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CIDE

NÚMERO 75

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**EMPLOYMENT AND CHILD CARE STRATEGIES
AMONG MEXICAN WOMEN WITH YOUNG CHILDREN**

We are grateful for the helpful comments of Albert Berry, Fernando Cortés, Ana María García, Deborah Levison, Laura Elena Pedroza, Alejandro Villagómez, El Centro para la Educación y Desarrollo del Infante, participants in the social economics seminar at the Centro de Investigación y Docencia Económicas, and participants in the seminar series of the Centre for International Studies at the University of Toronto. We also thank Maite Guijarro and María Cristina Gutiérrez Delgado for excellent research assistance. We have benefited from access to data and facilities at the Instituto Mexicano del Seguro Social (IMSS), the Centro de Investigación y Docencia Económicas (CIDE) and the Instituto Nacional de Estadística, Geográfica e Informática (INEGI).

Abstract

This paper describes the child care strategies of urban Mexican women, and analyzes how these interact with employment decisions. Data on both the supply and use of public day care show that access to formal facilities is very limited. Those Mexican women who would use these services if they were available must develop creative strategies in order to combine work with family life. When they do work, these women choose flexible and informal sector jobs, and rely on friends and family members as sources of child care in order to accommodate the dual roles of motherhood and work. Results from simple and bivariate probit regressions support these hypotheses. They suggest that the presence of children has a strong negative impact on the probability that women work, as well as on both the probability of having a formal sector job and of working part-time. The results on the presence of a mother substitute indicate that having a potential caretaker in the household increases the probability of participating in the labor market, decreases the probability of being employed in the informal sector, and increases the likelihood of full-time work. The empirical analysis is based on the 1987 National Survey of Fertility and Health, the National Income and Expenditure Surveys of 1989 and 1992, data from the Mexican Social Security Institute and three rounds of the National Survey of Urban Employment from the second trimesters of 1987, 1991 and 1995.

Introduction

The increase in the labor force participation of women in Latin America is one of the most significant transformations that has occurred in the region over the past few decades. This transformation has been accompanied by changes in the organization of families.

The new patterns in women's time use and family structure suggest concomitant changes in the requirements for child care. Traditional family-based child care networks are likely to be more difficult to organize as the extended family dwelling becomes less common. These changes may imply an increasing reliance on non-family child care, both public and private. Further, the availability of child care is likely to affect the type and hours of work that women are able to perform, as well as their decision to enter the labor force.

Mexico stands out as having experienced the most rapid increase in female labor force participation in the region. In Latin America as a whole, the growth rate between 1970 and 1990 was 152% for women and 68% for men. In Mexico, the participation rate for women grew by 256%, as compared to 99% for men, with the majority of this growth concentrated between 1970 and 1980. The participation rate among urban women reached 30.8% by 1990, a figure that despite the rapid growth, remains below the average of 31.6% for the region (Valdés *et al.*, 1995).

Two economic crises have hit Mexico over the past 15 years that have also had important effects on the labor market. The first crisis lasted until 1989 and the most recent dates from December of 1994. In 1995, GDP fell by 5.9% and inflation reached 52%. Families have been forced to innovate in their income-earning strategies in order to minimize the impact of the crises. These changes affect women's labor market participation and hence the patterns of child care provision within the family and the demand for child care outside of the family.

The evolution of family structure has also undergone important changes in Mexico. Extended families (parents, their children, and other relatives) are less common. In 1980, 25.5% of Mexican families were classified as extended, as compared to 18.3% in 1990. Female headed households have become more prevalent, increasing from 15.3% in 1970 to 17.3% in 1990. Mexico also stands out from the rest of the region in terms of family structure. Nuclear families (parents and children) are more common than in other countries of the region (Valdés *et al.*, 1993).

These transformations in female labor force participation and family structure in Mexico will continue to generate changes in the demand for non-family child care. Recent reforms to the social security system, through which much of public day care in Mexico is provided, have begun to take into account the need to improve and broaden existing institutions. In order to take full advantage of this climate of reform, it is

important to increase the level of understanding of women's labor force participation, child care choices and the interactions between the two.

This paper documents the child care strategies of Mexican families, and analyzes how child care requirements interact with employment decisions. The central hypothesis is that a lack of appropriate child care may reduce the probability of labor force participation among Mexican women. The results support this hypothesis and further suggest that women who do work develop creative combinations of employment and child care strategies. They choose part-time and informal sector jobs in order to accommodate the dual roles of motherhood and work. The paper contributes to existing research by considering the relationship between the decisions of labor force participation and type of work, as well as by exploring data that had not previously been used in multivariate analysis of these decisions.

The paper is divided into seven sections. The first part presents a brief overview of recent literature on female labor force participation and day care, focusing on the Mexican case. The next section provides a basic overview of the supply of day care in Mexico. A description of the data sets used in the analysis follows. Section five includes descriptive evidence on the use of formal sector and informal child care arrangements, as well as on expenditures. The next part reviews the empirical models and introduces the multivariate analysis presented in section seven. The probit regressions that follow consider the probability that women work, the determinants of formal and informal sector employment, and the probability of working full or part-time. The independent variables of particular interest in this study are the number of young children in the family and the presence of mother substitutes. The econometric analysis compares the years 1987, 1991 and 1995, with the years 1987 and 1995 corresponding to economic downturns and 1991 to economic recovery. The final section summarizes the findings, and presents policy and research recommendations.

The descriptive work makes use of the 1987 National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud-ENFES*) and the National Income and Expenditure Surveys of 1992 and 1989 (*Encuesta Nacional de Ingresos y Gastos de los Hogares-ENIGH*). Information on the use and supply of government-provided day-care comes primarily from the Mexican Social Security Institute (*Instituto Mexicano del Seguro Social-IMSS*). Three rounds of the National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*) from the second trimesters of 1987, 1991 and 1995, are used for both the descriptive and multivariate work.

The terms "economically active" and "working" are used interchangeably in this paper. Unless otherwise specified, the research is based on a standard economic definition of work that excludes unpaid tasks undertaken in one's own home that are not part of a family business. This definition of economic activity is narrow and does not take account of the important economic contributions of many individuals, especially women, who dedicate their time to household work and the care of young children. Still, data limitations make it necessary to use this narrow view of work for

the quantitative analysis presented in this paper. It is important to keep in mind that household work itself may be difficult to combine with child care.

I. Recent Studies on Child Care and Female Labor Force Participation in Mexico

The literature from developing countries on the interaction between women's labor force participation and child care is extensive. Still, relatively little quantitative analytic work has been undertaken on the interaction between these issues in developing countries despite their policy relevance. This brief review of recent literature provides an overview of the previous empirical work that is specific to the Mexican case, as well as an introduction to some of the quantitative research on Latin America.

Acevedo *et al.* (1986) summarize the results of a study of institutional and informal child care in several low-income areas of Mexico City undertaken by *Mujer y Ciudad*. They highlight the difficulties involved in combining household work with child care. Chores such as shopping, and other commitments such as seeking health care, may be hard to undertake with small children. In large urban metropolis such as Mexico City, these chores become especially challenging. This is particularly true for poor women, due to the long distances often involved in traveling from peripheral areas of the city.

The same study found that working mothers felt that the available child care from neighbors and relatives was insufficient and they sometimes took their children to work with them. Only 9.1% of all mothers had ever used institutional child care and only seven of the families interviewed had rights to official day care services through their place of employment. Among these families, none were making use of the facilities either due to lack of space or preferences for other forms of child care. Still, the survey found that these family members actually cared for children less than 20% of the time. Although they had little experience with institutional care, 69% of all respondents felt that official child care institutions could assist mothers and contribute to child development. Although inappropriate in many ways, official services were still in short supply. The research cites that the Center for Infant Development (CENDI) program, for example, received requests for 92,600 inscriptions for 55,800 openings in 1980.

