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## Mums the Word! Cross-national Effects of Maternal Employment on Gender Inequalities at Work and at Home

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Kathleen L McGinn  
Elizabeth Long Lingo

Mayra Ruiz Castro

Working Paper 15-094



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Kathleen L McGinn  
Harvard Business School

Mayra Ruiz Castro  
Harvard Business School

Elizabeth Long Lingo  
Worcester Polytechnic Institute

**Working Paper 15-094**

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**Mums the Word! Cross-national Effects of Maternal Employment on Gender Inequalities at Work and at Home**

31 July 2015

Kathleen L. McGinn and Mayra Ruiz Castro, Harvard Business School  
Elizabeth Long Lingo, Worcester Polytechnic Institute

**ABSTRACT**

Our research considers how inequalities in public and the private spheres are affected by childhood exposure to non-traditional gender role models at home. We test the association between being raised by an employed mother and adult men's and women's outcomes at work and at home. Our analyses rely on national level archival data from multiple sources and individual level survey data collected as part of the International Social Survey Programme in 2002 and 2012 from nationally representative samples of men and women in 24 countries. Adult daughters of employed mothers are more likely to be employed, more likely to hold supervisory responsibility if employed, work more hours, and earn marginally higher wages than women whose mothers stayed home fulltime. The effects on labor market outcomes are non-significant for men. Maternal employment is also associated with adult outcomes at home. Sons raised by an employed mother spend more time caring for family members than men whose mothers stayed home fulltime, and daughters raised by an employed mother spend less time on housework than women whose mothers stayed home fulltime. Our findings reveal the potential for non-traditional gender role models to gradually erode gender inequality in homes and labor markets.

Keywords: maternal employment; work-family; gender

Across the globe, millions of mothers leave for work each morning wondering whether their children will suffer from the absence of a mother at home. Past research on the association between maternal employment and young children's well-being conclude that the association, when significant, tends to be positive. Relative to children whose mothers stay at home full time, children of employed mothers do as well, if not better, at school, both in terms of academic achievement and in terms of behavior (Lucas-Thompson et al., 2010). But employed mothers often internalize social messages of impending doom for their children, and fathers who choose to emphasize caregiving run up against countervailing social

messages signaling their inadequacy as breadwinners. Pew Research, studying perceptions in 2013 in the US only, found that 51% of male and female respondents believe children are better off if their mother is at home and not employed, while only 8% believe that the same benefit accrues to children whose father is at home and not employed (Pew Social Trends, 2014).

Gender inequality manifests across the globe in private spheres, favoring women as caretakers and homemakers, and in public spheres, favoring men as breadwinners. Inequalities in both spheres reflect individual attitudes and experiences (Moen and Erickson, 1997), intra-household bargaining within families (England, 2005; Miller and Sassler, 2010; Sassler and Miller, 2010), and legal and socio-cultural influences within societies (Chang, 2000; Fuwa, 2004). Scholars seeking to tease out mechanisms for reducing gender inequality have found that gender attitudes, or individually-held beliefs about men's and women's roles in the home and in society, play an essential role (Davis and Greenstein, 2009). Non-traditional, or egalitarian, attitudes are associated with better employment outcomes for women and more gender-equitable division of household labor (Corrigan and Konrad, 2007; Fortin, 2005; Stickney and Konrad, 2007; Vella, 1994).

Policy attention often focuses on beliefs and practices at the national and corporate levels, but gender attitudes are also shaped and refined through discourse and socialization within homes and in families (Beaman, Duflo et al., 2012; Cunningham, 2001; Davis and Greenstein, 2009). Parents transmit gender attitudes to their children, and those gender attitudes, in turn, shape decisions about whom their children marry, whether they are employed outside the home, and their negotiations over household labor (Davis and Wills, 2010; Farré and Vella, 2013; Fernandez, 2004; Johnston, Schurer and Shields, 2014; Moen, Erickson and Dempster-McClain, 1997; Risman, 1998). Parents also act as role models, challenging societal expectations and attitudes about what is possible and desirable (Olivetti, Patacchini and Zenou, 2013), and demonstrating how non-traditional roles might be enacted in practice (Cunningham, 2001).

Despite research that has established the importance of maternal role models on children's gender attitudes and employment outcomes (Davis, 2007;

Davis and Greenstein, 2009; Fan and Marini, 2000), mothers continue to agonize over their decision to leave for work each day. Research is needed that digs much deeper into the question of how this necessity or choice is affecting their children's careers and home lives over the long term. Further, research has yet to explore cross-nationally how working mothers may be associated with an expanded set of gender inequality outcomes, including whether adult children hold leadership or supervisory roles, and the division of both household tasks and care work among men and women.

Our research considers how inequalities in public and the private spheres are affected by childhood exposure to non-traditional gender role models at home – being raised by a mother who was employed, whether full or part time, long-term or short-term, by choice or by necessity. We test the association between raised by an employed mother and adult men's and women's outcomes at work—likelihood of employment, supervisory responsibility, hours worked, and earnings—and at home—hours spent in housework and hours spent caring for family members. Our analyses rely on national level archival data from multiple sources and individual level survey data collected as part of the International Social Survey Programme in 2002 and 2012 from nationally representative samples of men and women in 24 countries in North and South America, Australia, Europe, Asia and the Middle East.

Our findings reveal the power of non-traditional gender role models to gradually erode gender inequality in labor market outcomes. Controlling for individual and family demographics, country-level gender attitudes, and economic and cultural differences across countries, we find that female respondents raised by a mother who worked outside the home are more likely to be employed, more likely to hold supervisory responsibility if employed, work more hours, and earn higher hourly wages than women whose mothers were home full time. With the exception of supervisory responsibility, the association between maternal employment and daughters' labor market outcomes are mediated through gender attitudes; daughters of employed mothers hold more egalitarian gender attitudes, which are in turn associated with these daughters' positive labor market outcomes. The effects of maternal employment on sons' labor market outcomes are non-significant,

suggesting working mothers provide role models that affect their daughters' gender attitudes and choices without corresponding negative effects on their sons' labor market outcomes.

