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Evidence from Firm Data

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Abstract

For a sample of 53 developing countries, the results show that women's employment among private firms is significantly higher in countries that mandate paternity leave

versus those that do not. A conservative estimate suggests an increase of 6.8 percentage points in the proportion of women workers associated with the mandating of paternity leave.

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Does Paternity Leave Matter for Female Employment in Developing Economies? Evidence from Firm Data

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1. Introduction

Governments have grappled with policies to improve women's job market prospects. Of late, the spotlight has turned to paternity leave. Two articles in the media (*Fortune*, February 2015;¹ *The New York Times*, November 2014²) highlight the potential benefits of paternity leave, including better job prospects for women. However, the discussion on paternity leave in the informal and formal literature is restricted to developed countries. Do paternity leave laws exist in developing economies? If so, can we uncover any relationship with employment outcomes?

The formal empirical literature suggests two mechanisms for the impact of paternity leave on employment of men and women. First, employer attitudes may change. That is, if a particular position requires investment in job training, employers may discriminate against women, anticipating frequent absence due to child birth and child rearing activities. However, if paternity leave allows men to spend more time outside employment, assuming considerable uptake of paternity leave, this may limit discrimination against women. Second, Becker (1985) indicated that significant changes in the household's time allocation can be achieved by minor changes in initial conditions. Therefore, changing the allocation of labor via paternity leave could change the trajectory of women's time spent on market activities. Empirical evidence on the impact of paternity leave on women's employment is mixed. For example, while Amarson and Mitra find a positive impact in Iceland, other studies find no such impact (see for example, Cools et al. 2015, Rege and Solli 2013, Ekberg et al. 2013 and Mansdotter et al. 2007).

The present study extends the above literature to the case of developing countries. Using a cross-section of firm-level survey data for private firms in 53 developing countries, the study finds

¹ <http://fortune.com/2015/02/01/paternity-leave/>

² http://www.nytimes.com/2014/11/09/upshot/paternity-leave-the-rewards-and-the-remaining-stigma.html?_r=0

that the proportion of women in total workers for a typical firm increases by as much as 6.8 percentage points (against a mean of 32 percent women workers) when we move from a country that does not mandate paternity leave to a country that does.

2. Data and Main Variables

Our main data source is the World Bank's Women, Business and Law (for year 2010) and a stratified random sample of firms in 53 developing countries (Enterprise Surveys, World Bank). Enterprise Surveys were conducted in various countries between 2006 and 2013 by the World Bank using a common questionnaire and sampling methodology, and are representative of the non-agricultural and non-financial registered private sector of the economies. Note that each firm has only one observation in the sample.

Our dependent variable is the proportion of all permanent full-time workers at the firm that are women (*Women workers*). The mean value of the variable is 0.32 and the standard deviation equals 0.27. Across countries, the variable ranges between 0.03 (Pakistan) and 0.51 (Belarus). Note that *Women workers* is a relative measure and hence our results are immune to spurious correlations due to factors that affect men and women employment equally. However, our results are qualitatively similar even if we use the absolute number of women workers at the firm.

Our main explanatory variable, *Paternity Leave*, equals 1 if the country has laws mandating paid or unpaid paternity leave and 0 otherwise. The data source for the variable is WBL (year 2010). There are 22 countries in our sample that mandate paternity leave while the remaining 31 do not.

Since *Women workers* varies at the firm level and *Paternity Leave* at the country level, the reverse causality problem is unlikely to affect our results much, although it cannot be ruled out

completely. For the omitted variable bias problem, we control for a large number of variables. These variables are motivated by existing literature on the determinants of women's employment and are as follows: industry fixed effects to capture segregation of workers by gender across industries; year fixed effects to capture global shocks to women's employment in the year the firm was surveyed; overall economic development or GDP per capita (constant 2001 prices, taken from WDI); firm's age (logs) and firm-size (total employees, logs) as proxy measures of various firm attributes; percentage of firm's output that is exported and percentage of firm owned by foreigners to capture the impact of globalization on women's employment; two dummy variables indicating if the top manager of the firm is a woman and if the firm has a woman owner, to capture possible discrimination by men vs. women employers against women employees; a dummy variable indicating if the firm provides training, which is particularly important for women who lag behind in technical expertise; a dummy variable indicating if the firm suffered losses due to crime, as women may be particularly sensitive to crime; current state of labor markets proxied by the growth rate of GDP per capita (average over last three years, taken from WDI); ratio of female to male primary enrollment rate and the same for secondary enrollment, to capture the impact of education attainment on job prospects (average over last three years and taken from WDI); supply side effects captured by the proportion of women in the total adult population and fertility rates (taken from WDI); culture, proxied by the percentage of the population that is Catholic, Muslim and Protestant (omitted category is all other religions, data source is La Porta et al. 1999); political empowerment, captured by the proportion of women in the lower house (*Women in Parliament*, taken from Inter Parliamentary Union); structural factors affecting job availability for women vs. men, proxied by the percentage share of agriculture and manufacturing in total value added (taken from WDI); burden of care provision on women, proxied by the proportion of the population that has access to

sanitation (taken from WDI); other gender specific laws in the WBL database including whether or not a married woman can choose where to live in the same way as a man does, whether or not the government supports childcare, whether or not law mandates break time for nursing mothers, whether or not non-pregnant and non-nursing women can work the same night hours as men and do the same jobs as men, whether or not parents are entitled to flexible time schedules, whether or not the law mandates equivalent positions to women on their return from maternity leave, and the number of days of maternity leave (paid and unpaid) mandated by the law (henceforth, *Other WBL laws*).