More recent work by Wong and Levine (1992) uses the 1982 Mexican National Demographic Survey (*Encuesta Nacional Demográfica*) to study the impact of the presence of a mother substitute as a determinant of labor force participation and recent fertility behavior. A mother substitute is a non-employed woman aged 13 or over who forms part of the mother's household. Their sample is restricted to married women with young children. Using probit regressions, they find that the presence of an additional woman in the household has a significant positive effect on the probability of working. The regressions on recent fertility, based on the probability of having more

than one child within 5 years, show that women with additional caretakers in the household are actually less likely to have more than one child. These combined findings lead the authors to the important conclusion that the provision of low-cost child care facilities would tend to increase labor force participation among the mothers of young children and would not increase fertility. They also note the importance of additional research to investigate the endogeneity of household structure to female labor force participation decisions.

In Levine and Wong (1989), the findings using the 1982 data are compared to results using the 1987 National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud*). The authors find that the presence of mother substitutes is not a significant variable in predicting labor force participation in 1987. The number of children aged 6 to 12 is correlated with a decrease in the probability of employment in 1982, yet is insignificant in 1987. The authors suggest that these differences in the findings across the two years may be associated with a tendency toward increased female labor force participation over the period and possible changes in the child care strategies adopted by families.

Several authors have analyzed the determinants of female labor force participation in Mexico, often with a particular focus on family coping strategies in the face of economic crisis. Rubin-Kurtzman (1993) evaluates the differences in the determinants of female labor force participation and of being a salaried worker in Mexico City between 1970, a year of relative prosperity, and 1976, a year of greater economic hardship. The analysis is based on data from the Survey of Internal Migration, Occupational Structure and Social Mobility of 1970, and a comparable sample of the 1976 Mexican Fertility Survey. The results suggest a negative impact of the presence of young children on the probability of working among women, and for those who do work of being employed in the formal sector. The author also highlights the expansion of unsalaried relative to salaried labor in 1976. These results are based on separate logit regressions for the probability of working and of being employed as a salaried worker.

García and Oliveira (1994) also evaluate the determinants of women's labor force participation in an extensive study using both qualitative and quantitative research. The regression analysis considers both the rural and urban areas using the National Demographic Survey of 1982 and the ENGES of 1987. The author is concerned with changes in years of crisis versus economic recovery and undertakes logit regressions to evaluate changes in the determinants of female labor force participation. The study highlights the importance of differentiating between economic sectors in the evaluation of the impact of children. Among agricultural workers, women with children have the same probability of working as those without. The same is true in 1982 for non-manual and non-salaried non-manual workers. In 1987, however there is a negative and significant impact of the presence of children. Among

salaried, manual workers the findings are reversed. In 1982 the impact is negative and significant, while in 1987 it is insignificant.

Figuroa *et al.* (1996) use a rich combination of data sources to analyze the characteristics associated with the labor force participation of women with preschool-age children. The data show that labor force participation has increased over time among both women with and those without young children. They find that female labor force participation rates increase as number of children declines and age of children increases. These variables appear to have a greater association with labor force participation than age of the woman. Agricultural labor and manual unsalaried work is more common among women with young children. The results also suggest that non-nuclear family arrangements facilitate the labor force participation of women.

Using a very interesting survey of women working as ambulatory vendors in the informal sector in Mexico City, Hernández and Zetina (1996) analyze the determinants of type of child care for children age 0 to 3 years. They find that 4.5% of children are left without supervision, 35.6% are cared for by their mother, 35.2% by another family member. The remaining are cared for by another person with 1.9% attending a day care center, 3.7% a paid adult, and 18.4% a care provider below the age of 12 years. The authors present the results of logit analysis of the determinants of own mother care versus care from another family member. They suggest that belonging to a nuclear as opposed to extended family, age of child below one year, lack of domestic help in the home, and mother's education being primary or less, are significant determinants of the probability of own-mother care among this group of ambulatory vendors.

As this review concentrates on the Mexican case, it makes only brief reference to work from other countries. Among the analytic papers available on the interaction between child care and women's employment decisions in Latin America, Connelly, DeGraff and Levison (1996) is especially noteworthy. They show that the presence of young children in need of day care has a negative impact on the probability that a women will be employed in metropolitan Brazil. They also find evidence that teen siblings and women over age 65 substitute for mother's time in child care, whereas older daughters and other relatives aged 25 to 54 substitute for mothers in market work.

For an excellent review of the literature on the effects of child care costs on female labor supply for the United States and evidence for Canada see Cleveland, Gunderson and Hyatt (1996). In general, these studies show that increased child care costs have a negative effect on labor market participation and on the probability of working in paid employment. For an overview of programs and policy concerns in the developing world see Myers and Hertenberg (1987) and Myers (1992).

II. Background Information on the Supply of Day Care and the Social Security System

One of the largest day care programs is run Mexican Social Security Institute (*Instituto Mexicano del Seguro Social-IMSS*) and offers spaces to children aged 43 days to 4 years of working mothers registered in the social security system. In 1995, IMSS was operating 455 child care centers throughout the country, offering almost 62,000 places (IMSS, 1995). IMSS care tends to be of high quality both in terms of curriculum design, health and hygienic considerations, and physical installations. Norms are set and monitored from within IMSS.

Child care centers are operated by a number of other entities within the public sector, many of which operate under the guidelines of the Secretariat of Public Education. ISSSTE (*Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado*) was offering approximately 24,000 day care spots for the children of public sector employees in 1995. Many public entities such as the Secretariat of Education offer additional places for children of their employees. DIF (*Sistema Nacional para el Desarrollo Integral de la Familia*) offers over 5500 places in Mexico City, as well as operating some programs in other areas of the country, that are generally targeted toward low-income families. In addition, state and local governments, such as the *Delegaciones* in Mexico City, operate a number of child care centers that are open to the public (Tolbert *et al.*, 1993).

Private provision takes many forms, including private for-profit, employment-based, community organizations and home-based initiatives. No information is available on the number of private day care centers as only a fraction of operate in the formal sector or are officially registered through the Secretariat of Public Education or of Finance (Tolbert *et al.*, 1993)¹. At present, efforts are underway to promote registration and accreditation through the Secretariat of Education which implies regular inspections, compliance with an educational curriculum, meeting a minimum standard of hygiene and building requirements, and paying taxes.

IMSS has a particularly important role in the provision of child care. Since 1962, it is the entity responsible for the provision of day care to working mothers outside of the public sector (IMSS, 1996). The program is financed by a 1%, across-the-board, payroll tax and functions as a separate aspect of social insurance, in addition to the existing provisions for health and maternity, work injury and disability². The philosophy behind day care insurance is to provide women with the opportunity to participate in the labor market on an equal basis with men, while offering children high-quality care and preparation for their future education and human capital

¹While the Economic Census undertaken by INEGI includes day care centres, the information is only available as part of a larger category of service organizations.

²All working women are eligible to 3 months of maternity leave beginning 6 weeks prior to the due date of the child.

development (IMSS, 1995). One premise behind the policy is that the care of children in Mexico is the responsibility of the woman.

It is important to emphasize that IMSS services only cover the formal sector. Insurance is typically considered to be synonymous with salaried or formal sector work, and the formal sector is often defined as the sum of IMSS and the public sector. While by law all workers should be registered at IMSS, a large proportion of workers tend to operate within the informal sector and evade registration and taxes.

Despite being one of the largest providers, IMSS services cover only a fraction of formal sector workers (Table 1). Coverage varies by delegation, with an overall average of one-twentieth of a space per eligible child (aged 0 to 4 and mother registered at IMSS and working) and less than one-tenth of a space per insured woman. These are clearly simple measures of coverage as not all women have children, some women have more than one child below the age of 4 years and many women would prefer to use non-IMSS child care such as relying on family members. As a proportion of all children aged 0 to 4 years of working women registered through IMSS, the day care program was attending to 9.8% of potential demand in 1995. IMSS calculates that 70% of these children actually require day care, implying that the program satisfies 14.1% of real demand and that some 370,000 children are left without publicly-provided day care (IMSS, 1995)³.

