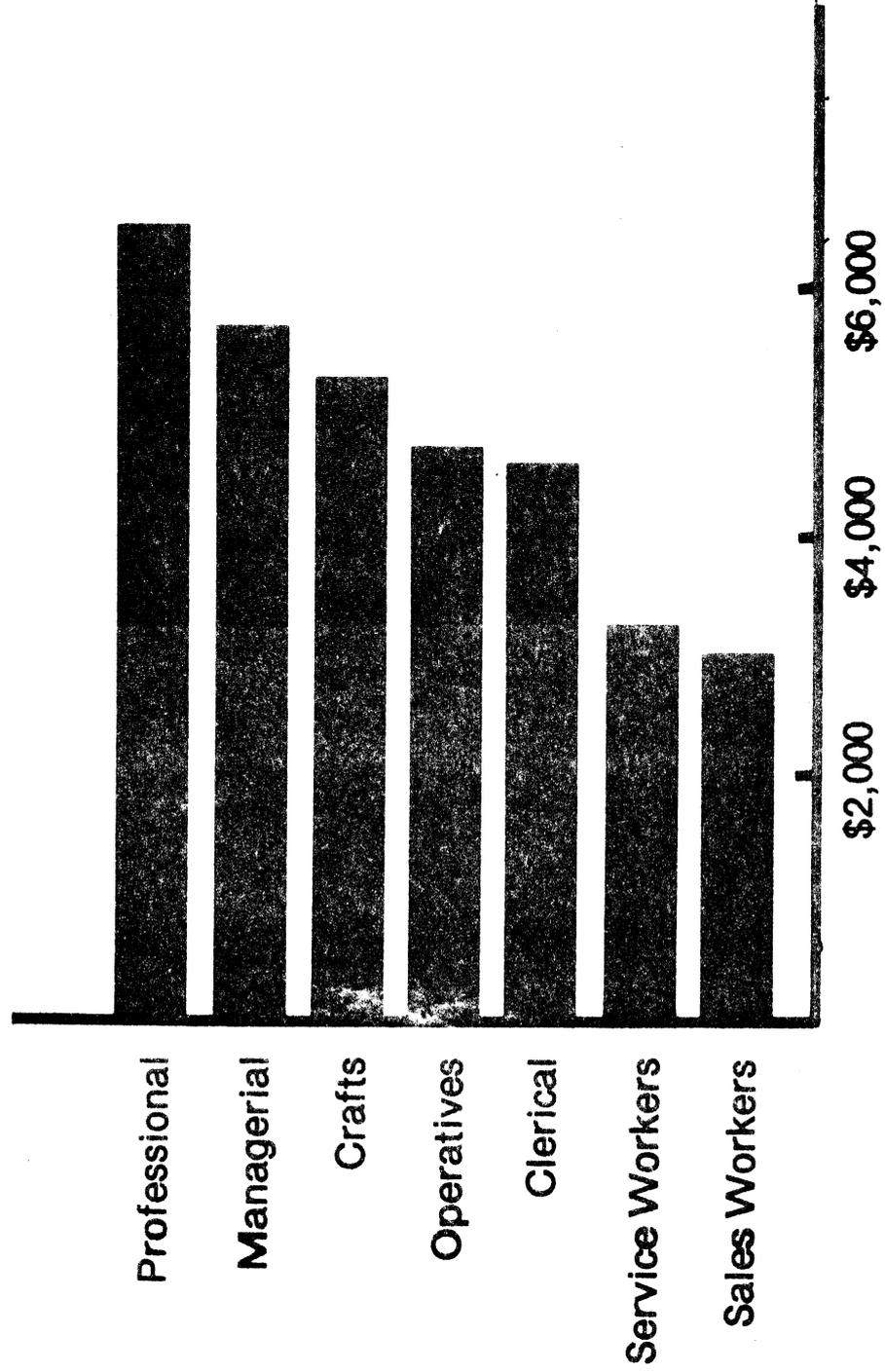
MEDIAN EARNINGS OF MALE AND FEMALE WORKERS IN MINNESOTA