3. Empirical results

OLS regression results are provided in Table 1. These results show a large positive relationship between paternity leave and the share of women workers. The relationship is statistically significant at the 1 percent level and this holds irrespective of the controls in place. Quantitatively, without any other controls, the estimated coefficient value of paternity leave equals 0.068 (column 1). This implies an increase of 6.8 percentage points in the share of women workers for a typical firm (against the mean of 32 percent) associated with mandating of the law on paternity leave. This positive relationship becomes only stronger when we control for the variables discussed above (columns 2 to 8). For instance, with all the controls discussed above included in the specification, the estimated coefficient value of parental leave law equals 0.074 (column 8). A few points should be noted. First, controlling for *Other WBL laws* hardly changes our results (column 7 vs. column 8). This raises our confidence that our paternity leave variable is not a proxy for other gender specific differences in the laws. Second, controlling for overall economic development does cause the estimated coefficient value of the paternity leave variable to decline but the decline is not

drastic (from .087 in column 2 to .079). Third, industry fixed effects seem to matter somewhat for our main results in the sense that, controlling for these causes the estimated coefficient value of paternity leave variable to increase from .068 (column 1) to .083 (not shown, significant at 1% level). However, controlling for all the other variables discussed above does not matter much, with the estimated coefficient value of the paternity leave variable declining only modestly to .074 (column 8). Last, as expected, *Women workers* is higher and significantly so (at 5% level or less) for firms with a woman owner, top woman manager, presence of foreign owners and exporting activity of the firm. Similarly, some of the macro controls such as GDP per capita, share of women's population and secondary enrollment ratio also show positive correlations with *Women workers* but these correlations are not too robust perhaps due to the high correlation between the various macro variables.

Conclusion

Using firm-level data for 53 developing countries, we find a strong positive relationship between the provision of paternity leave and women's employment. A number of issues remain to be answered. For example, does the provision of paternity leave affect women's employment equally or differently across all types of firms and developing countries? Are paternity and maternity leave substitutes or complements for women's employment? Why do some countries have paternity leave and others do not? We hope that future research will help answer these and related questions.

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Table 1: Base regression results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Paternity Leave</i>	0.068*** (0.024)	0.087*** (0.022)	0.080*** (0.022)	0.077*** (0.019)	0.082*** (0.018)	0.085*** (0.015)	0.079*** (0.017)	0.074*** (0.013)
Industry fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income (logs)			0.031** (0.012)	0.032*** (0.011)	0.015 (0.017)	0.019 (0.019)	-0.007 (0.028)	0.008 (0.027)
<i>Employment (logs)</i>			-0.002 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.000 (0.004)	-0.001 (0.005)	-0.003 (0.004)
Age of the firm (logs)			0.002 (0.006)	0.002 (0.006)	0.005 (0.006)	0.004 (0.006)	0.006 (0.005)	0.007 (0.005)
Firm's exports (% of sales)				0.033 (0.021)	0.036 (0.021)	0.034* (0.020)	0.035* (0.020)	0.042* (0.021)
% of firm owned by foreign entities				0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)
Firm has a woman owner				0.045*** (0.008)	0.041*** (0.008)	0.038*** (0.008)	0.038*** (0.008)	0.036*** (0.008)
Top manager is a woman				0.157*** (0.012)	0.151*** (0.012)	0.149*** (0.013)	0.150*** (0.013)	0.150*** (0.013)
Firm provides training				0.018* (0.011)	0.015 (0.010)	0.010 (0.009)	0.012 (0.009)	0.011 (0.008)
Firm experienced losses due to crime in the last year				0.010 (0.013)	0.006 (0.013)	0.001 (0.012)	0.003 (0.012)	0.003 (0.011)
Women's population (% of total population)					0.019** (0.007)	0.021*** (0.007)	0.017** (0.007)	0.008 (0.006)
Fertility rate (%)					-0.008 (0.014)	0.008 (0.016)	0.005 (0.016)	0.005 (0.017)
Growth rate (% , annual)					0.004 (0.003)	0.005* (0.003)	0.005* (0.003)	0.003 (0.002)
<i>Primary Enrollment</i>						0.000 (0.002)	-0.000 (0.002)	-0.002 (0.003)
<i>Secondary Enrollment</i>						0.002** (0.001)	0.001 (0.001)	0.002* (0.001)
% of population that is Catholic						-0.000 (0.000)	-0.001* (0.000)	-0.000* (0.000)
% of population that is Muslim						0.001 (0.000)	0.000 (0.000)	0.000 (0.000)
% of population that is Protestant						-0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)
Women in Parliament (%)						0.000 (0.001)	0.000 (0.001)	0.001 (0.001)
Agriculture (% share in value added)							-0.002 (0.002)	-0.001 (0.003)
Manufacturing (% share in value added)							-0.002 (0.002)	-0.002 (0.001)
Sanitation							0.001 (0.001)	0.000 (0.000)
<i>Other WBL laws</i>								Yes
Adjusted R ²	0.017	0.151	0.161	0.236	0.248	0.258	0.260	0.276

Standard errors in brackets. *** (1%), ** (5%), * (10%). All regressions use a constant term. Sample size is 33,302 firms.