IMSS is currently evaluating a series of options for increasing the coverage and reducing the unit costs of day care services. Two main options are under consideration: 1) expansion through child care centers run by community organizations (vecinal comunitario)⁴; and, 2) the remittance of IMSS child care quotas to firms that assume the responsibility of providing child care to their employees. In the case of child care centers run by the community, IMSS would pay a community organization (a fixed fee per child) to provide child care services to children of mothers who are registered in IMSS. In the case of returning of fees, IMSS would return a portion of the quotas paid directly to the firm (based on the number of children of IMSS mothers between the age of 3 months and 4 years of age who work at the firm). Quota reversion in day care is actually mentioned in both the new and the previous Social Security Law. These options would avoid the high costs and delays involved in government construction of child care facilities and would permit a more rapid expansion of child care services.

Planned reforms to the financing of day care will also increase coverage and begin to address issues of distribution. According to the new Social Security Law of 1995, the budget allocated to child care centers in 1997 will substantially increase, as 80% of the 1% payroll tax will be used exclusively for child care centers. IMSS has

³This measure of coverage can be checked against the data from the National Survey of Urban Employment. This survey shows that almost 20% of working women in the urban areas have at least one child below the age of 4. Based on this figure, IMSS services cover only 9.1% of the potential demand for child care among employed women in the formal sector.

⁴There are currently 14 child care centres of this type in IMSS.

taken advantage of this increase to begin to implement a capitated budget, in which the size of the budget given to each state (delegación)⁵ is a function of the number of children between the ages of 3 months and 4 years of IMSS mothers in the state. It is expected that this new budget will help to expand coverage in areas where child care needs remains unsatisfied, thereby resulting in a more equitable distribution of child care resources.

While the restructuring of the existing day care schemes constitute important initiatives to improve the system, it is unclear that they will be sufficient to meet the needs of formal sector workers. Further, informal sector workers, unemployed women, and the non-working poor, many of whom cannot rely on other family members to care for their children, continue to be excluded from most public day care services.

III. Data Sources

In order to develop a detailed descriptive picture of female labor force participation and child care the paper includes information from the National Income and Expenditures Survey (ENIGH) of 1989 and 1992, the National Survey of Fertility and Health (ENFES) of 1987 and the National Urban Employment Surveys (ENEU) of 1987, 1991 and 1995. For reasons of comparability, the analytic work is based exclusively on the ENEU from the same set of years.

The ENFES of 1987 includes the following question directed to working women: While you work, who is in charge of the care of your children? The survey is national, although this paper uses only the data on cities of 20,000 or more inhabitants. The sample includes 9310 women aged 15 to 49 who form part of 8763 families. The ENFES is the only public data set in Mexico that explicitly includes a question on where children are cared for while a women works⁶. Still, it is used only in the descriptive work as it provides no information on child care expenditures and has limited information on employment of the mother (no wage information, hours worked or other variables to identify whether the mother is employed in the formal or informal sector).

The ENIGH is a national household level survey with detailed information on all types of household income and expenditures. It is used to enrich the information from the ENFES by adding data on the amount of child care expenditures for children in day care centers and in kindergarten. The reference period is three months. The ENIGH is also used to analyze the percentage of female workers who report that they receive child care as a job benefit. The samples from 1989 and 1992 are combined.

⁵There are 38 delegaciones, while there are only 32 Mexican states. Mexico City represents 4 delegaciones, the State of Mexico is divided into 2 delegaciones, as is the state of Veracruz.

⁶Two surveys of child care and domestic time use were undertaken in 1994, "*Encuesta sobre Organización Doméstica*" and the "*Encuesta sobre Organización Familiar*". Neither of these surveys have been processed nor made available to the public.

The ENEU is the data set used for the regression analysis, as well as some of the descriptive work. It is a quarterly labor market survey covering the major urban areas of Mexico, with a sample in each trimester of approximately 30,000 households. The survey provides detailed labor market information including employment status, wages, hours worked, size of firm. It also includes standard demographic variables related to the structure of the family. These data do not include information on child care. Still, they are used for the econometric analysis because they constitute the richest available source of labor market statistics. The regression analysis is repeated using data from ENEU for each of 1987, 1991, and 1995 in order to explore potential changes in the effect of children on a women's labor market participation during economic crisis and recovery. The analysis is based on the second trimester survey for each of the three years in order to control for differences associated with seasonal variation in labor force participation.

IV. Descriptive Evidence on Work and the Use of Day Care in Mexico

Mexican families with working mothers tend to combine a variety of formal and informal, as well as family and non-family day care strategies. Still, the majority of urban working mothers continue to rely on other family members to care for their young children.

The primary source of care among working mothers interviewed in the 1987 National Survey of Fertility and Health (ENFES) who considered their child in need of day care was from family members and other non-paid people in 56.3% of cases (Table 2). Older children were listed as the primary caretakers in 11.8% of cases, while 4.9% of the women surveyed mentioned the husband and 39.6% other unpaid individuals from inside and outside the family. Only 10% of mothers rely on institutions, although an additional 7.9% pay a person to care for their children while they work.

Paid and out-of-home day care is concentrated among specific groups of women. More educated women are more likely to use institutional care or pay for a non-family care giver (Table 3). Only a small proportion of families report positive expenditures on child care centers, and those who do belong to the wealthier deciles of the income distribution. The pooled results from the National Income and Expenditure Survey of 1992 and 1989 (ENIGH) show that a total of 2.3% of urban families with children aged 0 to 4 years devoted some portion of their spending to child care centers, and 12.6% to pre-school facilities. Although only a low percentage of families report positive expenditures, day care and pre-school constitute an important part of overall spending among those who do report positive spending. Expenditures on day care and pre-school constitute 4.5% of total family expenditure, a figure that almost doubles what is devoted to health among the same families (Table 4).

As is the case in most countries, Mexican women with young children are less likely to be working than those without children (Table 5). The differences in these proportions are approximately 15%. For example, 27.4% of women with a child aged 0 to 11 years was working in 1995, as compared to 35.4% of women without a child of this age.

In addition to relying on other caretakers, Mexican women appear to adopt particular employment strategies in order to combine work and family life. As compared to working women without young children, those with children aged 0 to 11 are more likely to work in the informal sector and to be employed part-time (Table 5). An important source of flexibility in combining work with child care is the sector of employment.⁷ Women who work in the informal sector and/or are self-employed may have more control of their work schedules, as well as being able to bring their children to work with them. Almost 40% of self-employed women are primary care providers (Table 6). In the case of non-remunerated workers, many of whom work in family businesses, 48.6% report that they are principal care givers. Salaried workers, who tend to make up a large proportion of all working women, tend to rely on family members and friends for child care. More than 20% use institutional or paid child care, and they account for the majority of women using these forms of care.

The mother is more likely to be the primary source of care if she works part-time (Table 7). Almost 55% of women who act as the primary care giver work less than eight hours per day. Still, 30.8% of these women undertake a working day that is over eight hours. A large proportion of women who rely on family members as primary care givers for their children are able to work full-time.

It is important to note that informal sector work and shorter work days may be related strategies. Salaried female workers, the largest formal sector group, tend to work longer hours than self-employed women and women who work in family businesses who typically make up the bulk of female informal sector workers. The average number of hours worked per day was 7.1 for self-employed and family workers, as compared to over 8 hours for other groups of workers (Table 8).

V. Empirical Model and Hypotheses

The central concern of this study is the impact of young children on women's labor force participation, sector of work and part- or full-time status. The analysis includes reduced form equations for the probability of working, working for the informal or formal sector, and being employed part- or full-time. The central variables of interest are the presence and ages of children and the presence of mother substitutes.

⁷For evidence on self-employment and work as child care providers as options that enable women to combine motherhood and work in the US see Connelly (1992).