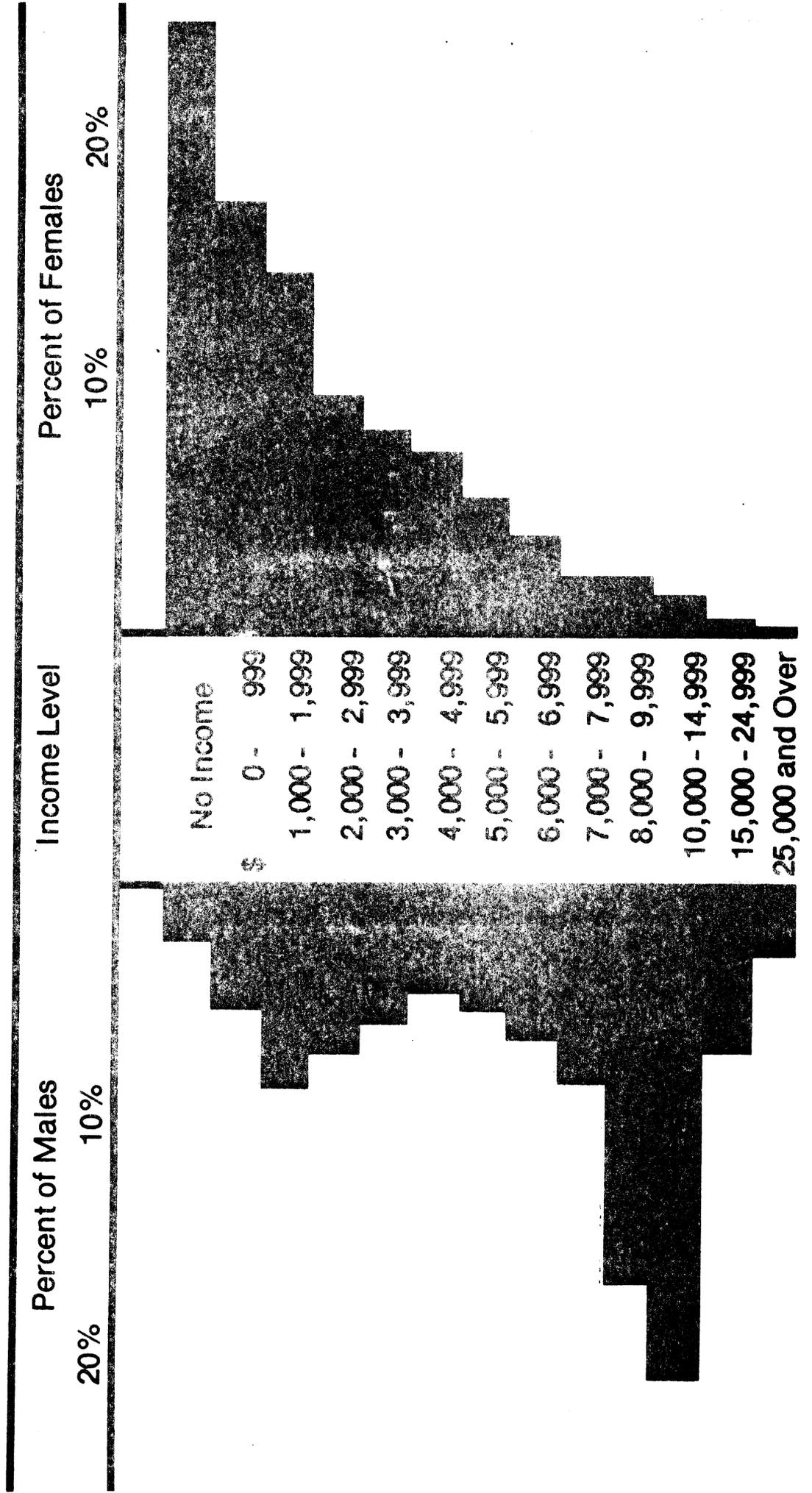
MALE AND FEMALE EARNINGS RELATIVE TO 1950