We then turn our analyses to outcomes in the private sphere. Women across the world have increasingly entered the paid workforce, but the parallel increase in men's contributions to unpaid work within households lags behind. Women's entrenched responsibilities for household work constrain their choices in the public sphere (Cunningham, 2008). Men also bear costs from the unequal distribution of household responsibilities; gendered practices and norms in public and private spheres act as barriers to men who want to take on bigger roles at home (Croft et al., 2015). In this domain, non-traditional gender role models are associated with positive outcomes for both men and women. Our analyses find that sons raised by an employed mother are more involved at home as adults, spending more time caring for family members than men whose mothers stayed home fulltime. Daughters raised by an employed mother spend less time on housework than women whose mothers stayed home fulltime, but maternal employment has no effect on adult daughters' involvement in caring for family members.

Our research offers several contributions to our understanding of maternal employment and non-traditional gender role models. Extending past research on parental influence on children's gender attitudes, we find a strong association between maternal employment and adult egalitarian gender attitudes, for both men and women across 24 countries. Second, we show that maternal employment is associated with multiple positive outcomes in the labor market for women only; maternal employment has no significant effects on men's labor market outcomes. Third, we find that outcomes at home also reflect the non-traditional gender role models provided by employed mothers. When we disentangle household care and task involvement, we find that sons raised by employed mothers spend more time caring for family members as adults than sons of mothers who never worked outside the home, and women raised by employed mothers spend fewer hours engaged in housework. Fourth, we show that the association between employed mothers and their children's outcomes is partially mediated by gender attitudes,

suggesting that working mothers shape their children’s aspirations and attitudes, and also demonstrate how to navigate non-traditional roles in practice. In sum, we expose the power of non-traditional gender role models, especially employed mothers, as critical factors for reducing gender inequality in labor markets and households across the globe.

## **ROLE MODELS, GENDER ATTITUDES, AND GENDER INEQUALITIES AT WORK AND AT HOME**

### **Role Models**

As role models, parents can provide evidence of the way things “are” or “can be,” shaping children’s sense of what is possible and desirable in the home and in the labor force, often with more influence than friends, teachers, and other relevant adult role models (Basow and Howe, 1979; Basow and Howe, 1980; Fan and Marini, 2000). Research on the intergenerational transmission of gender attitudes provides evidence that parents play an essential role in shaping their children’s gender attitudes, and, in turn, labor outcomes (Thornton, Alwin & Camburn, 1983). Both parents serve as role models for their children’s careers, but evidence from career role models outside of the home suggests stronger effects for same sex role models (Basow and Howe, 1979; Basow and Howe, 1980). Mothers' and children's gender role attitudes are positively correlated—even when measured 25 years apart (Johnston, Schurer, and Shields, 2014).

Parents’ embodiment of non-traditional gender roles also serves as a resource for role socialization and social learning of the skills and capacities needed when children enact non-traditional gender roles in their adult lives (Bandura, 1977). Analyzing data from a 31-year panel study, Cunningham (2001) suggested that parents provide behavioral role models shaping how their children navigate the division of household labor as adults. Cunningham found that the parental division of household labor (measured when sons were between the age of 1-15) was associated with sons' later participation in routine housework. Mothers’ employment during their daughters' early years was a more important predictor of the allocation of housework among daughters. Cunningham concludes that parental



influences are transmitted partially through the children's gender-role attitudes, but that the modeling and social learning effect on children may have important additional effects, especially for men and household labor.

Taken together, past research suggests that parents who provide non-traditional role models can help reduce gender inequality at work inside and outside the home through two mechanisms. First, non-traditional parental role models foster non-traditional outcomes for their children by shaping attitudes about what is appropriate and desirable. The second mechanism is socialization or social learning; children observe the decisions and behaviors of their parents, learning skills and capacities that can be drawn upon as resources later in life (Bandura, 1977). Parents who take on non-traditional gender roles provide concrete examples of the skills and capacities that their children will need as adults if they, in turn, attempt to navigate non-traditional roles in their own lives (Cunningham, 2001). This second mechanism does not imply scripted responses as adults. Instead, children draw on their childhood experiences and observations as resources when encountering gendered situations and decisions as adults.

### **Gender Attitudes**

Gender attitudes reflect individual's beliefs concerning the relative roles of men and women in society: whether working mothers can have warm and secure relationships with their children; whether family life and children suffer when mothers are employed outside the home; whether women find work in the domestic sphere more fulfilling than work outside the home; and the division of work within these two domains. Gender attitudes vary on a continuum from traditional to egalitarian. Traditional gender attitudes reflect positive beliefs about separate domains for women and men, with women remaining at home while men engage in the labor force. In contrast, egalitarian gender attitudes indicate positive beliefs about permeable gender boundaries around public and private spheres, supporting working women and caregiving men.

Empirical studies have consistently shown positive associations between egalitarian gender attitudes and female employment, work hours and earnings (Corrigall and Konrad, 2007; Davis and Greenstein, 2009). Females' attitudes

towards working women are developed in their youth, at least in part outside the educational process, and traditional gender attitudes result in substantial reductions in their human capital investment, labor supply and rates of return to education (Vella, 1994). Using data from 28 countries, Stickney and Konrad (2007) found that compared to individuals in their own countries, women with egalitarian attitudes had significantly higher earnings than women with traditional attitudes. Similarly, Fortin (2005) found in her investigation of across 25 OECD countries that anti-egalitarian views had a strong negative association with female employment rates and earnings. The relationship between gender attitudes and women's employment outcomes is recursive; women's early gender role attitudes predict their later work hours and earnings, and women's work hours predict their later gender egalitarianism (Corrigall and Konrad, 2007).

More egalitarian gender attitudes have also been associated with more equitable division of household labor, which can include household tasks (cooking, shopping, cleaning) and care of children and parents (Davis and Greenstein, 2009). Researchers have found this relationship across the globe—in Australia (Baxter, 1992), England (Kan, 2008), Germany (Lavee and Katz, 2002), Israel (Lavee and Katz, 2002; Lewin-Epstein, Stier, and Braun, 2006), Sweden (Nordenmark and Nyman, 2003), Taiwan (Hu and Kamo, 2007), and the United States (Bianchi et al., 2000; Coltrane and Ishii-Kuntz, 1992; Cunningham, 2005; Greenstein, 1996a; 1996b), as well as in a number of cross-national studies (Batalova and Cohen, 2002; Davis, 2007; Fuwa, 2004; Nordenmark, 2004). Both men's and women's gender attitudes are important predictors of the division of household labor (Kroska, 2004; Davis and Greenstein, 2009), but women's gender attitudes may be especially important in maintaining more equitable divisions of household labor once couples become parents (Schober, 2011).

