THE EFFECT OF ECONOMIC RESTRUCTURING ON PUERTO RICAN WOMEN'S LABOR FORCE PARTICIPATION IN THE FORMAL SECTOR

BARBARA A. ZSEMBIK University of Florida CHUCK W. PEEK University of Michigan

The joint effort by the U.S. government and the political elite of Puerto Rico to industrialize the island created increased demand for female labor and a decline in the number of jobs traditionally held by men. The authors examine whether women's labor force participation in the formal sector responds to improving opportunities for women, declining opportunities for men, or the household's changing opportunity structures. Specifically, they examine a woman's return to work after the birth of her first child as the initial point of conflict between productive and reproductive work. The data used in these analyses are from the 1982 Puerto Rican Fertility and Family Planning Assessment (PRFFPA), an islandwide, representative sample of nevermarried and ever-married women between the ages of fifteen and forty-nine. The authors estimate a series of nested logistic regression models to evaluate the influence of occupational expansion or contraction on the timing of return to work after the first birth. Their findings offer selective support for the idea that women's lives are affected primarily by the occurrence of growing labor demand for women's labor.

In the early post-World War II years, the political elite of Puerto Rico, in collaboration with U.S. government officials and business interests, developed a series of legislative efforts designed to industrialize the island (Dietz 1986). Puerto Rico was transformed from an agricultural economy to one based on services and low-wage manufacturing, an export-oriented industri-

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REPRINT REQUESTS: Barbara A. Zsembik, Department of Sociology, University of Florida, 3219 Turlington Hall, Gainesville, FL 32611.

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alization program known as Operation Bootstrap. Men (and some women) were displaced from the extractive industries, self-employment, and family enterprises, while expanding opportunities for employment in manufacturing and services drew women into the labor force (Safa 1985). Patriarchal and capitalistic pressures joined to establish an environment in which the labor demand for men was declining concomitant with an increase in the labor demand for women. The increased demand for women's labor resulted in new forms of women's participation in work and family life, making it more difficult for them to forego wages and remain out of the labor force for family considerations.

This research examines how changes in labor opportunities between 1950 and 1980 affected married women's labor force activity. We focus on the changes in the Puerto Rican formal economy stemming from the industrialization program, recognizing that, as in other countries, women were neither excluded from the formal economy nor relegated to the edges of the informal economy (Elson and Pearson 1981; Safa 1986). We examine whether women's labor force activity after childbirth responds to improving opportunities for women, declining opportunities for men, or the opportunities of the household. The effects of changes in labor opportunities in the formal economy yield different opportunity costs of a woman's labor force withdrawal and will be especially apparent after the birth of her first child, the initial point of conflict between women's work and parental roles.

OPPORTUNITY COSTS AND OPPORTUNITY STRUCTURES

Opportunity costs, part of the price of children, are the potential wages foregone by women who leave the labor force to bear and raise children (Becker 1981; Mincer 1963). They reflect individual investments in education, training, and work experience before entry into parenthood. A woman who has higher opportunity costs is more likely to remain childless, to bear fewer children, and to otherwise minimize her time spent away from waged labor. Women who have lower opportunity costs will find it easier to withdraw from the labor force when work and family roles are incompatible, for example, immediately after the birth of a child. Between 1950 and 1980, the opportunity costs of Puerto Rican women have risen because of higher levels of education and their increased participation in more career-structured white-collar occupations (Safa 1992). Opportunity costs are also determined by structural factors such as labor demand (Zsembik 1990) and the household division of labor (Mason and Palan 1981).

We focus our analysis on the role of the opportunity structure, or labor demand between 1950 and 1980, in shaping a woman's opportunity costs. Puerto Rico's industrialization process developed in two stages, each shaping the demand for women's and men's employment through changes in the number of jobs typically held by women and typically held by men (Acevedo 1990). The first stage of Operation Bootstrap, beginning in 1947, reflects policies that drew labor-intensive industries (Acevedo 1990). The availability of a cheap and abundant labor force and the favorable business terms offered to U.S. corporations, who faced little international competition, drew substantial industrial capital into Puerto Rico (Melendez 1993). The second stage of industrialization began in the early 1960s as industrial policy shifted to attract capital-intensive manufacturing and service industries (Acevedo 1990).