The analysis is prefaced on the theory that individuals maximize their utility in their choice of whether or not to work, and conditional on working, to be employed part or full-time, and in the formal or informal sector. The analysis follows Heckman (1974) in assuming that the decision to work is determined by relative market and non-market productivity, as well as household income. The individual chooses the sector in which to work based on expected net earnings, including the value of job benefits and costs of child care.

The sample includes all women, regardless of motherhood status, who are either household heads or the spouse of the household head between the ages of 16 and 45. Limiting the upper age bound to 45 years should help to reduce the importance of life cycle effects that might make it difficult to interpret the impact of the regressors measuring presence of young children. The regressions were repeated using other age groupings that included older women and excluded younger women. The results are consistent with those presented below.

The sample is limited to household heads and spouses because of the nature of the data. In the ENEU, family relationship is coded in reference to the household head and it is impossible to identify a women's own children and their ages for females other than the head and spouse. The regressions were repeated with the sample of all women regardless of relationship to the household head and using number of children ever born as our independent variable. The results are similar to those reported below.

A limitation of this study is that fertility and labor market participation decisions are not separately modeled. This implies that the endogeneity of the decision to have a child is not fully accounted for in the regressions on the probability of employment. In order to examine the importance of this limitation, the research was repeated restricting the sample to include only those women who have a child between the ages of 0 and 4 and including children aged 5 to 11 as the regressors. This sample treats recent fertility as endogenous to labor market participation, yet assumes past fertility decisions are exogenous (Wong and Levine, 1992). The results support the findings presented below.

The analysis includes both simple and bivariate probit models. The bivariate regressions take into account sample selection problems that arise if the participation decision is not independent of, respectively, the sector of employment or of part-time status. The models jointly estimate the probability of working, and the sector of employment or part-time work, under the assumption that the decisions are related and sequential. It is important to note that the regressors are the same in each equation as no identifying variables are available.

The analysis of both sector of employment and part-time status makes it possible to consider different aspects of job flexibility. Further, part-time status may be a factor over which workers have greater power to exercise choice. This is true to the extent that certain groups of workers have fewer opportunities to choose between formal and informal sector employment.

The dependent variable measuring labor market participation is whether or not a woman was working during the week previous to the survey. An individual is defined to be in the formal sector if he or she reports receiving health benefits (IMSS, ISSSTE or private insurance) from his/her employment⁸. Part-time work is defined as working less than 30 hours per week. Means of the dependent variables are given in Table 9.

The independent variables of primary interest are those that capture the number of children by age group. These include the number of children aged 0 to 4, 5 to 8, and 9 to 11⁹. The effect of children aged 0 and 4 is modeled using a dummy variable representing the presence of a child between these ages, and a continuous variable representing the number of additional children in the same age group. This formulation takes into account the possibility of economies of scale in child care and the assumption that the presence of one young child is sufficient to affect female labor market status.

The presence of young children should have a negative impact on the probability of labor force participation as found in other studies (Connelly, DeGraff and Levison, 1996; Wong and Levine, 1992). We expect that children, by increasing the costs of labor market participation, will reduce the probability of a woman working and that furthermore, young children will have a larger negative effect on the probability of working than older children. The lower impact at older ages is due to decreases in the necessity for child care, and that in some settings, children as young as 5 or 6 may be obliged to begin to work, or to care for infants enabling the mother to work (Knaul, 1995).

Given the policy of providing day care to female workers with small children, it is also to be expected that children would increase the probability of choosing the formal sector. In addition, formal sector jobs generally provide other benefits, such as the right to health care, that may make these jobs more attractive for women with children. On the other hand, the short supply of child care services and the fact that families may prefer other sources of care may have an important bearing. The presence of children could be associated with employment in the informal sector, given its greater flexibility for combining child care with work.

Similarly, the presence of young children should make a woman more likely to accept part-time employment. A limited work schedule allows more time for child care.

⁸We also experimented with a second definition, that defines the informal sector as all individuals who have less than or equal to a secondary level of schooling and are either working in a small firm (less than 10 workers) or self-employed. This second definition is designed to avoid including independent professionals in the informal sector. The regression estimates using this definition were very similar to those reported here.

⁹The regressions were repeated using different age groupings with similar results.

Following Wong and Levine (1992), the regressions include a variable that indicates the presence of a “mother substitute”, defined as whether the household includes additional females between the ages of 12 and 75, independent of whether or not they are working. As suggested in Connelly, DeGraff and Levison (1996), this formulation does not assume that the labor force status of other women in the household is exogenous to the labor supply of women in the sample. Given that a mother substitute would theoretically be most important in the case of the presence of a young child, the effect of the mother substitute is modeled as an interaction effect with the presence of young children.

The mother substitute variable is expected to have a positive impact on a woman's probability of working. A mother substitute may reduce child care costs, and is often a preferred source of care as compared to a non-family member. This variable could potentially have a negative impact on the choice of formal sector work, as the presence of a mother substitute, other things equal, would reduce the value of the free child care service provided by the formal sector. On the other hand, a mother substitute may reduce the value of informal sector work by reducing the need for a flexible schedule. Similarly, the variable should have a negative impact on the probability of part-time employment.

The regressions include control variables for a women's age, age squared, and dummy variables for the level of education. Education is modeled using a dummy variable for each of complete primary, some or complete secondary or more than complete secondary. The excluded group in the education variable is less than complete primary school or no schooling. These variables should predict the market wage offer as well as productivity in the household¹⁰.

City dummies are included to control for differences in economic opportunities across regions in Mexico. The results for these variables are not included in the tables. They are available from the authors upon request. A dummy variable measuring marital status is also included in each regression.

The remaining variables help control for household income¹¹ and model the impact of formal sector family benefits. We include controls for whether there is a male aged 18 or over working in the household, and if present, whether he has health benefits¹². This assumes that male labor supply decisions are exogenous to female

¹⁰The equations are in fully reduced form as they include these controls instead of an instrumented wage offer. Wong and Levine (1992) found little difference in the impact of family structure on the probability of working using the fully reduced form as compared to the instrumental variable approach.

¹¹It is worth noting that the ENEU does not provide any information on household dwelling characteristics, total household income (other than wage income) or other variables that would help to identify the wealth level or poverty status of the household. To account for the possible effect of income/poverty on our estimations, we separated our sample according to education of the household head. Our results did not differ significantly between these groups.

¹²The regressions are robust to the exclusion of these variables and the results remained essentially the same as those presented below.

labor supply decisions, a hypothesis that is inconsistent with traditional family labor supply models. The assumption is more appropriate to the case of Mexico than to most developed countries as males generally make work decisions independently of the work status of their wives. Further, males are always able to cover wives through their health benefits, while it is more difficult for a female to cover her husband with her health benefits¹³. Specifically, the hypothesis behind the inclusion of these variables is that the presence of a male household member with a formal sector job may encourage the choice of informal sector employment by other household members, because the benefits of their holding a formal sector job are reduced¹⁴. Means of the independent variables are given in Table 10.

The regression results for the simple probits for the probability of working, formal sector employment and part-time status are presented, respectively, in Tables 11 to 13. The estimates give the marginal effects of each independent variable, evaluated at the mean value of all other independent variables. The results for the bivariate probit equations for sector of employment are presented in Table 14, and for part-time status in Table 15. Due to computational restrictions, these tables give coefficients as opposed to marginal effects. All regressions are repeated for the years 1987, 1991 and 1995 in order to consider changes over time.

VI. Results

The presence of children has a negative and significant impact on the probability of working for the sample of all women (Table 11). In general, the younger the child, the larger the magnitude of the estimated disincentive effect. For instance, in 1987, the presence of a child between the ages of 0 and 4 reduces the probability of working by 7.1%, while additional children between the ages of 0 and 4 reduce the probability by 6.2%. Having a child between the ages of 5 and 8 would reduce the probability of working by 3.7%.