## **HYPOTHESES**

Drawing from the literatures on gender role models and gender attitudes, we predict that exposure to non-traditional gender role models during childhood will be associated with adults' non-traditional gender behavior in both public and

private spheres. Specifically, we offer two sets of predictions regarding non-traditional gender outcomes for those raised by employed mothers. The first set proposes direct relationships between employed mothers and their children's outcomes as adults. The second set predicts that these relationships will be mediated by gender attitudes; adult choices at work and at home reflect a strong relationship between a mother's employment and her children's gender attitudes as adults. All predictions hold constant critical individual- and country-level variables.

### **Direct Effects**

Past research on maternal employment and women's work hours suggests that being raised by an employed mother will be associated with employment benefits for adult women (Olivetti et al., 2015). Given strong gender stereotypes compelling men toward paid employment and the pursuit of success in their jobs and careers, we do not expect any association between exposure to non-traditional gender role models during childhood and adult men's behavior in the labor force.

H1a: Adult daughters of mothers who were employed during the daughters' first 14 years are more likely to be employed than adult daughters of mothers who were not employed.

H1b: If employed, adult daughters of mothers who were employed during the daughters' first 14 years are more likely to hold supervisory responsibility than adult daughters of mothers who were not employed.

H1c: If employed, adult daughters of mothers who were employed during the daughters' first 14 years will work more hours per week than adult daughters of mothers who were not employed.

H1d: If employed, adult daughters of mothers who were employed during the daughters' first 14 years will generate greater earnings per hour than adult daughters of mothers who were not employed.

Employed mothers foster egalitarian gender attitudes in their sons and daughters (Johnston et al., 2014). At the same time, because of constraints on their time, employed mothers are less likely than stay-at-home mothers to model housework and caring for family members as distinctive components of women's roles (Cunningham, 2001). We expect daughters raised by employed mothers will

spend less time on housework and less time caring for family members than daughters of stay-at-home mothers. Conversely, we expect sons raised by employed mothers will spend more time on housework and more time caring for family members than sons of stay-at-home mothers.

H2a: Adult daughters of mothers who were employed during the daughters' first 14 years will spend fewer hours per week on housework than adult daughters of mothers who were not employed.

H2b: Adult sons of mothers who were employed during the sons' first 14 years will spend more hours per week on housework than adult sons of mothers who were not employed.

H3a: Adult daughters of mothers who were employed during the daughters' first 14 years will spend fewer hours per week caring for family members than adult daughters of mothers who were not employed.

H3b: Adult sons of mothers who were employed during the sons' first 14 years will spend more hours per week caring for family members than adult sons of mothers who were not employed.

### **Mediated Effects**

Past research has shown a strong positive relationship between employed mothers and egalitarianism in children's gender attitudes (Corrigall and Konrad, 2007; Davis and Greenstein, 2009; Fan and Marini, 2000; Fortin, 2005; Stickney and Konrad, 2007). The full path of relationships between maternal employment, adult gender attitudes and career and home outcomes, however, remains unclear. We expect the associations between being raised by an employed mother and adults' outcomes at work and at home, hypothesized above, are at least partially due to the relationship between being raised by an employed mother and egalitarian gender attitudes as an adult.

H4: The significant relationships between employed mothers and their daughters' employment outcomes (hypothesized in H1a-d) will be mediated by the daughters' gender attitudes as adults.

H5: The significant relationships between employed mothers and the hours their adult children spend on housework and caring for family members

(hypothesized in H2a-b & H3a-b) will be mediated by the children's gender attitudes as adults.

## **METHODS**

### **Data**

Our analyses rely on data from the 2002 and 2012 “Family and Changing Gender Roles” module of the International Social Survey Programme (ISSP). The ISSP, a cross-national collaboration program, designs annual questionnaires across a range of social science topics.<sup>1</sup> Independent organizations in the participating countries collect ISSP data, either separately or as part of on-going national surveys, from representative samples of the country's adult population. Surveys are conducted primarily through face-to-face interviews and self-completion surveys. The data are documented and made available by the Zentralarchiv für empirische Sozialforschung, University of Cologne, Germany. ISSP publishes complete documentation of the randomization procedures, survey protocol and response rates, by country and year, on their website: <http://www.issp.org/>. We complement the ISSP data with national level social and economic indicators collected through The World Bank, United Nations Development Programme (UNDP), and The Fraser Institute archives<sup>2</sup>.

The “Family and Changing Gender Roles” module of the ISSP focuses on attitudes towards gender roles, women's employment, marriage and children, as well as household management and partnership (ISSP Research Group, 2013). The module consists of four surveys from 1988, 1994, 2002, and 2012. Due the low number of countries in the first two surveys, we use data from 2002 and 2012 only. Our analyses are based on data from all countries included in both 2002 and 2012, with the exceptions of Ireland and Bulgaria, because of the lack of data on critical variables. We analyze data from 24 countries including Australia, Austria, Chile, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Israel, Japan,

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<sup>1</sup> Surveys are designed in English and translated into the national language in each participating country.

<sup>2</sup> Accessed on line at <http://www.ilo.org/century/research/archives/lang--en/index.htm> and in hard copy archives, September 2014 through April 2015.

Latvia, Mexico, Norway, Philippines, Poland, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, and the United States. We restricted our sample to working-age respondents, designated as all respondents between 18 and 60 years old. All analyses are run on males and females separately. We excluded cases with missing data on respondent's sex. Number of observations included in each analysis differs due to missing data on critical variables; specifics are presented below.

## **Variables**

### *Outcome variables*

All outcome measures are based on responses to questions on ISSP surveys, 2002 and 2012 (See Appendix A for text of ISSP questions used in the analyses). Our measures of employment outcomes include four variables: Employed, Supervisory Responsibility, Hours Worked, and Z-Income. Our measure of employment is a dummy variable based on respondents' weekly hours worked (Employed = 0 if hours worked equals 0; = 1 otherwise). The number of hours spent in paid work (Hours Worked) ranges from 0 (not in paid work/ unemployed) to 96 hours per week. For our measure of supervisory status, we rely on the survey question asking respondents, if employed, whether they supervise others or are directly responsible for the work of other people (Supervisory Responsibility = 1 if yes; = 0 otherwise). The time frame used in the personal income question varied across countries, either monthly or annual. To create an income measure that is cross-nationally comparable, we log transformed annualized earnings and standardized within each country-year (Z-Income).

