FEMALE LABOR FORCE PARTICIPATION: AN INTERNATIONAL PERSPECTIVE

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Women constitute half of any country's human endowment. In most countries, however, women contribute less than men toward the value of recorded production—both quantitatively, in labor force participation, and qualitatively, in educational achievement and skills. The underutilization of female labor has obvious implications for economic welfare and growth. Several factors, both economic and noneconomic, are responsible for this. In particular, the participation of women in the labor force appears to depend much more on the social environment than is the case for men. This dependency blurs the observed relationship between female behavior in the labor market and such economic variables as wages and incomes. This article looks at the conceptual and statistical limitations of the most widely used term of labor supply: the labor force participation rate. It then reviews some theories of women's involvement in paid production and examines the broad levels, patterns, and trends of female participation rates in different countries.

The Labor Force Participation Rate

The labor force participation rate is, as the name suggests, the ratio of two numbers. The numerator refers to the individuals who are economically active—the labor force. This number includes those who are employed and those who are unemployed but seek work. The denominator consists of those who can work—those already in the labor force plus the "inactive" population. The inactive popula-

tion excludes such "unemployable" persons as children, inmates of institutions, the disabled, and the elderly.

Although easy to define, estimates of labor force participation rates are controversial. In practice, the term "labor force" refers to those engaged directly in paid employment. Thus important segments of the population contributing to the country's production are excluded—such as those engaged in unpaid family work or domestic activities. The problem becomes more important for women whose activities fall by and large within these two categories. Although these activities are mostly economic, they are usually excluded from the analysis either because they escape statistical collections or because of cultural reluctance to admit them (El Shafei 1960, on the Middle East countries). In addition, national definitions about unpaid family work differ, and these differences make cross-country comparisons difficult. For example, in a developing country (Sri Lanka), all female unpaid family workers are deemed to be economically active (Central Bank of Ceylon 1974), whereas in an industrial country (Britain), such workers are at times included and at times excluded (Bowers 1975).

Two further complications aggravate the problem. First, work is a flow variable and has to be defined against a period of time. Here, one has in mind moonlighting, casual, and seasonal work which, though important, especially for women, often escape statistical enumeration. Second, it is difficult to establish which unemployed people are seeking work and which are not. The practice of checking unemployment benefit rolls is an unsatisfactory solution. Some countries do not have such benefits, and some exclude women from them.

There are similar shortcomings in the definition of the "potentially employable" population—the denominator of the labor force participation rate. For example, at what age does a person become employable? The convention is to use the minimum school-leaving age. In some countries, however, this requirement does not exist; in others, it is not rigorously enforced, especially among girls. In the past there has been practically no limit on child labor (Hobsbawm 1964, Mathias 1969), something also true in many developing countries today. At the other end of the age spectrum, some countries' life expectancy exceeds eighty years, while in others it is hardly more than forty-five years. In addition, unemployability may also be prevalent during a worker's prime years. For example, in some developing countries with shortages of food and medical services, up to 40 percent of working days a year are lost owing to acute illness or medical conditions (Correa 1963). In addition, childbearing implies that estimates of female participation rates are more

affected by these considerations than are those of male participation rates.

In conclusion, definitional and measurement problems of the labor force participation rate are particularly pertinent for women.

Interpretation

The obvious interpretation of labor force participation is the percentage of the population that works or is willing to work. This is appropriate for studies concerned with the utilization of labor in the economy (Rees 1957). So, if a country's female labor force participation rate is 50 percent, half the female population is working, the other half not. But this does not mean that half the individuals are always in the labor force and the rest never. It probably means that the same individuals are sometimes in and sometimes out of the labor force (Mincer 1962). This gives rise to an alternative interpretation of the labor force participation rate—that of probability. In this example, each person has a 50 percent chance of being in the labor force at one point in time.