Changes in the magnitude of these effects over time are consistent with the hypothesis that women are less able to “stay at home with the children” in times of falling household income. Children of all ages have a much smaller negative effect on the probability of working during years of economic crisis (1987 and 1995) than in economic recovery (1991). For instance, in 1991, a child between the ages of 0 and 4

¹³In ISSSTE, a women may not cover her husband. In IMSS, under the new law, it is only possible if the husband can demonstrate that he is (and has always been since the date of marriage) economically dependent on his wife. This represents a change from the previous IMSS law, which allowed coverage of spouse with health benefits, independent of the spouse's sex.

¹⁴Furthermore, the informal sector may represent a “better” option in terms of income levels. Parker (1995) has demonstrated that hourly earnings levels, net of taxes, are higher in the informal sector than in the formal sector, at all levels of education and both for men and for women.

reduces the probability of working by 13.1% whereas in 1995, the corresponding reduction is by 7.8%.

The presence of a mother substitute has a positive and significant effect on the probability that a woman works in all years of the analysis. In 1995, for example, the impact on the probability of working is 5.2%, versus 9% in 1991 or 1987. This suggests that women who can rely on another family member, such as an older sibling, are more likely to enter the labor market. Again, it is interesting that the impact is lower in 1995 than in other years.

The presence of a male worker in the household has a large and positive effect on the probability of a women working in all three years. This is consistent with several explanations including assortive mating, the fact that individual family members may help in a job search, or that women may work in a family business. Interestingly, the presence of a male with health benefits is negative and significant in all three years, consistent with the hypothesis that the benefits of working are reduced when a male family member has health benefits and therefore can cover the other family members.

The education and age variables included to control for the potential wage offer are, as expected, positively related to the probability of working. Marriage has a large and significant negative impact.

The results for working in the formal or informal sector show that children of all age groups have a significant and negative effect on the likelihood of formal sector work (Table 12). The findings hold for all three years of analysis and the magnitude of the impact is generally larger for younger children. This is consistent with the hypothesis that, in spite of the theoretical provision of free child care to workers in the formal sector, informal sector jobs, all else equal, are preferred by women with young children. Again, this may be due to the higher degree of flexibility of these jobs, that makes caring for children more compatible with working.

The impact of the mother substitute variable is less clear than in the equations on probability of working. It has a positive and significant effect on choosing the formal sector only in 1987. This is not surprising given the hypothesis that presence of a mother substitute reduces both the value of formal sector day care benefits and the need for job flexibility.

The presence of a male with health benefits has a positive effect on the probability of choosing a formal sector job, contradicting our hypothesis that family strategies might suggest that if one member already has a formal sector job, there is a reduced incentive for other members to choose a formal sector job. This may be explained by assortive mating or the importance of family connections in finding formal sector jobs.

As hypothesized, the presence of young children has a positive impact on the probability of part-time employment in all three years of the analysis (Table 13). In general, the impact is weaker for older children.

The presence of a mother substitute has a negative and significant impact on the probability of part-time status in 1987 and 1991. In 1995 the variable is negative but insignificant. The negative impact is consistent with the idea that a mother substitute lessens the restriction of the presence of young children on a mother's labor force decisions, making it more plausible that she will work full-time.

The bivariate probit results on the participation decision and sector of employment generally support the findings for the simple probits (Table 14). Consistent with the hypotheses of the study, the presence of children of all ages has a significant negative impact both on the probability of working and the probability of informal sector employment. The results are consistent across the three years. The mother substitute variable has a positive impact on both probabilities, again consistent with the hypotheses formulated above. The impact is significant at the 5% level in 1987, and at the 7% level in 1991 and 1995. The results for the other variables are consistent with expectations.

The correlation between the equations is positive and significant in 1987 and 1995, suggesting some bias in the results for the simple probits. In 1991, the sign is again positive yet the correlation is insignificant. The finding that 1991, the recovery year, differs from the other two years is consistent with the hypothesis that economic crisis has an important impact on the employment decisions of women and their families.

The bivariate probit regressions for labor force participation and part-time work show an insignificant positive correlation between the two equations in all years. The signs of the variables of interest support the original hypotheses in both equations for 1987 and 1991. The results for presence of young children and mother substitutes are insignificant in the part-time status equation for 1995. In the 1995 employment equation, the variables are significant and of the correct sign. The fact that the correlation between the equations is insignificant would seem to suggest that the results from the simple probit equations can be accepted. Still, the lack of identifying variables for the bivariate probits may also be affecting the results. This is an issue for future research.

Conclusions

Mexican families with working mothers continue to rely on other family members for child care. Only a small proportion use institutional alternatives or a paid day care provider. Further, working mothers tend to be employed in the informal sector and in part-time jobs. These work arrangements presumably provide a more flexible schedule, present opportunities for caring for children on-the-job and provide more time for child care. These results agree with the results of other studies and data sets (Stern, 1996; García and Oliviera, 1994; Rubin-Kurtzman, 1993).

The results from both simple and bivariate probit regressions from three different years suggest that, controlling for other individual and family characteristics, children have a strong negative impact on the probability that mothers work. The regression results also confirm the hypothesis that women with young children tend to look for flexible employment. They are more likely to work in the informal sector and in part-time positions, even controlling for the presence of a mother-substitute in the home. The result for formal sector employment is particularly interesting yet not surprising. Free, public day care is a legally stipulated benefit of workers who are registered in the social security, still the number of IMSS day care spaces is very limited. Again, these results agree with earlier research on the determinants of labor force participation among Mexican women (García and Oliviera, 1994; Rubin-Kurtzman, 1993).

The idea that many working women continue to rely on family members for child care receives some support from the regression results. The presence of a potential care-giver in the household tends to increase the probability of participating in the labor market, decrease the probability of informal sector employment and increase the probability of full-time work.

The findings of this study also lend support to the hypothesis that economic crisis has an important role in women's labor force decisions. While the results are not consistently strong across years and regressions, it does appear that the presence of children has a stronger negative impact during periods of economic downturn. It is possible that the regression results reflect the fact that women may have difficulty locating jobs during economic crisis. Still, it is probable that the findings indicate that during times of falling household income women are less likely to be able to choose to stay home to be with children. This conclusion agrees with previous research on household coping strategies during economic crisis (Escobar Latapí and González de la Rocha, 1995; González de la Rocha, 1995; Rubin-Kurtzman, 1993; García, 1989). The findings of these studies suggest that during economic crisis, Mexican families increased the number of workers per household relying most heavily on adult women, many of whom had heavy domestic responsibilities. For future research it will be interesting to extend this line of research by examining the characteristics of women who enter the labor market during economic crisis using panel data from the ENEU.

This paper suggests a number of additional areas for future research. First, it is necessary to develop a more detailed and up-to-date understanding of the type of child care used by working women, as well as of the characteristics of women who have access to child care. An issue that deserves further analysis is the extent to which older siblings provide child care and how this affects their school attendance. The impact of different child care strategies on the well-being and development of children is an important and controversial topic that is analyzed in detail in Stern (1996) and deserves further analysis using data developed specifically for this purpose.

In addition, it will be useful to consider a series of econometric refinements to the work presented in this paper that include investigating alternate models of the simultaneous decision-making processes, modifying the specification of the regressors, and analyzing possible identifying variables for the bivariate probit regressions. One particularly interesting refinement that is not possible using the ENEU data is to differentiate between infants and preschool-age children. In particular, the aggregation over ages 0 to 4 years does not identify the probable differential impact of the maternity leave period (typically 0 to 45 days for women working in the formal sector), versus the post-maternity and pre-school period which is (typically 45 days to 4 years). For future work, it should be possible to make use of new data sets that include more detailed information on child care strategies. In particular, child care modules were included in the ENEU in 1994 and 1995. This information should be available to researchers in 1997.

The results of this research suggest the importance of developing policies to provide families with access to non-family child care alternatives as a means of promoting the equitable employment of women as well as high quality care for children. In addition to the points presented below, the policy context of day care is considered in greater depth in Knaul and Parker (1997).