Our measures of women's and men's engagement at home distinguish between housework and caring for family members. Our measure of engagement in housework (Hours Housework) is based on responses to the question: "On average, how many hours a week do you personally spend on household work, not including childcare and leisure time activities?" Our measure of engagement in family care (Hours Care) is based on responses to a question included on the survey in 2012 only: "On average, how many hours a week do you spend looking after family members (e.g. children, elderly, ill or disabled family members)?"

Table 1 provides descriptive statistics for our outcome variables, by country, for males and females separately. Unsurprisingly, men dominate women in employment outcomes, and women spend more time than men engaged in work at home. Across the countries we studied, men in our samples are significantly more likely to be employed and to hold supervisory responsibility, if employed. There are two notable exceptions: women and men are equally likely to be employed in our samples from Finland ( $X^2 = 2.44$  ;  $p = .12$ ) and Denmark ( $X^2 = 2.29$  ;  $p = .13$ ); and there was no significant difference in the (un)likelihood of women and men holding supervisory responsibility ( $X^2 = 2.07$ ;  $p = .15$ ) in the Philippines. Within each of the 24 countries studied, male respondents, on average, spent significantly more hours each week on the job and earned significantly higher incomes than female respondents.

Turning to the private sphere, women in every country in our sample report spending significantly more hours engaged in housework than their male counterparts. This significant gender imbalance remains for hours spent weekly in family care, with exceptions in Sweden (1-tailed t-test,  $p = .60$ ) and Mexico (1-tailed t-test,  $p = .13$ ). In spite of the strongly traditional gender attitudes held by respondents within Mexico, discussed below, men and women in the Mexican sample do not differ significantly in the number of hours they report caring for family members weekly.

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Place Table 1 about here

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### *Predictor Variables*

Our primary predictor variables are measures of childhood exposure to non-traditional gender role models and adult gender attitudes. Exposure to non-traditional gender role models during childhood is operationalized through maternal employment (Mother Employed), based on responses to the following question on the ISSP survey: “Did your mother ever work for pay for as long as one year, after you were born and before you were 14?” (Mother Employed = 1 when

the respondent's mother worked before the respondent was 14 years old; 0 otherwise).

Table 2 presents descriptive statistics for Mother Employed and Gender Attitudes, by country, for males and females separately.<sup>3</sup> The likelihood of being raised by a working mother varies widely between countries, ranging from 35% in Mexico to 94% in Latvia. In general, maternal employment during the time respondents were 14 or younger was lowest in the Latin countries and Spain, and highest in post-Soviet block countries.

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Place Table 2 about here  
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Our measure of gender attitudes reflects respondents' views on women's employment and gender roles in the household. The ISSP in 2002 and 2012<sup>4</sup> included two sets of questions about gender attitudes. Items in the first set have been used in previous research on gender attitudes (e.g., Crompton and Lyonette, 2005; Fuwa, 2004; Fuwa and Cohem, 2007; Geist, 2005; Knudsen and Waerness, 2001; Yodanis, 2005). This set includes the following seven questions, measured on a five-point scale from strongly agree (1) to strongly disagree (5):

"To what extent do you agree or disagree...?"

1. A working mother can establish just as warm and secure a relationship with her children as a mother who does not work. (Reverse coded)
2. A pre-school child is likely to suffer if his or her mother works;
3. All in all, family life suffers when the woman has a full-time job.
4. A job is all right, but what most women really want is a home and children.
5. Being a housewife is just as fulfilling as working for pay.

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<sup>3</sup> Mother Employed does not differ significantly by sex of the respondent, with the exceptions of Finland and Poland, where male respondents were more likely to have mothers who were employed ( $X^2 = 4.28$ ,  $p = .04$ ;  $X^2 = 3.11$ ,  $p = 0.08$ , respectively), and the Czech Republic and Austria, where female respondents were more likely to have mothers who were employed ( $X^2 = 3.41$ ,  $p = .07$ ;  $X^2 = 15.01$ ,  $p < .01$ , respectively).

<sup>4</sup> A subset of the questions in the first set were also included in 1988 and 1994 ISSP surveys.



6. A man's job is to earn money, a woman's job is to look after the home and family.
7. Both the man and woman should contribute to the household income."  
(Reverse coded)

The second set includes the following two questions, with responses on a 3-point scale, where 1 = work full-time; 2 = work part-time; 3 = stay home.

"Do you think that women should work outside the home full time, part time, or not at all under the following circumstances?"

1. When there is a child under school age. (Reverse coded)
2. After the youngest child starts school." (Reverse coded)

Exploratory factor analysis of the nine items using principal-components analysis suggested a one-factor solution. The factor loading for the item, "Both the man and woman should contribute to the household income" was unacceptably low (.35), so we omitted the item from our scale. Cronbach's alpha in the confirmatory analyses with the remaining eight items was acceptable (alpha = .78; average inter-item covariance = .39). We used the standardized scale value as our measure, Gender Attitudes. Higher scores reflect a more egalitarian gender attitude.

Consistent with findings from past research (Davis & Greenstein, 2009), men and women differ significantly in their gender attitudes. Within 21 of the 24 countries studied, women report significantly more egalitarian gender attitudes than men, on average. The three exceptions—Japan, Latvia, and Mexico (1-tailed t-tests:  $p = .27$ ;  $p = .51$ ;  $p = .17$ , respectively)—are in countries where both men and women hold strongly traditional gender attitudes.