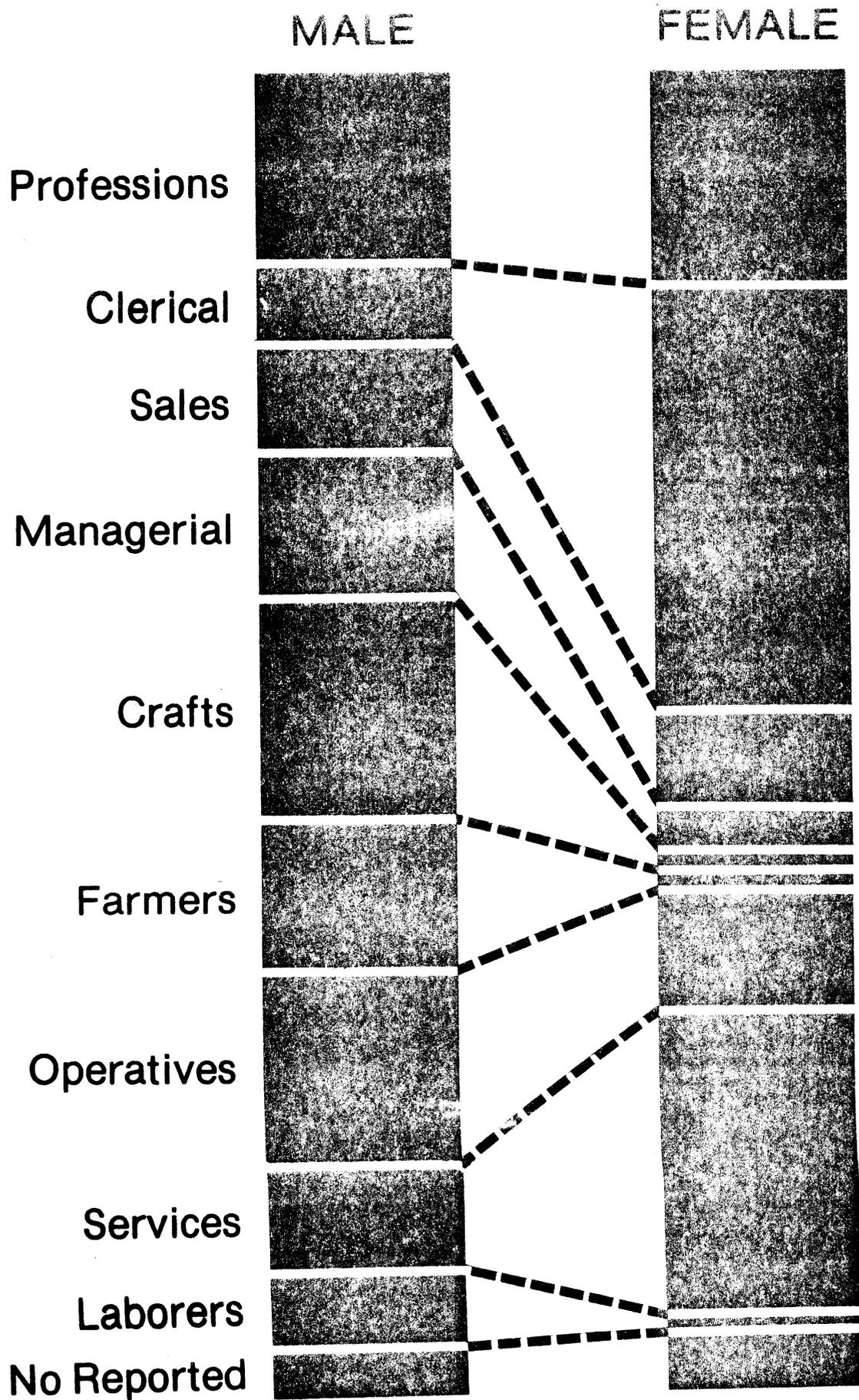
**MEDIAN EARNINGS OF FEMALE WORKERS
IN SELECTED OCCUPATIONS**



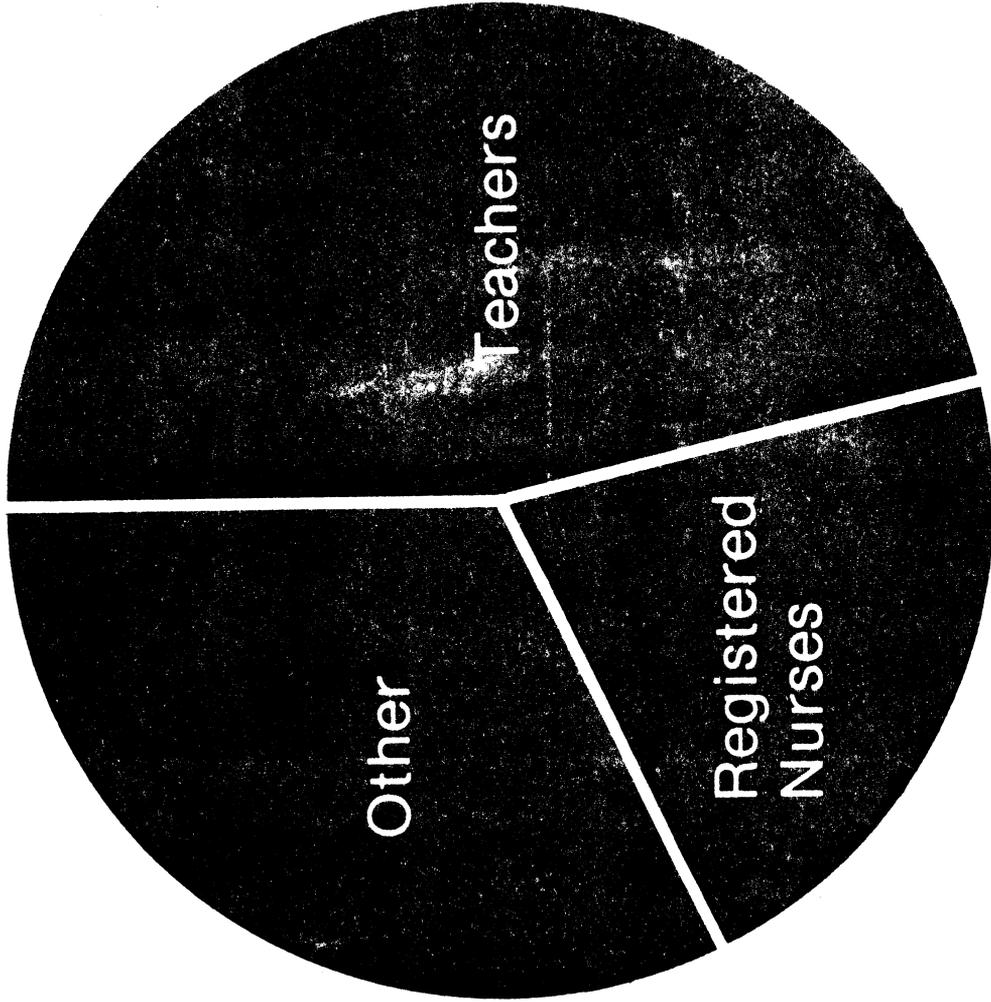