The interpretation of the labor force participation rate as a strict quantitative measure has been questioned. Heckman and Willis (1977) found that not being in the labor force at one point in time is highly correlated with not being in the labor force at any point in time; hence, the labor force participation rate can also be appropriate as a proxy for permanent labor force participation. The qualitative aspect is also present when one refers to different countries. A low value in the participation rate may simply indicate the absence of formal markets rather than the absence of individuals who are willing to work. Obviously, agricultural economies based on family production (that is, where there is little wage employment) do not have a labor supply (participation rates) that would count in the official statistics.

Despite these shortcomings in both measurement and interpretation, economists use labor force participation rates extensively in analyzing labor markets, if only because these rates indicate, though within broad margins, the most quantifiable aspect of labor force supply—the proportion of people in the labor force.

Theory

Economists have tried to explain the labor force participation rate by age, sex, race, and income groups and to describe trends over time. According to the neoclassical school, individuals or household members enter the labor market because they want more income,

and they work as long as they think that the benefits from work exceed those from household activities. Time is split between work on the one hand and everything else lumped together on the other hand (called, for brevity, leisure). Hence the name of the theory: the income-leisure model.

The income-leisure model examines labor supply in relation to wages and incomes. It ignores noneconomic considerations that come into the analysis as "preferences" and that are assumed to be determined exogenously (to the model). Thus the decision to work—and, if so, for how long—depends on the remuneration from work (wage rate), other (nonlabor) income, and tastes. The higher the wage rate, the more attractive work becomes. This has two effects. First, for those not already working, a higher wage may induce them to join the labor force; thus higher wages unambiguously induce higher participation. Second, for those already working, a higher wage makes work more attractive than leisure, but it also makes additional work less desirable, since the same level of income can be achieved with less work. Therefore the effect of higher wages on the duration of work (and, indirectly, on participation rates) is ambiguous and differs from case to case according to preferences (that is, the value placed on more work relative to higher earnings). However, the other economic variable in the model—nonlabor income—always exerts a negative effect on labor supply. The higher it is, the less pressure there is to work. The same considerations apply to women either as individuals or as members of households. Empirical evidence, however, lends support to a positive wage effect on women's participation; all things being equal, more women are drawn into the labor market as wages increase (for country surveys see Layard and Mincer 1985; for theoretical issues see Cigno 1989).

The income-leisure model provides explanations of labor force participation at one point in time. With respect to time trends, it is necessary to look at the movement of aggregate labor supply and demand (Long 1958). It is difficult to disentangle the two, as both supply and demand determine the equilibrium levels of wages and employment, and both change during the process of development. A typical scenario can be illustrated as follows. A subsistence economy is centered around agriculture, is home based, and makes heavy use of female labor. During the early stages of industrialization, agriculture loses its significance as the main employer of women. The expansion of industry is usually slower than the contraction of agriculture. These opposite, but not necessarily offsetting, movements usually result in an initial reduction of female employment. When the service and government sectors expand, women are pulled back into the labor force. Later, the economy may face labor shortages that lead to higher availability of part-time jobs and higher

wages for women. These conditions give rise to a U-shaped pattern of female employment in the process of development, as shown below.

The Evidence

Because most men are permanently in the labor force, estimates of labor reserves and projections of labor supply have focused on women. Standing (1981) notes that "any generalization about female labor force participation is liable to be misleading since level, patterns and trends vary widely between and within countries." A way out of this difficulty is to try to go beyond a blanket economic approach by identifying groups of countries that share some common social characteristics. In addition to the standard economic variables, such as education, experience, wages, and incomes, empirical studies have indicated that many noneconomic variables influence female labor supply functions. These include marital status and fertility, urbanization, landownership and farm size, head of household's status, and employment structure.

In the following sections we examine the behavior of female participation rates by some key characteristics. These include income, demographics, religion, and education.

Income

The worldwide aggregate participation rate hides more information than it reveals. During the past twenty years, the global female participation rate has remained almost constant (table 1). Yet even a crude disaggregation of countries into two groups—industrial and developing—reveals that this almost constant rate has been a result of two offsetting movements; the percentage of working women in industrial countries increased 10 percent, while the corresponding statistic for developing countries decreased 7 percent.