Examining the effect of opportunity structure on a woman's opportunity costs of childbearing yields three accounts of her labor force participation after childbirth. Higher opportunity costs, and the consequent press for a speedy return to work, may accrue when the demand for women's labor intensifies, the demand for men's labor eases, or when the household relies more heavily on the wife's labor relative to that of the husband's. One explanation suggests that an increasing demand for women's labor raises the level of income foregone with labor force withdrawal, even when the wages are low relative to those of men or those of women in economies that are more industrialized. A second explanation contends that the contracting demand for men's labor and resultant economic need may press women back into the labor force, regardless of women's opportunity structure. The third explanation assumes that the household considers the household wage options relative to other income-generating strategies. Households in which wives have stable wage opportunities and husbands have insecure wage streams will send the wife into the labor force.

Women's Expanding Labor Opportunities

The deliberate development of an export-oriented industrialization increased the demand for female labor in the formal economy (Rios 1990; Safa 1985), contributing to the new international division of labor and a feminization of the labor force (Standing 1989). Employers in export-oriented industries selectively recruit women for their low wages (Nash 1983; O'Connor 1987; Rivera 1986; Safa 1985), relative docility (Rivera 1986; Safa 1986), and the belief that women have the patience and skills to do repetitive and detail-oriented tasks (Lim 1981; Rivera 1986). Manufacturing industries

attracted to the island during both stages of industrialization included the production of apparel and textiles, petrochemicals, pharmaceuticals, electronics, and professional and scientific instruments (Rios 1990). Analyses of decennial censuses (Presser and Kishor 1991) and annual employment data (Acevedo 1990) show that women's labor force participation declined during the 1950s, reflecting both women's typical transition from working in the primary sector to working in the tertiary sector (Boserup 1970; Durand 1975) and women's loss of jobs in the contracting tobacco and home-needlemanufacturing industries (Rivera 1986). Yet the slight decline in women's labor force participation between 1950 and 1960 is concentrated in the early teenage and later adult years (Zsembik 1988). Labor force participation among women between the ages of eighteen and twenty-four, the ages at which most women bear their first child, increased in response to intensifying labor demand and increasing levels of education (Zsembik 1988). Despite the slight decline in labor force participation, women's share of all workers increased (Presser and Kishor 1991).

The sectoral shift in labor opportunities initially provided jobs in manufacturing to women with lower levels of education, then afforded proportionately more opportunities in the service sector to higher educated women. The substantial growth of the service sector generated demand for women's labor, largely due to growth in clerical and predominantly female professional occupations (Pico 1979; Presser and Kishor 1991; Safa 1980). Indeed, the growth in occupations such as clerical work, medical services and health technology, educational services and other service work accounts for over one half of all occupations held by Puerto Rican women in 1970 and 1980 (Amott and Matthaei 1991). Women's labor force participation steadily increased from twenty percent in 1960 to twenty-nine percent in 1980 (Presser and Kishor 1991; Rios 1990). The increase in women's labor force participation is concentrated among women between twenty and twenty-four, rising from around thirty percent in 1960 to more than forty percent in 1980 (Zsembik 1988); it expanded women's share of the labor force from twentyfour percent to thirty-seven percent (Presser and Kishor 1991; Rios 1990).

Our first hypothesis says that women in high-demand occupations will incur higher opportunity costs and return to work sooner than women employed in other occupations by providing the opportunity to earn a wage to more women. The relatively ample supply of affordable child-care workers, typically family members and women in the informal economy (Amott and Matthaei 1991), ease women back into the labor force after a birth. Earnings in manufacturing and services were significantly higher than those in the contracting industries (Baerga 1992), further increasing opportunity costs for women employed in expanding occupations. Industries in search of

women's cheap labor may also offer incentives not captured in wages but that reinforce opportunity costs such as insurance benefits and work schedules compatible with family demands. An additional impetus to return to work rests on the likelihood of increased autonomy of working women, reinforcing responses to higher opportunity costs.