#### *Control variables*

Individual level controls include age, education, marital status, whether or not there are children living in the household, religion, and employment status (in tests of outcomes at home). We control for age of respondents in years (Age). Because employment outcomes and engagement in household work are likely to be curvilinear with age, we also included Age Squared in our analyses. Human capital investments in education influence outcomes at work and at home (Becker, 1991) and are strongly associated with gender attitudes (Desai, Chugh & Brief,

2014). We therefore control for respondents' education in years, using a continuous variable ranging from 1 to 30 years of schooling (Years of Education).<sup>5</sup> We created a dichotomous variable to control for marital status, based on a categorical response in the ISSP (Married = 1 if married/cohabiting; 0 otherwise). The presence of children in the household is associated with movement toward more traditional gender roles for men and women (Nomaguchi and Milkie, 2003). To control for the presence of children at home, we transformed responses from two survey questions asking (1) how many toddlers and (2) how many children from school age to 17 years live in the household into a dichotomous measure (With Children = 1 if respondent reports any children living at home; 0 otherwise). To control for religion, shown to affect female labor supply decisions and patterns of division of household labor within the family (Lehrer, 1995; 2004), we transformed responses to survey questions on religious affiliations into a categorical variable identifying five major religious groups, plus "other religion" and "no religion" (Religion; Omitted category = "no religion"). In analyses of outcomes at home, we also control for alternative measures of employment status, as described below.

Table 3 presents descriptive statistics for the individual level control variables, omitting the categorical religion variable. Significant within-country differences between female and male respondents on individual level control variables are noted with superscripts. Overall, with the exceptions of Married and Years of Education, male and female respondents differ significantly on the features measured in the individual-level control variables (all  $p < .005$ ). In aggregate, female respondents are slightly younger, more likely to have children at home, less likely to say they do not practice a religion and more likely to say they are Christian. The strength of differences across countries corresponds roughly with identifiable cultural differences, emphasizing the importance of testing for predicted differences within countries, while controlling for differences across countries.

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<sup>5</sup> Respondents could indicate they were "still in school", noting the level of school they were currently attending. Values that indicated respondent was "still at school" were recoded as 11 years for high school and 14 years for college, university and vocational training.

Place Table 3 about here

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With the exception of analyses of Hours Care, which includes only 2012 data, we include four country-year-level measures that capture national level gender and economic conditions where respondents work and live. To control for the overall gender context within each country, we include the Gender Development Index (GDI), a measure that aggregates gender-gaps in life expectancy, education, and incomes. Because the GDI was replaced by a substantially different measure in 2010 (Gender Inequality Index, UNDP 2010), we lag the GDI 5 years prior to the survey dates (i.e, 1997 & 2007). To control for the availability of employment for women, we include a measure of female labor force participation rates in the survey year (World Bank, 2014). The economic indicators we include as controls are each country's gross domestic product (GDP) at purchasing power parity in bn US\$ (EIU, 2014) and the Economic Freedom Index (Gwartney, 2013), each for the survey year. All models control for year of data collection (Year = 0 if 2002; = 1 if 2012).

## **ANALYSES AND RESULTS**

We estimate effects for Mother Employed using two different specifications: 1) linear probability models<sup>6</sup> with country fixed effects and robust clustered standard errors clustered at the country level, allowing random effects for the individual- and country-level predictor variables; and (2) generalized linear mixed models, in which random effects for individual countries and country-level gender attitudes are added to the linear predictions. Fixed effects models estimate and subtract country means from each of the dependent and explanatory variables, allowing us to infer effects for maternal employment more directly. Mixed-models recognize the likelihood of greater similarities within countries than across countries. In our mixed models, we allow country-specific intercepts and country-specific slopes for gender attitudes (i.e. random effects), formally acknowledging the

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<sup>6</sup> We use linear models for all of our outcome variables, including dichotomous variables, to simplify interpretation of the coefficients (Angst & Pischke, 2008). In addition, because our models include multiple dichotomous and categorical variables, logit models often fail to converge.

aggregated effects of individually held attitudes within a society (Fortrin, 2005; Wooldridge, 2003). For simplicity, we report only our fixed effects models in the main presentation of results. We discuss the few meaningful differences across specifications in the section on robustness checks.<sup>7</sup> In practice, both approaches produce nearly identical results.

## **Results**

As shown in Table 2, the likelihood of being raised by a mother who was employed varies widely between countries, but as would be expected, does not differ by sex of the respondent. Men and women do, however, differ significantly in their gender attitudes; women report significantly more egalitarian gender attitudes than men ( $p < .001$ ). With the exceptions of Married and Years of Education, male and female respondents differ significantly on the features measured in the individual-level control variables (all  $p < .005$ ). Female respondents are slightly younger, more likely to have children at home, less likely to say they do not practice a religion and more likely to say they are Christian.

### **Relationship between employed mothers and adult children's gender attitudes**

Our hypotheses predict direct and mediated effects for maternal employment on work and home outcomes. Testing for mediation through Gender Attitudes requires that we first analyze the relationship between adult gender attitudes and maternal employment during childhood. Figure 1 provides a graphic representation of the differences in gender attitudes held by female and male adults raised by a mother who was employed during the respondent's childhood and those raised by a stay-at-home mother, across the 24 countries, before controlling for other individual-level variables.

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Place Figure 1 about here  
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<sup>7</sup> In the two instances where findings from the fixed effects models reported in the results section differ from the results from mixed models, the fixed effects models are more conservative, i.e., the mixed models provide stronger support for our hypotheses.

In linear models predicting Gender Attitudes (standardized), with fixed effects for country, controlling for Age, Age Squared, Years of Education, Married, Children at Home, Religion, Year, and country-level social and economic indicators, the coefficient for Mother Employed is significant for women (N = 20,433; Marginal means = .05 v .24;  $\beta = .19$ ;  $p < .001$ ) and for men (N = 15,185; Marginal means = -.12 v .10;  $\beta = .21$ ;  $p < .001$ ).<sup>8</sup> Adult sons and daughters of employed mothers report significantly more egalitarian gender attitudes than adult children of stay-at-home mothers. This strong association allows us to consider hypotheses 4 and 5, predicting that any significant associations between maternal employment and adults' work and home outcomes will be mediated by the gender attitudes held by adults raised by employed mothers.

### **Relationship between employed mother and employment outcomes**

We estimate the direct and mediated effects of being raised by an employed mother using step-wise regressions. Tables 4, 5 and 6 present the results of our fixed effects models assessing the effects of mother's employment on women's employment outcomes, men's employment outcomes, and men's and women's engagement at home, respectively. The first model in each outcome set assesses the strength of the association between maternal employment and work and home outcomes, controlling for factors at the individual and country level. In the second model in each set, we add gender attitudes to assess whether any significant effects for Mother Employed are mediated by Gender Attitudes.<sup>9</sup>

Hypotheses 1a – 1d predict that women raised by employed mothers will have better outcomes at work than women raised by stay-at-home mothers. Table 4 presents paired step-wise regressions for women's employment outcomes. Models 1 through 9 reveal that daughters raised by mothers who worked for at least a year during the daughter's childhood are significantly more likely to be employed and, if

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<sup>8</sup> Many of our models are conditioned on or control for Employed. Magnitude and significance of effects of Mother Employed on Gender Attitudes are essentially unchanged if we include Employed in the regressions predicting Gender Attitudes.