**DISTRIBUTION OF MEN AND WOMEN
BY INCOME LEVELS, MINNESOTA, 1970
[AGE 18 AND OVER]**



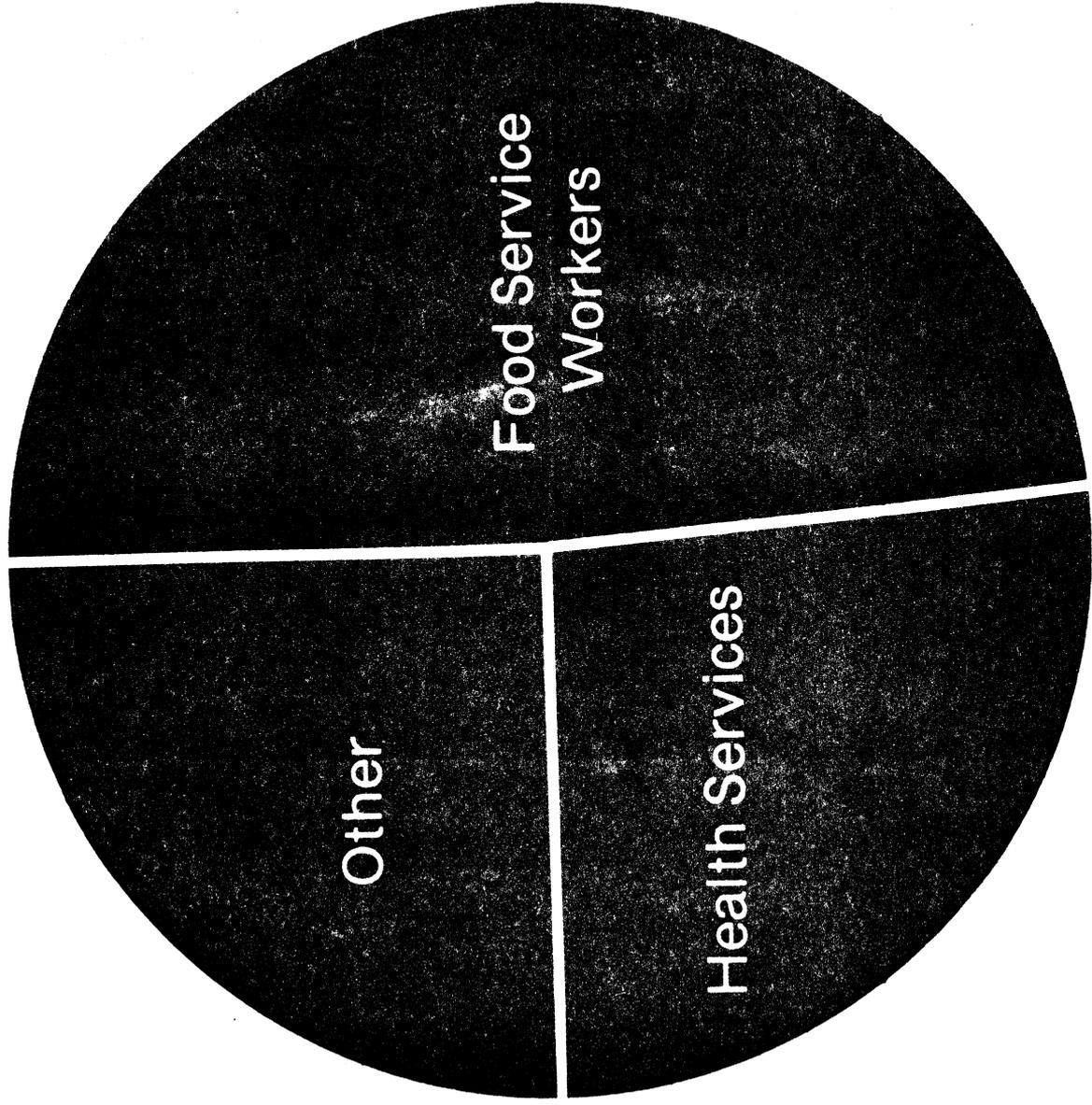
MINNESOTA DISTRIBUTION OF OCCUPATIONS, 1970