Figure 1 provides a better insight into the relation between female participation and development (based on Sivard 1985). The vertical

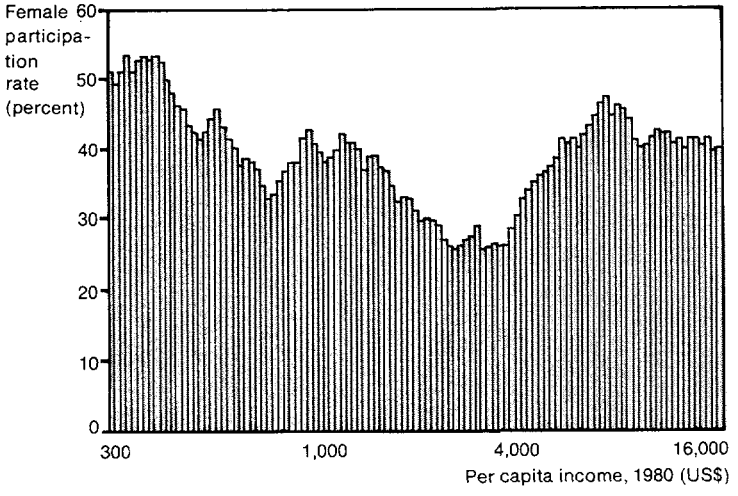
Table 1. ***Female Labor Force Participation Rate, 1960 and 1980***

Country group	*Participation rate (percent)*		*Percentage change*
	1960	*1980*	
World	47	46	−2
Industrial	52	57	10
Developing	45	42	−7

Source: Sivard 1985, table II.

axis measures the level of the participation rate in 136 countries using a twenty-country moving average. The horizontal axis proxies economic development by the countries' per capita gross domestic product. The data support a U-shaped relation between the level of development and female participation in the labor force.

Figure 1



The U pattern can be based on a number of considerations. During the early stages of industrialization, countries experience a decline in the subsistence sector, a prime employer of women. This decline is usually faster than the expansion of the industrial sector. Both factors are usually associated with an increase in urbanization that further restricts opportunities for unpaid female family work. At the same time, incomes are rising and the pressure on women to work may become weaker. Development is also associated with higher educational enrollments that delay women's entry to the labor market. Later in the process of economic development, a number of factors work toward greater female participation. One is the greater significance of the industrial and service sectors, which generate opportunities for additional labor. When the economy moves toward full employment, labor reserves are called into duty by higher wages. Unused female labor is the prime beneficiary of this shortage. Many studies on female participation rates in the industrial countries have attributed the rise in the number of female workers over time to a dominant substitution effect away from work at home to work in the market due to higher wages (Mincer 1962, Killingsworth and Heckman 1986). At the same time, new opportunities for the employment of women, both in terms of higher demand and composition of employment, have been stressed (Oppenheimer 1970).

The appeal of the U-pattern hypothesis has been significant. In the 1960s and 1970s, the International Labour Office used this hypothesis to project the size of the labor force for the 1980s. A number of scholars have also used this hypothesis, some correctly (Weller 1968, Sinha 1967, Collver and Langlois 1962), and some erroneously (Richards 1974, for example, applied the hypothesis to the British case, a proposition that cannot be sustained; see Tzan-

natos 1982, Joshi, Layard, and Owen 1985). Not every country followed a U pattern, however. The scale and amplitude of the U varied between countries and periods of time. Of course, observed behavior is the outcome of many interrelated factors that may mask and even outweigh the economic effects of growth. Some factors that can affect the female labor force participation rate are examined in the following sections.

Age and Fertility

Because children and work make simultaneous demands, the more time a woman spends on one, the less time is available for the other. Consequently, women's participation during the age of bearing and rearing children should be lower than that of women outside this age. In fact, this has been the broad pattern of age-specific female participation rates in Western economies.