Men's Contracting Labor Opportunities

An alternative explanation of women's return to work after childbirth emphasizes economic need rather than a preference for employment over family life (Safa 1992). Men were displaced from the extractive industries as Puerto Rico industrialized, many of whom were pressured to take jobs in the northeastern United States (Dietz 1986; Morales 1986). Men's formal labor force participation declined from seventy-one percent in 1950 to fifty-four percent in 1980 (Presser and Kishor 1991; Rios 1990). The increasing proportion of women in the labor force between 1960 and 1980 stems more from the declining participation of men than from the increasing participation of women (Presser and Kishor 1991), which is consistent with reports that it is easier for women than for men to find jobs (Safa 1986). Our second hypothesis states that women whose husbands face contracting occupational opportunities are more likely to return to work after the birth of a child than are women whose husbands' opportunities are more stable, presuming that the pressure to return to work is primarily driven by financial need. For example, prior to 1959, women's annual earnings were less than men's, but thereafter the earnings gap was unusually narrow (Presser and Kishor 1991). Men in contracting occupations are less likely to earn a family wage, especially if job benefits are considered, encouraging women to return to work.

Household Opportunities

Wallerstein and Smith (1992) argue for a reconceptualization of the interrelationships among households, the workplace and the state, maintaining that people are articulated into the economy not as individuals, but as households. Because the household functions as an economic unit, one should not look at the labor force participation of individual household members as individual decisions, but rather as a combination of needs and opportunities for all household members. By this reasoning, individual opportunity costs determined by labor demand, labor supply, or preferences for work over family roles are misleading because connections among household members and the dynamics of household decision processes are

overlooked. Initial industrialization of an economy expands more readily when a large proportion of workers reside in semiproletarianized households (Wallerstein and Smith 1992), households that acquire income from a variety of nonwaged economic activities. They are less dependent on wage labor than are proletarianized households, are more likely to accept a low wage, and are more attractive to industries searching for cheap labor. In the initial stage of industrialization in Puerto Rico, households relied on a variety of incomegenerating strategies in addition to wage labor, a semiproletarianized household structure. Between 1940 and 1972, households increasingly depended on wages (Baerga 1992) and workers pressed for higher wages, encouraging industries to move to cheaper labor markets.

The state attempted to address the poverty of its population, yet continued to support industries' need for low-wage labor by mediating the household's dependence on wages. Transfer payments accelerated in the 1970s, providing income support through welfare programs such as Social Security, health services, unemployment insurance, and food stamps (Baerga 1992; Bonilla and Campos 1981; Weisskopf 1985). The state subsidized industrialization through the development of a family planning program to reduce household size, yielding a larger supply of low-wage workers. State machinery promoted a large-scale sterilization program for women of reproductive age, often surreptitiously enacted and amid ambivalence among political factions and individual men and women (Ramirez de Arellano and Seipp 1983). Redefining opportunity costs reflects household wage income foregone because of a woman's labor force withdrawal after childbirth. Our third hypothesis states that Puerto Rican women whose husbands face a contracting opportunity structure and who themselves face an expanding opportunity structure will likely to return to work because of the joint occurrence of wage income activities imposed by their husbands' contracting and their own expanding opportunities.

DATA

We use data from the 1982 Puerto Rican Fertility and Family Planning Assessment (PRFFPA) to evaluate whether the balance between women's productive and reproductive lives shifts in response to improving opportunities for women, declining opportunities for men, or their combination. The PRFFPA is an islandwide, representative sample of reproductive-age women. The data are well suited for our analytical task because of the information on the occupation of each job held since the age of fifteen and the timing of each childbirth, job entry, and job exit. The data also include measures of occupa-

tion and education for each male partner. The lack of data on wages and other income sources and maternity leave pose some limitations on exploring the supply side of opportunity costs and on household economic needs and resources. Yet, the effects of the demand side of opportunity costs are clearly captured in the data.

Sample

We restrict our analysis to women who were married or in a conjugal union at the time of the first birth to capture how changes in the labor demand of men and women affect women's lives. The sample is further restricted to women who worked before the birth of a first child to evaluate the return to work as opposed to the initial entry into the workplace. The focus on the first birth as the time when women typically attempt to combine productive and reproductive lives highlights the effects of changing opportunity structure (Desai and Waite 1991). Women who experience their first birth within a year of being interviewed are excluded. We cover the time of the greatest industrial expansion, between 1950 and 1980, historically bound by the earlier depression and by the later economic crisis caused by changing oil prices, return migration, and changing industrial policy. During this period of change, the women in this sample were making initial decisions that affected the balance between work and family lives.

Variables

Our dependent variable reflects the return to work after a first birth. This dichotomous variable is coded 1 for women who returned to work within one year of the birth of their first child and is coded 0 for those who did not (see Table 1 for the descriptive statistics). We focus on the year after the birth because approximately two-thirds of women who work after the birth of a first child return in this interval and most return to the same job held before birth (data not shown).