**FEMALE EMPLOYMENT SHARES,
BY PROFESSION, MINNESOTA, 1970**



**FEMALE EMPLOYMENT SHARES IN
THE SERVICES OCCUPATIONS, MINNESOTA, 1970**



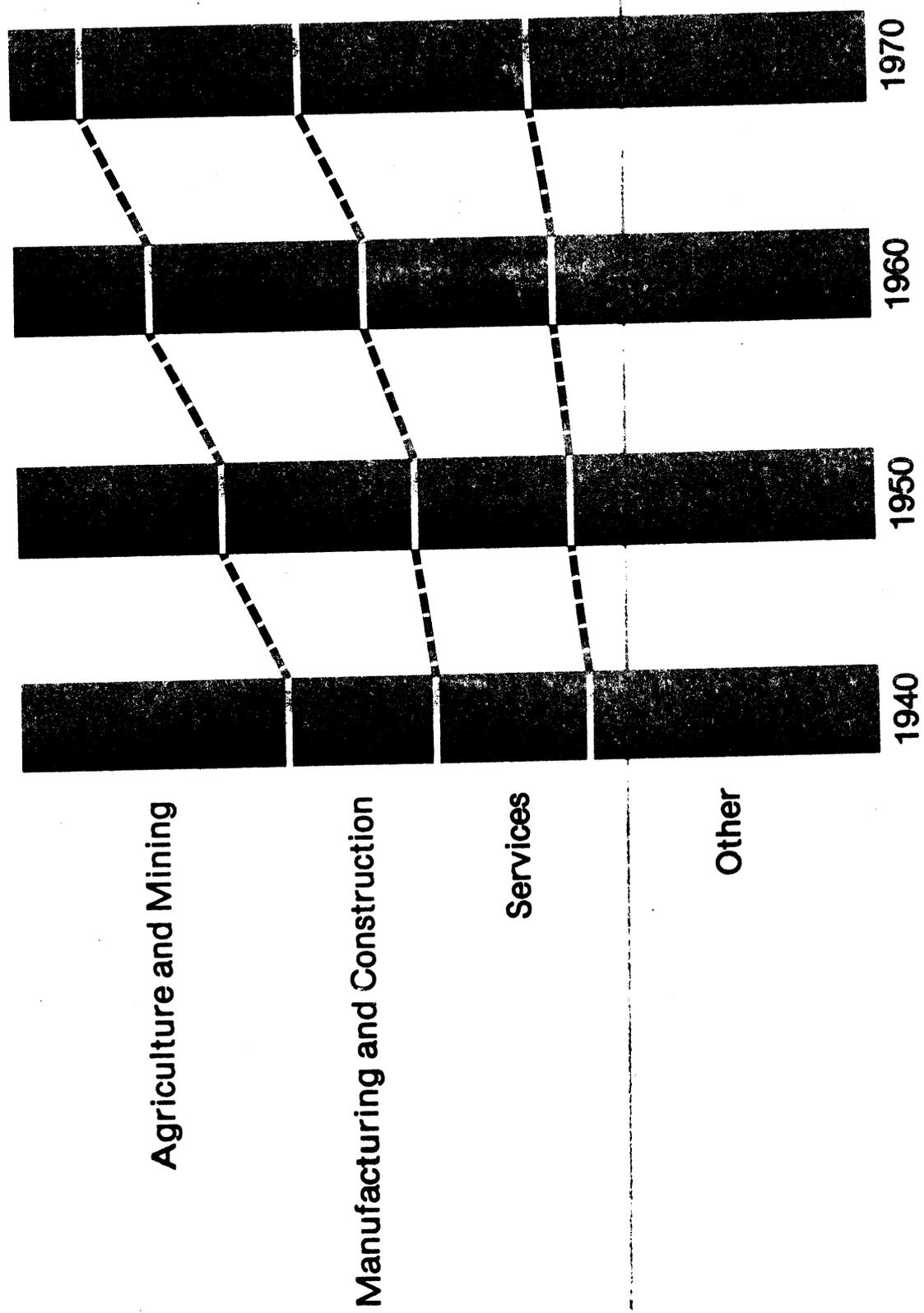
**WOMEN'S SHARE OF EMPLOYMENT
IN SELECTED PROFESSIONS,
MINNESOTA, 1970**

Accounting	27.2%
Architects	3.2%
Engineers	0.8%
Lawyers and Judges	4.0%
Physicians, Dentists, and Other Practitioners	6.4%
Engineering and Science Technicians	9.8%