One would be wrong to generalize from these data and assume the same rate for other countries, however. First, even among the industrial countries there are some notable exceptions. For example, in Sweden and Finland the female participation rate is exceptionally high—comparable to that of men—and varies little across age groups. In both countries the highest female participation rates are in the 25–44 age group, and in both countries the marital cycle starts relatively late. This should not be taken to deny the burden that the family cycle places on women: the explanation should rather be sought in the fact that the Scandinavian countries have well-developed social legislation as well as provisions for paternal (not only maternal) leave.

The influence of state provisions is also present in nonmarket economies. In the Soviet Union, the German Democratic Republic, and Poland, female participation is exceptionally high, and there is no evidence that the participation rate for women of childbearing age is lower than that of women forty years old or more.

Table 2 summarizes the age-specific participation rates of women in low-, middle-, and high-income countries in the 1980s. The U-pattern hypothesis is still supported: in each age group, the female participation rate is lowest for the middle-income countries. One should, however, bear in mind that the participation rate in high-income countries appears artificially high because of the availability of part-time employment in these countries. This kind of work is almost exclusively performed by women (Sivard 1985, p. 15). In contrast, the participation rate in low-income countries must be understated for statistical reasons, given the prevalence of unrecorded economic activities that are performed, by and large, by women.

In addition, theoretical considerations point toward an ambiguous relation between fertility and participation. First is the simultaneity of fertility and work. For example, more children mean more work by women either directly (more farming to feed the children) or indirectly (more paid work to support them). Second, in poorer developing countries, the specialization of activities does not permit a sharp distinction between work, leisure, and consumption. Fertility and consumption are intermingled with production, broadly defined to include reproduction (children can be thought of as investment goods). Finally, a single child requires a considerable amount of parental care. However, a second child, born a few years after the first, reduces the demand for care because the older child can look after the younger one and may even perform some household tasks.

Religion

The foregoing analysis rests on economic aspects of female labor supply, but noneconomic considerations may also be important. One such consideration is religion. Countries with the lowest participation rates are those with strong religious views about women in society, in general, and in the economy, in particular.

Table 3 shows the level of female participation by the country's major religion. Muslim and Roman Catholic countries have the lowest female labor force participation rates. An earlier comparative study by the authors of this article (Psacharopoulos and Tzannatos 1987) found that a regression of the female participation rate on religion explains more than a third of the difference in the female participation rates in ninety countries. The regression coefficients on the Muslim, Hindu, and Catholic religions were negative and highly significant. They implied that religion reduced the female labor force participation rate by more than half in Muslim countries, by 40 percent in Hindu countries, and by 30 percent in Catholic countries. Grouping countries by income and region, which can identify religion to some extent, produces a clearer picture of

Figure 2

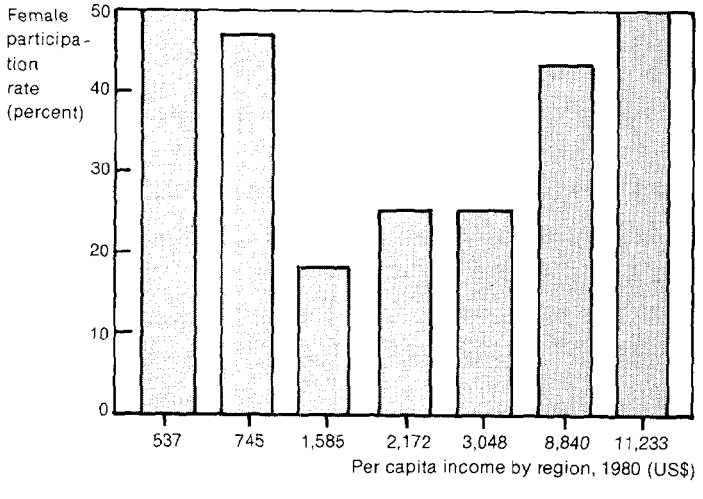


Table 2. *Female Labor Force Participation Rate by Age and per Capita Income*

(percent)