Labor demand is measured as the percentage change in number of workers in an occupation over intercensal periods, calculated with U.S. census tabulations of detailed occupation of the employed labor force. Women are assigned the code of 1 if their occupation prior to childbirth was expanding over the decade and coded 0 otherwise. Nearly three-quarters of the sample were in growth occupations, reflecting an increasing demand for women's labor. The declining demand for men's labor is measured in similar fashion. Women are assigned the code of 1 if their mate's occupation was contracting (eleven percent of the sample) and coded 0 otherwise. The substantial

Variable SD Mean Dependent variable Return to work within 12 months 0.64 Background characteristics Urban residence 0.61 Education 11.74 3.69 Part-time work 0.08 Age at first birth 23.38 3.47 Short second-birth interval 0.10 Women's labor demand In growth occupation 0.79 Men's labor demand In contracting occupation 0.11 Education 11.84 3.71

TABLE 1: Descriptive Statistics for Analysis Variables: Puerto Rican Women Employed before First Birth, 1950-1980 (N = 568)

SOURCE: Puerto Rican Fertility and Family Planning Assessment.

emigration of Puerto Rican men to the United States upon the loss of primary-sector jobs may underestimate the proportion of women married to men in contracting industries. We include a measure of *men's level of completed education* to evaluate their market advantage in training. *House-hold opportunities* are measured as an interaction between the wife's and husband's opportunities. A household in which the wife works in an expanding occupation and the husband works in a contracting occupation, coded as 1, has a higher opportunity cost than households with other combinations of individual opportunities, coded as 0.

Additional variables measure the labor supply factors of opportunity costs (education and work experience), the preference for working exclusively in the home, and the geographic distribution of labor demand in the formal economy. A woman's educational level is included to account for differential preference for productive life (work commitment) and investment in work skills. The average Puerto Rican woman has completed about twelve years of formal schooling. Part-time work before a first birth serves as a proxy for labor supply and work experience. Only eight percent of the women in the sample worked part-time in the job prior to a first birth (coded as 1).

The preference for working exclusively in the home is measured by the age of the woman at the birth of her first child and how soon afterward she bears a second child. Age at first birth reflects decisions to delay reproduction experiences to gain advantages in the productive arena. Women are inhibited from returning to work because of pregnancy with a second child; women who bore a second child within a year of the first (a short second-birth

interval) are coded as 1, approximately ten percent of the sample. Urban areas contain many newly created jobs, more service and professional jobs, and offer more opportunities for women to engage child care. Women who resided in an urban area at the time of the first birth are coded as 1 (sixty-one percent) and zero otherwise.

Method

We estimate a series of nested logistic regression models to evaluate the effect of opportunity structure (see Table 2). The LOGIST procedure in the Statistical Analysis System (SAS) version six normalizes on the lowest response value of zero; therefore, a negative coefficient indicates an increase in the likelihood that a woman returned to work within a year of the birth and a positive coefficient indicates an increase in the likelihood that she remained out of the labor force. The first model contains only the human-capital variables, the preference for family-work variables, and the geographicresidence variable. The second model examines the hypothesis that opportunity costs are determined by women's opportunity structure. The third model evaluates whether men's opportunity structure has an effect on a woman's opportunity costs of childbearing. If the coefficient for the wife's employment in an expanding occupation is not significant and the coefficient for the husband's employment in a contracting occupation is significant, we will conclude that a woman's return to work is dependent, in part, on opportunity costs incurred by her husband's labor opportunities. If opportunity costs are determined only by a woman's opportunity structure, then the only labor demand coefficient that will achieve significance will be the demand for women's labor. The final model tests the third hypothesis, that a woman's return to work is structured by the household economy. This model introduces an interaction between the husband's contracting opportunity structure and the wife's expanding opportunity structure as a measure of the household economic unit. If this term achieves significance and the other labor demand variables do not, we will conclude that household opportunities more strongly shape women's labor force participation than individual opportunity structures.