<sup>9</sup> There are no significant direct effects for Mother Employed on men's employment outcomes, so we do not present step-wise regressions assessing mediation by Gender Attitudes in Table 5.

employed, have a greater likelihood of holding supervisory responsibility, are employed for a higher number of hours weekly, and earn higher incomes.

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Place Table 4 about here

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Model 1 presents the effects for Mother Employed on women's likelihood of employment, with individual and country controls. Being raised by an employed mother is associated with a 4.5 percent increase in adult daughters' likelihood of employment ( $p < .001$ ), providing support for H1a. Model 2, adding Gender Attitudes, reveals that a significant portion of this association is due to the effect of maternal employment on gender attitudes, as predicted in H4. The mediation effect is only partial, however; the coefficient for Mother Employed drops by half but remains significant when Gender Attitudes are included in the regression ( $p = .03$ ). After controlling for the positive association between Gender Attitudes and Employed ( $p < .001$ ), Mother Employed is associated with a 2.25 increase in daughters' likelihood of employment.

Model 3 presents the effects for Mother Employed on women's likelihood of supervising others at work, if employed. Adult daughters of employed mothers are 19 percent more likely to hold supervisory responsibility in their jobs than women raised by stay-at-home mothers ( $p < .001$ ), supporting H1b. Model 4 shows us that this effect remains strong ( $p < .001$ ) with the addition of Gender Attitudes to the model. Though effects for egalitarian Gender Attitudes are positive and significant ( $p < .001$ ), the continued predictive strength of Mother Employed suggests that maternal employment affects daughters' leadership behavior directly, or through some mechanism other than gender attitudes. After controlling for Gender Attitudes, daughters of employed mothers are 16 percent more likely to hold supervisory responsibility than daughters raised by stay-at-home mothers.

Models 5 and 6 present effects of Mother Employed on Hours Worked and Z-Income. Relative to daughters of stay-at-home mothers, women raised by employed mothers spend roughly 45 minutes more at their jobs each week ( $p = .03$ ), supporting H1c. Model 6 reveals significant positive effects for Gender Attitudes on

Hours Worked ( $p = .003$ ), mediating the effect of Mother Employed on Hours Worked ( $p = .07$ ), providing additional support for H4.

Turning to earnings, Models 7 and 8 test effects on annual earnings overall, and Models 9 and 10 consider earnings controlling for Hours Worked. Daughters of employed mothers earn marginally more annually ( $p = .07$ , Model 7), and this effect is fully mediated by Gender Attitudes. Models 9 and 10 show that the effect of maternal employment on annual earnings ( $p = .15$ , Model 9) is largely due to greater time investment by daughters of employed mothers, though Gender Attitudes remains positive and significant after controlling for Hours Worked ( $p < .001$ ).

The models of men's employment outcomes, presented in Table 5, show a completely different pattern of effects from those of women's employment outcomes. As expected, being raised by an employed mother is not significantly associated with any of men's employment outcomes.

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Place Table 5 about here  
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### **Relationship between employed mother and outcomes at home**

Table 6 presents paired step-wise regressions for women's and men's outcomes at home, controlling for Employed.<sup>10</sup> Model 16 presents the effects of maternal employment on women's engagement in housework. As predicted in H2a, the coefficient for Mother Employed is negative and significant ( $p = .04$ ); daughters of employed mothers report spending approximately 35 fewer minutes on housework weekly than daughters of stay-at-home mothers. Model 17 shows that this effect is fully mediated by Gender Attitudes; egalitarian gender attitudes are negatively and significantly related to the amount of time women spend doing housework ( $p < .001$ ) and the coefficient for Mother Employed falls to non-significance when Gender Attitudes are included in the regression ( $p = .18$ ),

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<sup>10</sup> In robustness checks, we replace Employed with Hours Worked in analyses of men's and women's time spent on housework and family care; results in terms of direction and level of significance remain essentially unchanged with the alternate specification for employment.

providing support for H5. Contrary to H2b, however, Mother Employed has no significant effect on the hours men report spending in household work each week.

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Place Table 6 about here

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Models 20 through 23, analyzing hours spent caring for family members weekly, reveal the opposite set of findings. For women, the coefficient for Mother Employed is positive and does not approach significance in either model, though the coefficient for Gender Attitudes is negative and significant ( $p < .001$ ). Sons of employed mothers report spending an extra hour weekly caring for family members, relative to sons of stay-at-home mothers, and the coefficient for Mother Employed is significant ( $p = .20$ ). Gender Attitudes show a positive and marginally significant effect ( $p = .06$ ), partially mediating the effect of maternal employment on sons' engagement in caring for family members. After controlling for Gender Attitudes, Mother Employed marginally increases men's Hours Care by 55 minutes weekly ( $p = .025$ ).

### **Robustness Checks**

To test robustness to alternative specifications, we reran each of the analyses presented in the tables above using generalized linear mixed models (GLMM) with country-specific intercepts and country-specific slopes for gender attitudes. We continue to control for country level maternal employment through Female Labor Force Participation rates, by observation year (World Bank, 2014). We then compared the coefficients for Mother Employed generated by the GLMM models with those from the linear probability models with country fixed effects, reported above. Results across specifications the 23 regressions reported in Tables 3 – 5, are nearly identical. There are no instances in which the direction or significance of the coefficients for Mother Employed was meaningfully different across specifications. In the mediation model of Hours Care for men, the coefficient for Gender Attitudes reached standard levels of significance in the mixed model ( $\beta = .411$ ,  $p = .06$  in the fixed effects model reported above;  $\beta = .416$ ,  $p = .02$  in GLMM).