Country group	*Age group*									
	15–19	*20–24*	*25–29*	*30–34*	*35–39*	*40–44*	*45–49*	*50–54*	*55–59*	*60–64*
Low income	40	48	50	50	51	50	49	47	44	38
Middle income	24	42	42	41	40	38	36	33	27	21
High income	39	70	65	61	63	64	60	55	41	24

Source: Psacharopoulos and Tzannatos 1987, table A-1.

how female labor force participation varies with economic development (see figure 2). (The regions shown, in ascending order of per capita income in 1980 U.S. dollars, are Sub-Saharan Africa, Asia, other Africa, Latin America, the Middle East, Western Europe, and North America.) The question remains, however, which of the two variables (income or religion) is more dominant? One can say little more in the absence of a clear understanding of the relations between values and economic development.

Education

The effect of education on women's participation in the labor force is ambiguous. Do women decide to work before or after they decide to acquire education? The answer may be that they decide somewhere in between. Education and participation in the work force both depend on and affect a country's economic and general development. The higher the participation rate and the educational level of workers, the higher is the country's potential total product.

Table 3. *Female Labor Force Participation Rate and Religion*

(percent)

Country's dominant religion	*Mean female participation*
Islam	23
Roman Catholicism	33
Hinduism	42
Buddhism	48
Confucianism	48
Christianity	49
No major religion	58

Note: A country is classified under a given religion if 30 percent or more of the population follows that religion.

Source: Based on Psacharopoulos and Tzannatos 1987, table A-2.

Education and participation affect (and are affected by) urbanization and other demographic variables, as well as cultural and sociopolitical factors. The issue is of immense complexity. Nevertheless, let us assume that the causation runs from education to participation and that feedbacks occur later to accommodate events which could not be (or were not) foreseen earlier. Next, distinguish between the decision to participate in the labor market and the decision of how many years will be spent working in the course of a lifetime. Both decisions affect the labor force participation rate. The latter can be thought of as the product of the probability of being in the labor force (the "how many" aspect of labor supply) times the average length of participation (the "how much" aspect). The net effect of education on the female participation rate depends on how education affects these two decisions.

With respect to the decision to participate in the labor market, education has a positive effect. If education has been undertaken as an investment, a woman has to work to recoup the cost of that investment in human capital. Even if education was undertaken as a kind of consumption, a woman will be more tempted than before to enter the labor market because, owing to her higher earning potential, the opportunity cost of not working (forgone earnings) has increased. Consequently, education exercises a positive effect on the decision to work.

With respect to "how much," the effect of education on how long a woman works depends on the relative strength of two forces working in opposite directions. On the one hand, education has a positive effect on the duration of participation because education raises earnings potential and increases the cost of not working. On the other hand, the higher remuneration for educated labor allows her to achieve her income target sooner; consequently, she may allocate part of the higher income to consume leisure, which means less work. Thus, the net effect of education will depend on which force dominates. Since empirical studies have shown that female labor supply is more responsive to wage considerations (substitution effect) than to income, educated females may have a higher involvement in the labor market than less educated or uneducated women.

Human behavior can very rarely be attributed to pure economic considerations. The patterns of female labor force participation are the complex outcome of a variety of economic and noneconomic factors. For example, marriages tend to involve people from the same or similar background. Hence, an educated woman may work less than an uneducated one since she benefits more from her husband's endowments. Although it may be considered a sexist question, one may ask: do women become educated to get a better job or a better husband? Although this appears to be a degrading com-

ment, in some countries educated women go into seclusion when they finish their education (Boserup 1970). Not so long ago in industrial countries, working-class (that is, mostly uneducated) women worked extensively, whereas their educated counterparts conspicuously abstained from the labor market.

Table 4 summarizes the findings of various studies on the effects of education on female labor force participation. Despite the fact that the decision to work is dependent on a large number of factors, evidence shows that education has a positive effect on women's participation more often than not. Beyond the participation effect, several studies have shown that investment in women's education can be more profitable than in men's (Psacharopoulos 1985, table 5).