RESULTS

The first model evaluates the supply-side opportunity costs of a woman's reproductive activity (see Table 2). Women who invest in education incur greater opportunity costs for remaining out of the labor force, evident in their greater propensity to return to work within twelve months of the birth of their

TABLE 2: Effect of Women's, Men's, and Household Opportunities on Women's Return to Work within One Year Following First Birth, 1950-1980

Independent Variable	Models			
	1	2	3	4
Respondent in growing occupation		496*	489*	558*
Mate's education			018	018
Mate in contracting occupation			.560*	.236
Household: wife in growing occupation and husband in				
contracting occupation				.476
Education	102***	088**	073*	072*
Part-time employment	1.219***	1.227***	1.253***	1.262***
Age at first birth	046	039	039	039
Short birth interval	.550(*)	.589*	.621*	.622*
Urban residence	.269	.261	.338(*)	.336(*)
Intercept	1.391	1.424	1.341	1.374
Model χ ²	43.27	48.92	53.68	54.35
Model df	5	6	8	9
N	568	568	568	568

SOURCE: Puerto Rican Fertility and Family Planning Assessment. (*) $p \le .10$; * $p \le .05$; ** $p \le .01$; *** $p \le .001$.

first child. Women who invest in greater work experience through full-time employment, rather than part-time work, return to work soon after childbirth. The preference for family work over market work in the formal economy is only marginally related to the return to work. Working women who become mothers early in life and women who delay childbearing are equally likely to return to work. Women who bear their first child at younger ages are less likely to be employed at any time during their reproductive years. Women who bear a second child within a year of the first are less likely to return to work. Some women may intend to bear their second child soon after their first and remain out of the workforce to complete their childbearing. Other women may become pregnant unintentionally, yet find it more difficult to integrate work and family roles while pregnant. Urban residence at the time of the first birth is unrelated to a woman's returning to work.

Women's Labor Opportunities

The second model shows the effects of a woman's opportunity structure on her return to work and is a significantly better fit to the data than the baseline model of supply-side opportunity costs. Higher opportunity costs incurred in an expanding occupation serve to pull women back into the labor force after the birth of a first child. The higher opportunity costs associated with the demand for women's labor may coincide with occupational sex segregation, producing a relative compatibility of work and family roles in a number of the expanding occupations; namely, nursing, teaching, and clerical work. Women who have higher opportunity costs because of investment in higher education and full-time work experience remain more likely to return to work. Although a woman's age at first birth is not associated with continuing work activity, bearing a second child tends to keep a woman out of the formal economy.

Men's Labor Opportunities

The third model offers evidence that both the opportunity structure for men and women influences women's labor force participation after child-birth, a significantly better fit to the data than the model that included only women's labor demand. Men's opportunity structure clearly helps to shape a woman's labor force participation after childbirth. Yet, the coefficient of women's labor demand indicates that women also blend work and family roles in response to their own opportunity structure and are not returning to work solely in response to economic need. The variables measuring women's human capital remain significant, encouraging women to return to work. The preference for family work exerts an independent influence as women who bear a second child within a year of the first remain out of the labor force.

Contrary to expectations, a woman whose husband faces more tenuous job security, typically in extractive occupations, is significantly more likely to stay out of the labor force. Perhaps the initial contraction of the extractive industries compelled men with the least job security to migrate to the United States. The remaining jobs in the extractive industries then reflect relatively more employment and economic security. Alternatively, women may economically contribute to the household through participation in informal economy because the men's labor-intensive work schedules make it more difficult for their wives to simultaneously work in the formal economy and at home.

Although these couples may reside in rural areas, the geographic distribution of wage jobs cannot explain this unexpected finding; the effect of urban residence has been controlled. Urban residence becomes marginally significant when men's labor opportunities are considered, compared to its effect in the first two models; yet, the sign is the opposite direction than expected. Women who reside in rural areas at the time of their first birth are more likely

to return to work than women in urban areas. Because this effect emerges when the effects of men's opportunity structure are included, women in urban areas may be turning to informal labor.

Household Opportunities

The household opportunity structure, measured with the interaction of husband's and wife's labor demand in model 4, does not appear to shape a woman's labor force participation after childbirth. Including household opportunity in the model does not result in a significant improvement over the model that includes both women's and men's labor demand acting independently. Women in households in which a woman's wage opportunities are strong and her husband's are slim are no more likely than women in other types of households to return to work; moreover, the coefficient for men's opportunity structure is no longer significant, indicating that men's wage opportunities do not directly or indirectly affect a woman's labor force activity after childbirth. The coefficient for women's work opportunities, however, remains significant. Clearly, economic restructuring influences women's waged work primarily by generating labor demand for women.