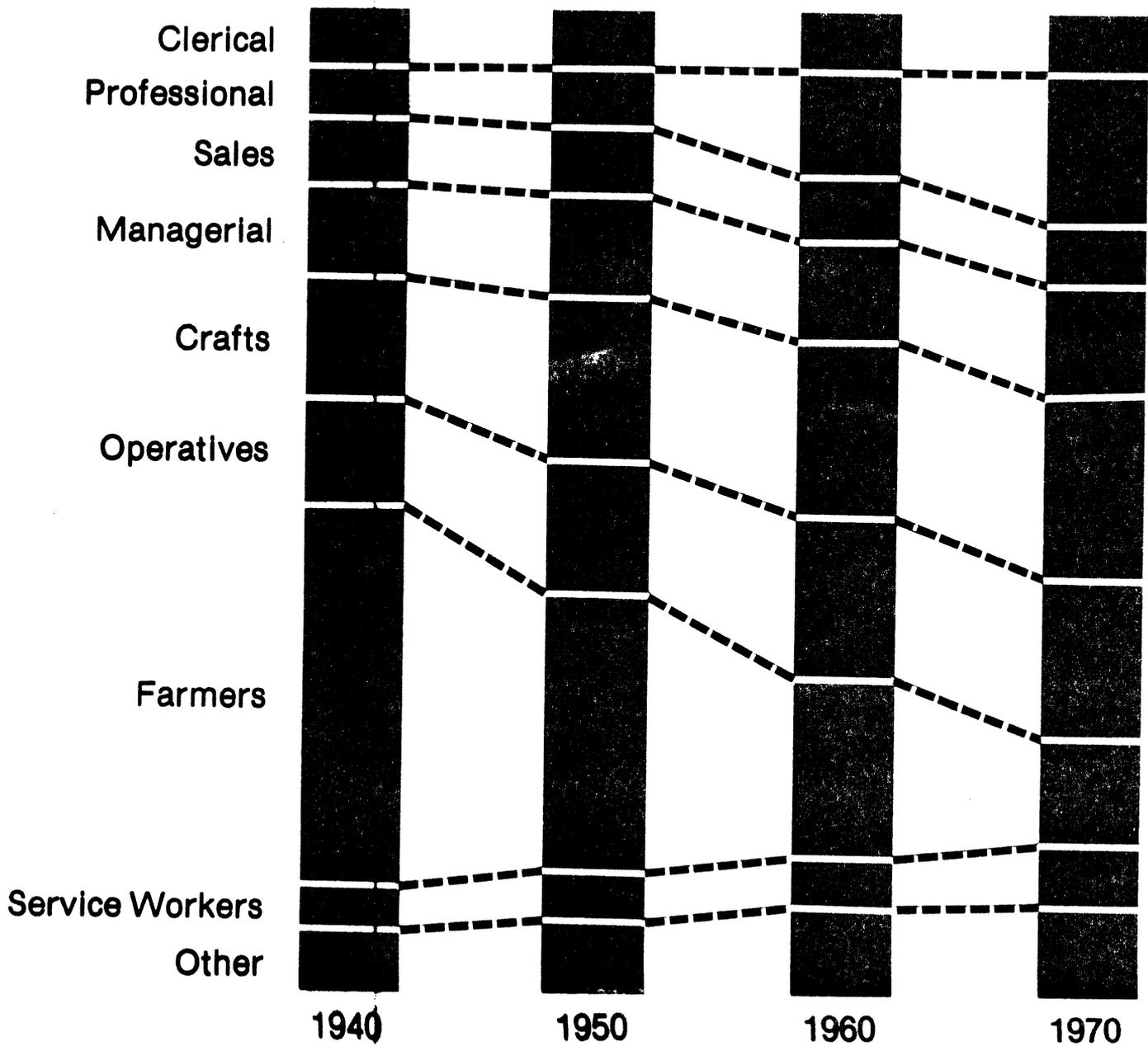
**WOMEN'S SHARE OF EMPLOYMENT
IN SELECTED CRAFTS, MINNESOTA, 1970**

All Crafts	4.7%
Carpenters	0.9%
Electricians	1.1%
Supervisors	6.5%