Though the pattern of results provided in both fixed effects models and GLMM models is entirely consistent with our proposition that employed mothers provide non-traditional gender role models to their children, increasing the likelihood of their daughters' active engagement in the workplace and their sons' active engagement at home, several alternative explanations warrant consideration. One possibility is that mother's employment may simply be a proxy for the local availability of employment opportunities for women. This increased availability for women's employment may be a feature of the place and era in which children were raised (and subsequent path dependency; see Goldin and Olivetti (2013) on employment trends after WWII). A related possibility, suggested by recent research, is that women's employment reflects female employment within childhood networks, not just within childhood homes; Olivetti and her colleagues find that adult women's hours of paid work varies with the employment hours of their childhood friends' mothers (Olivetti et al., 2015). Some combination of dates, geography and exogenous shocks in female labor force participation could explain some of our results. While we do not have data at the local community level, we can test whether our measure of Mother Employed is capturing effects due to "local" female labor force participation at the country level. To test this possibility, we collected data on female labor force participation rates from 1942 to 2008 from International Labour Organization, The World Bank and individual countries' archives, by country.<sup>11</sup> We first reran our analyses replacing our measure of Mother Employed with average country-level female labor force participation rates during the years respondents were 0 to 14 years old (mirroring years reflected in our mother employed measure).<sup>12</sup> The effects for average female labor force participation rates are similar in direction but significantly weaker than those

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<sup>11</sup> In all analyses, we limit observations to respondents aged 18 to 60 years old. To map our measure of female labor force participation onto the years of maternal employment used in our analyses, we averaged female labor force participation rates across the years each respondent was 0 – 14 years old, 1942 to 2008.  $1942 = (2002 [\text{date of oldest survey}] - 60 \text{ years} [\text{age of oldest respondents}])$ ;  $2008 = \text{year when respondents who were 18 in 2012 were 14 years old}$ . Data for individual Soviet countries in our sample were not available before 1992, so analyses including female labor force participation rates do not include Latvia, Slovenia, Slovakia or Russia.

<sup>12</sup> Note that current (i.e., 2002 & 2012) levels of Female Labor Force Participation within country are included as a control in all regressions, except in the 2012-only analyses of Hours Care.

obtained with Mother Employed. We ran another set of analyses including both Mother Employed and average female labor force participation rates during childhood in our regressions. Effect sizes for Mother Employed are smaller when the broader measure of women's employment during childhood is included, but the pattern of effects is identical and significance rates for mother employed are consistent with those from the full analyses reported above. We tentatively conclude that our effects are not due to Mother Employed being a proxy for exposure to or conditions associated with more generalized levels of female employment during childhood.

In another version of the time and place explanation, our measure of maternal employment could reflect the reality that mothers are more likely to be employed in urban settings, and adult offspring, who tend to live close to the location in which they were raised, are also more likely to be employed in urban settings. If so, our findings—at least those for daughters' employment outcomes—may reflect location similarities between mothers and their daughters, rather than role modeling. To test this possibility, we reran our analyses on the subset of observations in our sample where surveys included questions about respondents' communities,<sup>13</sup> adding a 0/1 variable set to 1 if the respondent lived in an urban or suburban community (Urban). The effects for Urban are significant in a number of the models, but the effects for Mother Employed, and the partial mediation of those effects through Gender Attitudes, remain essentially unchanged from those in the main analyses reported above.

Another possible account for our results is that employed mothers reflect households in which women, including daughters, are favored overall and men, including sons, suffer. If so, women raised by employed mothers may simply fare better across life and men raised by employed mothers may simply fare worse across life than their peers raised by stay-at-home mothers. Our pattern of results does not provide support for this conjecture. Relative to men raised by stay at home mothers, men raised by employed mothers are more involved with their families

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13 The question about community type that provided the data for our measure of "Urban" was not asked in the 2002 surveys in Israel, Germany, Poland and Russia.

while not differing significantly in any of the employment outcomes we investigated. Past research has found that men consider their relationships with their children as better markers of success than their employment related outcomes (Davis & Greenstein 2009; Coltrane 1998, Gerson 1993, Hochschild & Machung 1989). In additional tests, we found that both sons and daughters raised by employed mothers have significantly more years of education than children of stay-at-home mothers (marginal effect = .4 years for sons and daughters, both  $p < .001$ ), controlling for all of the individual and country level control variables discussed above. Though our effects suggest otherwise, we opted to explore the possibility that daughters benefit broadly and sons suffer broadly when raised by employed mothers, by analyzing effects on self-reported overall happiness. The ISSP included a question asking respondents, on a 7-point scale (1 = “completely happy”; 7 = “completely unhappy”), “If you were to consider your life in general, how happy or unhappy would you say you are, on the whole?” In regressions including all of the controls used in our primary analyses,<sup>14</sup> the coefficient for Mother Employed never approaches significance ( $p > .50$  for women;  $p > .20$  for men). We reran these regressions replacing “Employed” with Z-Income and effects for Mother Employed remain non-significant. We conclude that the argument that there is a generalized benefit for daughters raised by an employed mother and the reverse for sons is not a convincing explanation for our findings.

The last possibility we considered draws from past research on the effects of maternal employment on sons’ spouses’ employment. Fernandez et al. (2004) offer a convincing model and empirical support across three US-only data sets, concluding that sons raised by mothers employed outside the home are more likely to be married to women who work outside the home. If this is the case across the 24 countries we study, our findings for men’s involvement in caring for family members may be due to their wives’—rather than their mothers’—employment. The ISSP in 2002 and 2012 included a question asking the number of hours the respondent’s spouse/partner worked per week. In step-wise linear regressions

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<sup>14</sup> Effects for fixed and mixed-model regressions are essentially identical.

controlling for country fixed effects, Mother Employed is a strong predictor of sons' spouses' likelihood of employment ( $p < .001$ ); Gender Attitudes are also a strong, positive predictor of Spouse Employed for men ( $p < .001$ ), but Mother Employed remains strongly significant ( $p < .001$ ) after Gender Attitudes are added to the regression. Perhaps unsurprisingly, there is no effect for maternal employment on daughters' spouses' likelihood of employment ( $p = .86$ ). We therefore reran all of the analyses on men's work and home outcomes, controlling for Spouse Employed. The results from these analyses show that maternal employment is still a significant predictor of men's involvement in family care (Hours Care; Mother Employed.  $p = .006$ ) after controlling for Spouse Employed. In all other analyses of men's outcomes, the coefficient for Mother Employed remains at essentially the same levels of non-significance as those reported above.