DISCUSSION

The results of this analysis support the position that opportunity costs of remaining out of the labor force after the birth of a child are responsive to both the supply and demand factors governing women's participation in the formal economy. Individual demand factors appear more influential than the household demand factors, although data limitations render this more suggestive than conclusive. Conventional survey research of individuals rarely includes sufficient information on household dynamics to adequately compare models of individual actors to models of household strategies. The clear effect of labor demand, however mediated by the household, indicates that economic change at the societal level shapes a woman's life. Considerable debate remains over the effect of increased participation in the formal economy on women's status (Beneria and Sen 1981; Brydon and Chant 1989; Fernandez-Kelly 1986; Lim 1983).

The expanding demand for women's labor, even in low-wage occupations, may afford women the chance to gain greater economic independence and autonomy from husbands and fathers (Hartmann 1987); consequently, young women will delay marriage and childbearing, bear fewer children in their lifetimes, and spend more time in the workforce (Hartmann 1987). Recent

demographic trends are consistent with this changing gender ideology. Younger cohorts of Puerto Rican women are marrying at later ages, bearing their first child at later ages, and are more likely to be employed before childbearing begins. Safa (1992) contends that Puerto Rican women's increased contribution to the household economy underlies an emergent, more egalitarian relationship between husbands and wives (Safa 1992, 1990); moreover, the increasing participation of Puerto Rican women in the productive arena has solidified the feminist movement (Mergal 1993).

The increased demand for women's labor does not necessarily improve women's status as persistent patriarchal pressures at the societal level continue to favor policies that promote men as the primary breadwinner and as industrial capitalism holds both men and women hostage to footloose industries. First, women may have gained advantage in the household as a result of men's contracting opportunities rather than of women's expanding opportunities (Zinn 1987; Kuhn and Bluestone 1987), leading some Puerto Ricans to anticipate the ultimate destruction of the marital and familial institutions. Puerto Rican officials have voiced concern about social problems that are presumed to inevitably arise in a society that inhibits men from assuming the principal provider role and accordingly developed policies designed to reduce men's unemployment (Rios 1990). If Puerto Rican policy successfully attracts employment opportunities that favor men, Puerto Rican women may be driven out of the labor force and lose their newly acquired autonomy. Giele (1992) contends that the "lack of female power at the higher levels can work as a disincentive to female productivity and reinforce the skewed reward system that privileges men and overburdens women" (p. 7).

The persistence of patriarchal forces at the societal level is further demonstrated in poor Latin American women's social movements (Safa 1990). Women are pressing the state, not specific industries, to meet their demands for public services and improved human rights. Safa asserts that these movements are partially responsible for Latin American women's increased awareness of their gender subordination and holds hope that it will translate into a long-term trend.

Second, prevalent jobs tend to be low-wage jobs, susceptible to relocation to ever-cheaper labor markets, yet still do not lift women from relative impoverishment. Reliance on footloose industries for women's employment produces only a fleeting liberation as women and their families remain economically vulnerable to the threat of corporate flight (Safa 1990). Puerto Rico already has lost jobs, as wages and international competition grew, to nearby Caribbean countries and to the Pacific Rim. Dietz and Pantojas-Garcia (1993) suggest that this is the final stage of the postwar restructuring, generating *maquiladoras* or "twin plants." The more labor-intensive seg-

ments of production in garment and electronics assembly shift in a continual search for cheap labor, yet Puerto Rico thus far has succeeded in maintaining the finishing and packaging process for exports to the United States.

The Puerto Rican economy continues to depend on U.S. funding; U.S. firms provide job opportunities and the federal government provides incomemaintaining transfer payments. Intensifying international competition thrusts foreign investment into a habitual search for cheap labor, often finding it in the more peripheral Pacific Rim. Puerto Rico's shift toward the economic center, relative to other Third World countries, but persistent semiperipheral placement, relative to the U.S. economy, indicates that well-paying, secure jobs for women or men will remain scarce. The deepening global economic crisis foreordains Puerto Rican women's and men's continued dependence on industrial capital's need for women's cheap labor, maintaining women as a last colony (Acosta-Belen and Bose 1990).

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Barbara A. Zsembik is Assistant Professor of Sociology at the University of Florida. She has written articles on Puerto Rican women's labor market activity, childbearing career, and migration experience. She is currently conducting research on the effect of migration on Puerto Rican women's reproductive health.

Chuck W. Peek is a graduate student at the University of Michigan. He is completing a dissertation on gender and race differences in the careers of scientists and engineers.