In evaluating existing policies it is first important to recognize that although Mexican women may prefer to rely on family-based child care, many are not able to do so. Further, it is necessary to take into account possible concomitant negative effects in such areas as human capital formation and human development. As suggested by results for Mexico from Hernández and Zetina (1996) and for Colombia by Knaul (1995), youth, and particularly female youth, may become child care providers at a young age. Their role in the provision of child care and housework may come at the expense of their ability to attend school, and to accumulate labor market experience and training. In addition, the alternative of taking children to work has limitations. The workplace, especially if this is the street, is not always an appropriate environment for child care (Hernández y Zetina, 1996).

The current structure of public day care leaves ample room for policy initiatives to expand coverage, improve distribution, reduce costs and diversify services. For example, existing public policies do little to stimulate alternate forms of child care for either the wealthy or the poor through the private sector or at the community level. A number of innovative policies are presently being considered by the IMSS to link private and public provision through employer and community-based plans.

Day care coverage as it is presently formulated is a segmented, and essentially employment-based program for women. Uninsured families, a group that includes informal sector workers, the poor and the unemployed, are excluded from most public day care programs. Changing this would imply a reconceptualization of the goals of current public policy towards considering day care, not only as an employment-based

right in the formal sector, but also as an anti-poverty, child development program. One justification for such an extension is that many women would likely enter the labor market if they knew that they could count on quality, affordable child care. Further, child care may be an important input for job search.

It would be interesting to evaluate the possibility of extending day care by linking it to recent efforts to develop community-based programs and to reduce poverty through targeted social expenditure. If of high quality, mothers may prefer community day care over institutional settings when family members are not available. Low-cost community-based day care programs are being undertaken in a number of Latin American countries. The neighborhood day care programs that have been promoted in Colombia through the Instituto Colombiano del Bienestar Familiar have been highly rated for their low cost, coverage and targeting (Vélez, 1996).

It is important to evaluate the role of male family members in these changing trends in female labor force participation and in the structuring of day care policy. As in most parts of the world, the alternative of equitable male-female participation in the labor force and child care is still far from common or accepted. While there have been some important policy efforts to stimulate the integration of the female into the labor market, parallel policies to integrate the male into the responsibilities of child care and domestic duties are incipient. The right to child care in the formal sector is tied almost exclusively to the labor force participation of women.

Finally, it is also important to consider policies that promote job flexibility, facilitating women's own efforts to combine work and child care. A number of possibilities exist including the provision of employee-based child care, flexible scheduling, job sharing and working from home. In addition to the benefits for families, these policies can result in reduced absenteeism and improved work effort.

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Table 1
Insured Working Women and Day Care Places by IMSS Delegación. June 1996

Delegación	Children aged 0-4 of insured women aged 15-44	Number of day care places	Percentage of day care places per eligible child
Aguascalientes	15,743	817	0.05
Baja California	55,440	3,090	0.06
Baja California Sur	6,583	642	0.1
Campeche	6,157	515	0.08
Coahuila	40,445	2,122	0.05
Colima	6,996	606	0.09
Chiapas	14,835	670	0.05
Chihuahua	71,145	4,448	0.06
Durango	15,263	938	0.06
Guanajuato	37,075	1,182	0.03
Guerrero	19,455	912	0.05
Hidalgo	14,759	836	0.06
Jalisco	88,693	2,910	0.03
México	87,588	2,491	0.03
Michoacán	24,162	1,481	0.06
Morelos	15,878	1,358	0.09
Nayarit	9,009	720	0.08
Nuevo León	67,471	2,026	0.03
Oaxaca	17,023	941	0.06
Puebla	40,750	1,260	0.03
Querétaro	19,514	1,138	0.06
Quintana Roo	10,704	1,028	0.1
San Luis Potosí	21,028	1,076	0.05
Sinaloa	28,841	2,250	0.08
Sonora	34,976	2,710	0.08
Tabasco	13,495	500	0.04
Tamaulipas	48,921	2,153	0.04
Tlaxcala	8,129	490	0.06
Veracruz Norte	33,823	1,229	0.04
Veracruz Sur	15,864	1,194	0.08
Yucatán	17,378	1,582	0.09
Zacatecas	11,789	532	0.05
Total	1,164,446	58,832	0.05

SOURCE: IMSS, 1995.

Table 2

Who Cares for the Children of Working Women

	Primary care giver
The mother herself	19.5
Older siblings	11.8
Husband	4.9
Other unpaid family members and friends	39.6
Institutions	10.0
A paid person	7.9
No one	6.2
n	964

Notes:

^{1/} The question corresponds to: While you work, who is in charge of the care of your children? (space for two possible answers)

^{2/} The sample is restricted to currently working women who consider that their children are young enough to require care, and to urban areas with 20,000 or more inhabitants and cities of 20,000 or more inhabitants.

^{3/} Figures are calculated using expansion factors.

^{4/} Primary care giver is based on the first response to the question regarding who provides care to children.

SOURCE: National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud*), 1987.

Table 3

Choice of Primary Child Care Provider by Education of Mother

	Primary or less	Secondary	Preparatory or vocational	University
The mother herself	66.3	20.0	4.0	9.8
Older siblings	80.9	7.8	--	--
Other unpaid family members and friends	45.1	34.9	9.9	10.1
Institutions	25.7	38.4	21.6	14.5
A paid person	26.4	27.3	23.2	23.1
No one	74.8	20.9	--	--
n	401	286	99	115

Notes:

^{1/} Results for employers and independent professionals are not reported as the sample size is very small. -- indicates sample cell size of less than 10 observations.

^{2/} The sample is restricted to currently working women who consider that their children are young enough to require care, and to urban areas with 20,000 or more inhabitants and cities with 20,000 or more inhabitants.

^{3/} Figures are calculated using expansion factors.

^{4/} Primary care giver is based on the first response to the question regarding who provides care to children.

^{5/} The first figure in each cell gives the row percent. The second figure gives the column percent.

SOURCE: National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud-ENFES*), 1987.

Table 4

Expenditures on Day Care and Pre-School
as a Proportion of Total Family Expenditure
Among Families with Children Aged 0-4 Years

	Among all families	Among families with positive expenditures on day care or pre-school
Day care and pre-school	0.7	4.5
Health	2.7	2.5
n (pooled 1989 and 1992)	4965	722

Notes:

^{1/} Samples are restricted to include only families with children aged 0-4 years and cities of 20,000 or more inhabitants.

SOURCE: National Income and Expenditure Survey (*Encuesta Nacional de Ingresos y Gastos de Hogares-ENIGH*), 1989 and 1992.

Table 5

Labor Force Participation, Formal Sector Employment and Part-Time Work
by Whether a Women Has Children Aged 0 to 11 Years
1987, 1991 and 1995

	Woman has a child 0-11 years	
	Yes	No
<i>1987</i>		
% of women who work	27.4	35.4
% of working women employed in the formal sector	53.0	55.6
% of working women employed part-time	29.8	25.3
<i>1991</i>		
% of women who work	29.0	43.6
% of working women employed in the formal sector	52.4	59.7
% of working women employed part-time	27.5	19.9
<i>1995</i>		
% of women who work	30.7	43.4
% of working women employed in the formal sector	50.8	42.9
% of working women employed part-time	27.8	21.1

Notes:

^{1/} Formal sector is defined to include workers who receive health benefits from their job.

^{2/} Part-time is defined as working less than 30 hours per week.

^{3/} Household heads and spouse aged 16 to 45.

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*), second trimester, 1991.

Table 6
Occupational Choice by Primary Care Giver

	Self-employed	Salaried workers	Domestic servant	Non-remunerated worker
The mother herself	39.2	8.2	15.6	48.6
Older siblings	14.9	10.3	17.7	--
Other unpaid family members and friends	34.9	51.9	40.6	14.9
Institutions	1.0	12.2	7.8	--
A paid person	2.9	11.3	2.2	--
No one	--	5.6	--	--
n	174	611	87	63

Notes:

^{1/} Results for employers and independent professionals are not reported as the sample size is very small. -- indicates sample cell size of less than 10 observations.