Machinists	3.8%
Repair Workers	1.6%
Painters	4.6%
Plumbers	0.8%

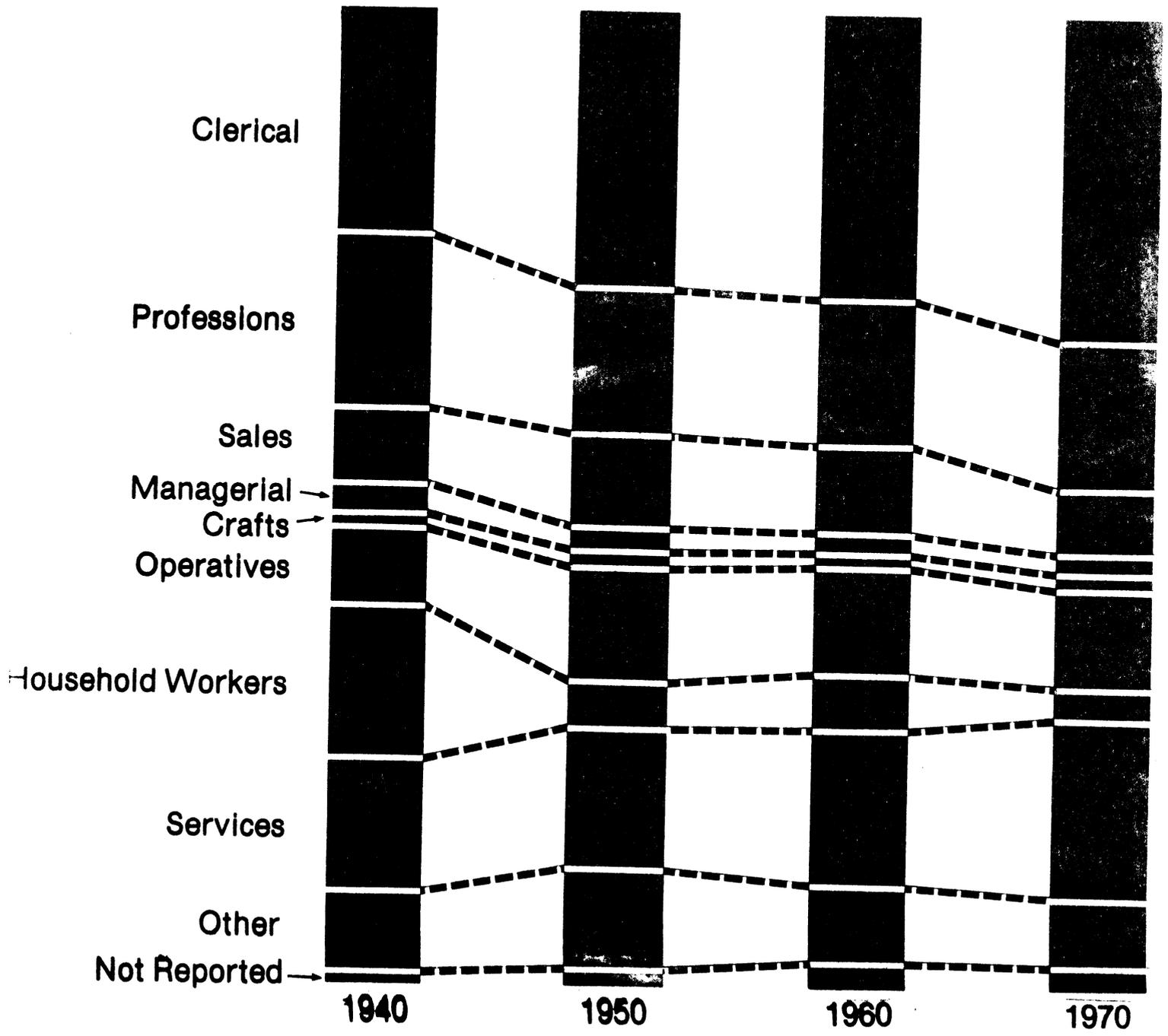
**EMPLOYMENT SHARES BY INDUSTRY,
MINNESOTA, 1940-1970**