While we cannot rule out other explanations and endogeneity threats are inherent in cross-sectional survey data, we conclude that our interpretation of our findings – employed mothers provide non-traditional gender role models that influence their children's outcomes as adults, at work and at home—are robust.

## **DISCUSSION AND CONCLUSION**

Mothers' employment during their sons' and daughters' childhood years remains a lightning rod for emotional debate and policy discourse. In this paper, we shed light on the long-term relationship between maternal employment and children's outcomes as adults—at home and in the labor force. Analyzing ISSP survey data from 24 countries in 2002 and 2012, we find that adult daughters of employed mothers are more likely to be employed than adult daughters of mothers who stay home full time when their children are young. When employed, adult daughters of employed mothers work more hours, are better compensated, and are more likely to hold supervisory positions than daughters of stay-at-home mothers. At home, adult daughters of employed mothers do fewer hours of housework each week. Maternal employment has no significant association with the time women spent caring for family members, controlling for employment or hours spent on the job. For sons, the pattern is very different. Adult sons' employment outcomes are

essentially unassociated with maternal employment, but sons of employed mothers spend more time caring for family members than adult sons of stay-at-home mothers.

The pattern of findings across women's and men's work and home outcomes, across 24 countries, offers strong support for our proposition that employed mothers provide non-traditional gender role models for their children. We suggest that having a non-traditional role model—employed mothers—shapes adult outcomes through two mechanisms. The first is through transmitting more egalitarian gender attitudes, or beliefs about behaviors that are “right” and “normal” for men and women. We see evidence of this in our mediation analyses: adult children of employed mothers have significantly more egalitarian gender attitudes than adult children of mothers who stayed home full time; in turn, gender attitudes partially or fully mediate the relationship between maternal employment and adults daughters' likelihood of employment, hours worked, earnings, and hours spent on household work each week.

Yet gender attitudes only partially mediate, or do not mediate at all, several of the relationships we explored in our analysis. Maternal employment remains a marginally significant predictor of women's likelihood of employment and hours worked, even after controlling for adult gender attitudes. Furthermore, the relationship between mothers' employment and the likelihood that women will hold supervisory responsibility remains strongly significant when gender attitudes are included in the regression. These findings suggest that in addition to transmitting gender attitudes across generations, mothers' employment teaches daughters a set of skills that enable greater participation in the workforce and in leadership positions. The children of working mothers observe the decisions and behaviors of their parents, learning skills and capacities that they can draw upon as resources as they navigate gendered situations and decisions later in life (Bandura, 1977; Cunningham, 2001). We speculate, but cannot test directly, that mothers who are employed may be passing information to their daughters about important skills for exercising power and navigating career systems outside the home. We also see the possibility of a social learning effect at play with regard to the increased number of

hours sons of employed mothers spend on care work — gender attitudes do not mediate this effect.

Our work contributes to a building body of research that explores the effects of maternal employment on their children's well-being. We extend this demonstration to the long-term impact on children—as adults—and also examine their self-reported happiness. Taken together, our findings provide an important counterpoint to persistent beliefs and rhetoric that employed mothers are “abandoning their children” and negatively affecting their families and society over the long term. We find that being raised by a mother who works outside the home has no effects on adult daughters' or sons' self-reported happiness. But positive associations abound at work and at home. Adult daughters of employed mothers benefit in the workplace relative to adult daughters of stay-at-home mothers, while spending less time on housework and roughly the same amount of time caring for family members (even controlling for the extra hours the adult daughters of employed mothers spend in paid employment). Further, we see that adult sons of employed mothers spend more time caring for family members than adult sons of stay-at-home mothers.

Our research also may help reinforce calls for national and local policies supporting parental employment. Our findings suggest that policy should focus on supporting mothers who work—part time or full time. Providing quality and reasonably-priced child care is an important factor, but policy makers should also address workplace policies that hinder or assist parental employment. Such policies can range from addressing the culture of excessive work hours that drives parents—both men and women—out of the workplace (Cha, 2010; Reid and Ely, 2015), to workplace practices that allow more women to pursue their career aspirations (Gerson, 2011; Ramarajan, McGinn & Kolb, 2015).

Future work on non-traditional gender role models and gender inequality at work and at home could build upon our research in several ways. First, more in-depth data collection and analysis of the actual division of labor, discourse, and negotiations among parents and children over time is needed. For example, drawing from an in-depth interview-based panel study, Cunningham (2001)

demonstrated that sons' time spent on household tasks as adults is associated with having a father who was more engaged in at home. Our data does not allow us to disentangle whether men's increased care work is driven by observation and modeling of fathers' contributions to homes where mothers are employed (Davis and Wills, 2010). Future research could also build on analyses that have focused on individuals' gender attitudes as they consider or transition into parenthood (Bass, 2014; Schober, 2013), or how couples divide the work of household management (Treas and Tsui-o Tai, 2012). As the number of hours spent on domestic work decreases globally, we need a better understanding of the dynamic and fluid nature of work conducted by all family members and the long-term impact on work outcomes within and outside the home. Finally, future research on employed mothers as role models should also consider the larger cultural, social, and economic contexts in which gender is negotiated and enacted in practice. This may include family and friend networks (Olivetti, Patacchini, and Zenou 2013) or differences across countries in gender attitudes or social welfare policies (e.g., Bittman et. al., 2003; Batalova and Cohen, 2002; Fuwa, 2004; Hook, 2006).

Over the last twenty years, there have been many studies exploring the effects of employed mothers on their children's well-being. The consistent takeaway across these studies is that young children of employed mothers are higher achieving and have fewer behavioral problems than young children whose mothers are not employed. These effects are strongest for children from low income families (Lucas-Thompson, Goldberg and Prause, 2010). Work by economists has shown positive effects of maternal employment on women's work hours (Olivetti et al., 2015) and on sons' support of wives' employment (Fernandez et al., 2004). But negative stereotypes persist. Our findings add new challenges to stereotypes about employed mothers "harming" their children.

We hope the findings from our research will promote respect for the spectrum of choices women and men make at home and at work. Whether Moms or Dads stay at home or are employed, part time or full time, children benefit from exposure to role models offering a wide set of alternatives for leading rich and rewarding lives. Giving children opportunities to see and know people—men and women—making

lots of different choices at work and at home will help children see lots of options for success in their own lives at work and at home.

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**Figure 1.0** Women's and men's gender attitudes, by maternal employment, no controls.