^{2/} The sample is restricted to currently working women who consider that their children are young enough to require care, and to urban areas with 20,000 or more inhabitants.

^{3/} Figures are calculated using expansion factors.

^{4/} Primary care giver is based on the first response to the question regarding who provides care to children.

^{5/} The first figure in each cell gives the row percent. The second figure gives the column percent.

SOURCE: National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud-ENFES*), 1987.

Table 7

Primary Care Giver by Hours Mother Works Per Day

	1-4 hours	5-7 hours	8 hours	9 or more hours
The mother herself	22.4	32.1	14.7	30.8
Older siblings	22.2	16.2	13.1	48.5
Other unpaid family members and friends	9.8	25.2	22.1	43.0
Institutions	20.2	30.8	7.3	41.7
A paid person	2.3	36.0	28.2	33.5
No one	6.5	32.3	13.4	47.9
n	141	260	180	375

Notes:

^{1/} The sample is restricted to currently working women who consider that their children are young enough to require care, and to urban areas with 20,000 or more inhabitants and cities of 20,000 or more inhabitants.

^{2/} Figures are calculated using expansion factors.

^{3/} Primary care giver is based on the first response to the question regarding who provides care to children.

^{4/} The first figure in each cell gives the row percent. The second figure gives the column percent.

SOURCE: National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud-ENFES*), 1987.

Table 8

Hours Worked Per Day by Occupational Choice

	Mean	Standard error	n
Employer	8.4	.83	23
Self-employed	7.1	.2	324
Employee	8.4	.05	2580
Domestic Servant	8.8	.14	552
Non-remunerated worker	7.1	.32	149

Notes:

^{1/} Results for independent professionals are not reported as the sample size is very small.

^{2/} The sample is restricted to women with less than university education and cities of 20,000 or more inhabitants.

^{3/} Figures are calculated using expansion factors.

^{4/} The first figure in each cell gives the row percent. The second figure gives the column percent.

SOURCE: National Survey of Fertility and Health (*Encuesta Nacional sobre Fecundidad y Salud-ENFES*), 1987.

Table 9

Means of Dependent and Independent Variables
1987, 1991 and 1995

Variable	1987	1991	1995
% of women who work	27.2%	27.9%	32.7%
Part-time as proportion of all working women	27.2%	25.2%	27.6%
Formal sector as a proportion of all working women	47.5%	48.5%	44.5%

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*), second trimester.

Table 10
 Mean and Standard Deviation of Independent Variables
 1987

Independent Variables	1987	1991	1995
Age	32.5 (7.04)	32.87 (7.05)	33.2 (7.08)
Age squared	1105 (458.8)	1130 (460.5)	1153 (464.6)
Presence of a child 0-4	.36 (.48)	.46 (.5)	.44 (.5)
Number of children 0-4	.13 (.39)	.14 (.4)	.13 (.4)
Number of children 5-8	.44 (.7)	.54 (.71)	.49 (.67)
Number of children 9-11	.33 (.6)	.4 (.62)	.37 (.59)
Educ-less than completed primary, or no education	.48 (.5)	.43 (.5)	.39 (.39)
Educ-completed primary	.07 (.25)	.06 (.22)	.05 (.2)
Educ-at least some secondary	.28 (.45)	.32 (.8)	.34 (.48)
Educ-more than secondary	.11 (.31)	.16 (.36)	.21 (.41)
Presence of mother substitute	.36 (.78)	.36 (.48)	.37 (.48)
Interaction mother substitute with child 0-4	.08 (.26)	.1 (.3)	.09 (.29)
Married	.87 (.34)	.86 (.35)	.89 (.31)
Presence-male with health benefits	.54 (.5)	.51 (.5)	.5 (.5)
Presence-male worker	.93 (.35)	.93 (.25)	.9 (.3)

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*).

Table 11

Probit Estimations of the Probability of Working:
1987, 1991 and 1995
(All women aged 16 to 45)

Indep. Variable	1987	1991	1995
Constant	-1.16 (-15.5)	-1.29 (-18.0)	-.91 (-11.9)
Age	.05 (11.4)	.06 (13.8)	.06 (11.9)
Age squared	-.0007 (-10.3)	-.0009 (-12.8)	-.0008 (-11.1)
Presence of a child 0-4	-.07 (-7.72)	-.13 (-15.7)	-.08 (-8.8)
Number of additional children 0-4	-.06 (-5.80)	-.07 (-7.51)	-.08 (-7.50)
Number of children 5-8	-.04 (-6.76)	-.06 (7.26)	-.04 (-7.0)
Number of children 9-11	-.02 (-2.65)	-.04 (-6.55)	-.02 (-3.31)
Educ-completed primary	.10 (7.25)	.09 (5.96)	-.01 (-1.15)
Educ-some or complete secondary	.16 (19.5)	.14 (18.1)	-.68 (7.07)
Educ-more than secondary	.24 (21.9)	.26 (26.8)	.18 (16.5)
Interaction-mother substitute with small child	.09 (6.23)	.09 (7.58)	.05 (4.08)
Married	-.22 (-22.2)	-.19 (-19.9)	-.45 (-35.3)
Presence-male with health benefits	-.10 (-14.0)	-.11 (-16.6)	-.06 (-8.92)
Presence-male worker	.30 (19.1)	.33 (21.8)	.29 (23.9)
N	19,208	22,357	22,735
Log likelihood	-10,819	-12,691	-13436

Notes:

^{1/} City dummies included in all regressions.

^{2/} The table presents marginal effects evaluated at the mean value of the other independent variables; t-statistics are in parentheses.

^{3/} The excluded category in the education dummies is less than complete primary or no education.

^{4/} Figures are calculated using expansion factors.

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*).

Table 12

Probit Estimations of the Probability of Working in the Formal Sector: 1987, 1991 and 1995
(All women aged 16 to 45)

Indep. Variable	1987	1991	1995
Constant	-.51 (-3.06)	-.47 (-3.11)	-.59 (-4.34)
Age	.03 (3.28)	.03 (3.53)	.04 (4.30)
Age squared	-.0006 (-4.14)	-.0006 (-4.13)	-.0006 (-4.78)
Presence of a child 0-4	-.04 (-2.05)	-.06 (-3.38)	-.03 (-2.08)
Number of additional children 0-4	-.10 (-3.95)	-.09 (-4.13)	-.06 (-3.08)
Number of children 5-8	-.04 (-3.60)	-.07 (-6.86)	-.03 (-3.37)
Number of children 9-11	-.05 (-3.53)	-.06 (-5.11)	-.05 (-4.86)
Educ-completed primary	.27 (9.96)	.20 (7.35)	.09 (4.71)
Educ-some or completed secondary	.38 (22.8)	.29 (19.7)	.32 (18.8)
Educ-more than secondary	.44 (20.3)	.32 (18.8)	.38 (21.2)
Interaction-mother substitute with small child	.06 (1.98)	.04 (1.69)	.01 (.413)
Married	-.05 (-2.69)	-.07 (-4.30)	-.17 (-11.4)
Presence-male with health benefits	.17 (11.9)	.19 (15.1)	.22 (18.3)
Presence-male worker	-.03 (-.666)	-.05 (-1.21)	-.06 (-2.31)
N	5892	7235	8580
Log likelihood	-3425	-4447	-5298

Notes:

^{1/} Formal sector is defined to include workers who receive health benefits from their job.

^{2/} City dummies included in all regressions.

^{3/} The table presents marginal effects evaluated at the mean value of the other independent variables; t-statistics are in parentheses.

^{4/} The excluded category in the education dummies is less than complete primary or no education.

^{5/} Figures are calculated using expansion factors.

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*).