Conclusions

This article began with some reservations about the statistics available on labor force participation and the notion that an economic activity must produce a marketable product or service. Because the distinction between a marketable and a nonmarketable

Table 4. *Relation between Schooling and Female Labor Force Participation in Selected Countries*

Country	*Date*	*Observed relation*	*Study*
Chile	1960	Positive/none	Da Vanzo 1972
Chile	1965	Positive	Peek 1975
Costa Rica	1966–67	Positive	Pecht 1978
Ghana	1970	Positive	de Graft-Johnson 1975
Jamaica	1970	Positive	Standing 1975
Jamaica	1974	Positive	Standing 1975
Kenya	1974	Positive/none	Anker/Knowles 1977
Mexico	1970	Positive	Uthoff/Gonzalez 1976
Nigeria	1973–74	Positive	Standing/Sheehan 1976
Papua New Guinea	1970	Positive	Sheehan 1976
Philippines	1968	Positive	Harman 1970
Philippines	1968	Unclear	Encarnacion 1974
Singapore	1973	Positive	Pang 1974
Sri Lanka	1973	Positive	Standing/Sheehan 1976
Sudan	1974	Positive	Sheehan 1976
Thailand	1960	None/negative	Maurer/Ratajczak/Schultz 1973
Thailand	1971	Positive	Pecht 1978
Venezuela	1972	Positive	Standing 1976
Yugoslavia	1971	None/negative	Rasevic 1975
World[a]	1980s	Positive	Psacharopoulos/Tzannatos 1987

a. Data are for 136 countries.

Source: For individual countries see Standing 1981, pp. 154–59. For the world, see Psacharopoulos and Tzannatos 1987.

good is unclear, a number of conventions, often arbitrary, are necessary. In addition, national statistics on the size of the labor force are not comparable either through time or across countries. Thus few generalizations can be sustained.

Despite these qualifications, the economics of female labor force participation may have something to offer. Factors that appear to have no effect on male participation in the labor force do affect the level, pattern, and trend of female employment—factors such as the size and structure of the economy, education, fertility, religion, and other demographic and sociopolitical characteristics. Female employment is more dependent than male employment on the country's stage of economic development and on the country's noneconomic (cultural) characteristics. While the volume of research in this area should not be dismissed, it should be treated with care. The participation rate takes us as far as one can go in quantifying labor supply. Whether this is adequate depends on the purpose of the study. The differences between women's and men's employment patterns may be efficient in some social contexts. However, as the locus of production gradually moves from home toward the market and more specialization of labor, such differences in employment patterns are likely to reduce economic efficiency. To the extent that women are not allowed to compete with men, women's abilities—half of the country's intelligence—are underutilized. Economic efficiency losses, which are due to the overrepresentation of women in poorly paid, low-status jobs, have been estimated at between 3 percent and 10 percent of gross national product (Pike 1982, Tzannatos 1989). Because the total number of women in the labor force is still only a fraction of that of men, economic efficiency losses could be even greater than these studies indicate.

Although the relation between female participation and a number of economic variables appears to be ambiguous in theoretical terms and vague in empirical estimates, one variable—education—stands out. In theory, education has a positive effect on female participation and a negative effect on fertility. Of course, both labor force participation and fertility depend on a number of other factors, such as religion and demographics. The latter factors are, as a general rule, difficult to change through deliberate policy, and perhaps expensive, if they can be changed at all. In conclusion, if greater participation of women in the labor force is a desirable goal, education for women may be the prime policy option.

Abstract

In most economies women are less attached than men to the labor force. This has important implications for development. This article examines definitions and theories of female labor supply and relates them to statistical evidence from 136 countries in the early 1980s. The findings support the view that, during the transformation from an agrarian subsistence economy, the participation of women in the labor force initially decreases and picks up later after a critical level of development has been achieved. Education is seen as a potential booster of the officially recorded female labor supply in developing countries.

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