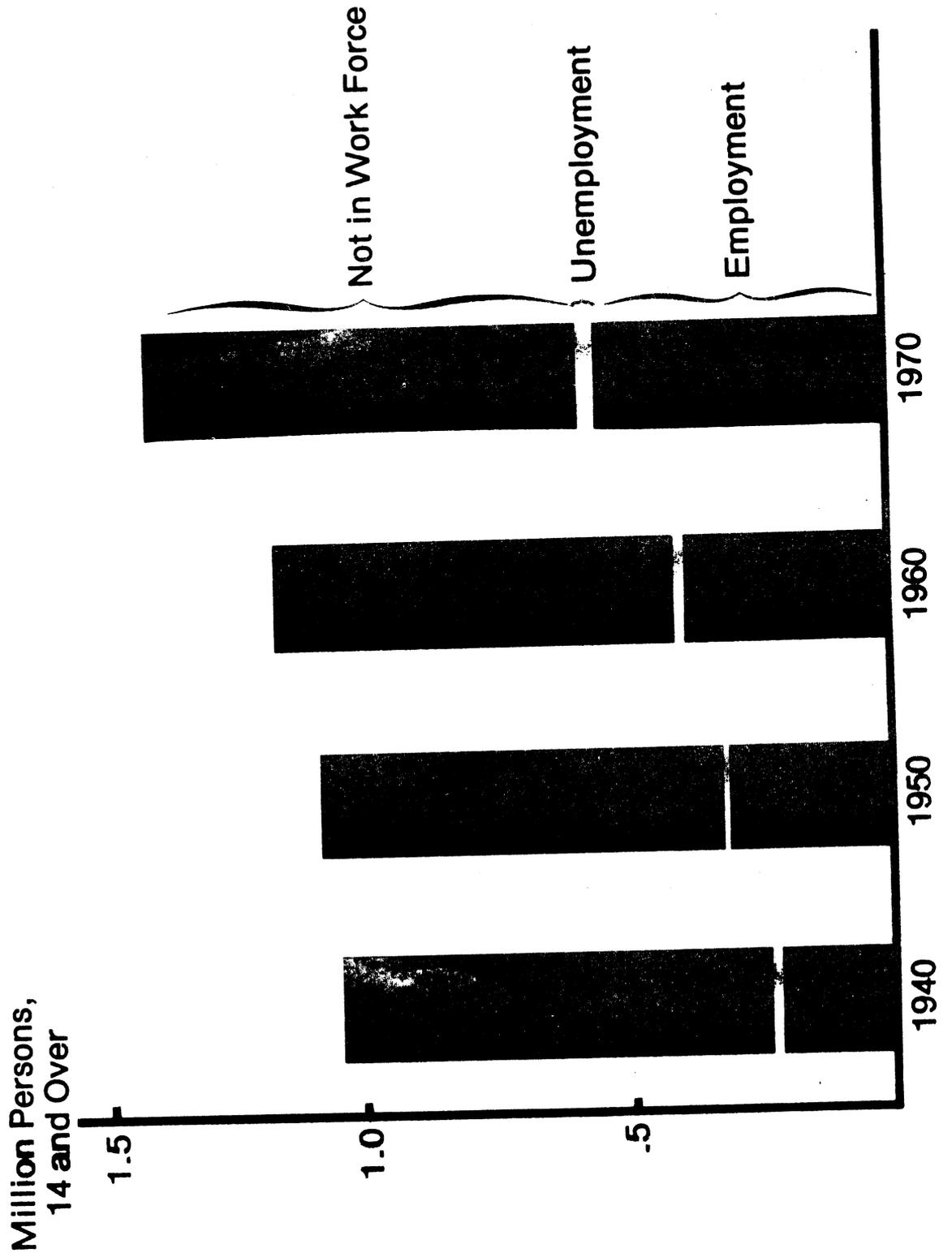
CHANGES IN MALE OCCUPATIONAL DISTRIBUTION IN MINNESOTA, 1940-1970



CHANGES IN FEMALE OCCUPATIONAL DISTRIBUTION IN MINNESOTA, 1940-1970



FEMALE POPULATION, EMPLOYMENT AND UNEMPLOYMENT IN MINNESOTA, 1940-1970



**OCCUPATIONS OF FEMALE WORKERS BY AGE GROUP
MINNESOTA, 1970**