Table 13

Probit Estimations of the Probability of Working Part-Time: 1987, 1991 and 1995
(All women aged 16 to 45)

Indep. Variable	1987	1991	1995
Constant	-.84 (-5.62)	-.55 (-4.23)	-.70 (-5.74)
Age	.03 (3.53)	.00 (.395)	.02 (2.31)
Age squared	-.0004 (-2.82)	.00005 (.421)	-.0002 (-1.66)
Presence of a child 0-4	.05 (3.32)	.08 (5.98)	.03 (2.66)
Number of additional children 0-4	.07 (3.45)	.04 (2.32)	.04 (2.16)
Number of children 5-8	.03 (3.13)	.04 (5.25)	.04 (5.36)
Number children 9-11	.02 (1.43)	.02 (1.89)	.05 (5.33)
Educ-completed primary	-.01 (-2.41)	-.02 (-.740)	-.03 (-1.83)
Educ-some or completed secondary	-.02 (-1.70)	-.02 (-1.74)	-.05 (-3.71)
Educ-more than secondary	-.01 (-.491)	.02 (1.16)	-.01 (-.919)
Interaction-mother substitute with small child	-.07 (-2.67)	-.07 (-3.62)	-.01 (-.607)
Married	.05 (3.28)	.09 (6.51)	.15 (11.5)
Presence-male with health benefits	.01 (.417)	-.00 (-.227)	-.03 (-2.48)
Presence-male worker	-.03 (-.898)	.06 (1.71)	.01 (.348)
N	5892	7235	8580
Log likelihood	-3411	-3996	-4889

Notes:

^{1/} Part-time is defined as working less than 30 hours per week.

^{2/} City dummies included in all regressions.

^{3/} The table presents marginal effects evaluated at the mean value of the other independent variables; t-statistics are in parentheses.

^{4/} The excluded category in the education dummies is less than complete primary or no education.

^{5/} Figures are calculated using expansion factors.

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*).

Table 14

Bivariate Probit Estimates of the Probability of
Working and of Formal Sector Employment
1987 and 1995
(All women aged 18 and over)

Indep. Variable	Employed		Formal sector		Employed		Formal sector	
	1987		1991		1995			
Constant	-3.4 (-15.5)	-3.9 (-11.9)	-3.81 (-19)	-1.93 (-1.57)	-2.39 (-12)	-3.12 (-8.65)		
Age	.16 (11.4)	.16 (8.81)	.18 (14.13)	.11 (2.31)	.15 (12)	.12 (7.87)		
Age squared	-.002(-10.4)	-.003 (-9.13)	-.003 (-13)	-.002 (-2.74)	-.002 (-11)	-.002 (-8.29)		
Presence of a child 0-4	-.21 (-7.94)	-.20 (-5.7)	-.28 (-13.5)	-.19 (-2.21)	-.21 (-8.98)	-.17 (-4.81)		
Number of children 0-4	-.18 (-6.24)	-.28 (-5.62)	-.21 (-8.7)	-.26 (-3.67)	-.20 (-8.5)	-.23 (-5.32)		
Number of children 5-8	-.11 (-6.85)	-.14 (-6.41)	-.17 (-12)	-.19 (-4.7)	-.10 (-7.12)	-.11 (-5.53)		
Number of children 9-11	-.05 (-2.57)	-.11 (-4.25)	-.09 (-6.02)	-.15 (-4.76)	-.05 (-3.34)	-.13 (-5.44)		
Educ-completed primary	.29 (7.34)	.62 (10.7)	.25 (6.3)	.54 (7.25)	-.03 (-1.11)	.16 (3.71)		
Educ-secondary	.46 (19.2)	.90 (16.5)	.40 (18.14)	.79 (12.12)	.18 (7.14)	.72 (11.5)		
Educ-more than secondary	.71 (21.8)	1.2 (19.5)	.74 (26.74)	.91 (6.86)	.46 (16.2)	.98 (18.4)		
Married	.25 (6.18)	.27 (4.84)	.14 (6.56)	.12 (1.82)	.14 (4.09)	.09 (1.89)		
Presence of mother substitute	-.66 (-21.3)	-.47 (-11.5)	-.53 (-19)	-.24 (-2.06)	-1.18 (29.5)	-.84 (-12.4)		
Presence-male with health benefits	-.29 (-14.0)	.08 (5)	-.31 (-17)	.43 (4.08)	-.16 (-9)	.35 (4.64)		

Presence-male worker	.88 (20.9)	.56 (6.6)	.95 (24.14)	.04 (.16)	.77 (27.9)	.33 (3.11)
N	19208	5892	22357	7235	22735	8580
Rho (0,1)	.9 (14.5)		.22 (.63)		.76 (5.54)	
Likelihood	-14242		-17146		-18732	

Notes:

^{1/} Formal sector defined as workers who receive health benefits from their job

^{2/} The excluded category in the education dummies is less than complete primary or no education.

^{3/} Figures are calculated using expansion factors.

SOURCE: National Survey of Urban Employment (*Encuesta Nacional de Empleo Urbano-ENEU*).

Table 15

Bivariate Probit Estimates of the Probability
of Working and of Part-Time Employment
1987 and 1995
(All women aged 18 and over)

Indep. Variable	Employed	Part-time	Employed	Part-time	Employed	Part-time
	1987		1991		1995	
Constant	-3.38 (15.5)	.31 (.09)	-3.71 (-18)	.69 (.23)	-2.39 (-12.09)	-2.99 (-4.39)
Age	.15 (11.37)	-.01 (-.05)	.18 (13.88)	-.07 (-.74)	.15 (11.97)	.09 (2.70)
Age squared	-.002 (-10)	.0002 (.13)	-.003 (-13)	.001 (.99)	-.002 (-11.13)	-.001 (-2.22)
Presence of a child 0-4	-.21 (-7.81)	.24 (4.52)	-.37 (-16)	.38 (3.67)	-.21 (-8.98)	.05 (.98)
Number of children 0-4	-.18 (-6.22)	.27 (5.24)	-.20 (-8.37)	.20 (2.66)	-.20 (-8.47)	.05 (.70)
Number of children 5-8	-.11 (-6.86)	.13 (4.51)	-.18 (-12.8)	.19 (4)	-.10 (-7.10)	.10 (2.86)
Number of children 9-11	-.05 (-2.65)	.06 (2.22)	-.10 (-6.66)	.09 (2.23)	-.05 (-3.31)	.12 (3.87)
Educ-completed primary	.29 (7.19)	-.29 (-3.12)	.25 (5.97)	-.16 (-1.27)	-.03 (-1.14)	-.09 (-2.01)
Educ-secondary	.46 (19.41)	-.29 (-1.43)	.40 (18.12)	-.23 (-1.32)	.18 (7.05)	-.11 (-1.94)
Educ-more than secondary	.71 (21.77)	-.38 (-1.10)	.73 (26.65)	-.27 (-.72)	.46 (16.41)	.06 (.69)
Presence of mother substitute	.26 (6.23)	-.30 (-3.93)	.26 (7.65)	-.31 (-4.17)	.14 (4.09)	-.00 (-.03)
Presence-male with health benefits	-.29 (14)	.16 (1.12)	-.31 (-17)	.13 (.81)	-.16 (-8.91)	-.11 (-2.98)
Presence-male	.88 (20.93)	-.56 (-1.31)	.95 (23.97)	-.30 (-.53)	.77 (28.10)	.22 (1.37)

worker						
Married	-0.66 (-21.2)	.45 (1.70)	-.53 (-19)	.47 (2.85)	-1.18 (-29.43)	.24 (1.30)
N	19208	5892	22357	7235	22735	8580
Rho (0,1)	-.69 (-1.15)		-.60 (-.97)		.36 (1.30)	
Likelihood	-14229		-16686		-18324	

Notes:

^{1/} Part-time is defined as working 30 hours or less.

^{2/} The excluded category in the education dummies is less than complete primary or no education.

^{3/} Figures are calculated using expansion factors.

SOURCE: National Survey of Urban Employment (Encuesta Nacional de Empleo Urbano-ENEU).