The Empirical Economics Letters, 15(11): (November 2016) ISSN 1681 8997

An Exploratory Empirical Note on the Relationship between Local Labor Market Freedom and the Female Labor Force Participation Rate in US Metropolitan Areas

Crystal Wong

Department of Economics, National Tsing Hua University of Taiwan
Hsinchu City, Taiwan

Dean Stansel*

Cox School of Business, Southern Methodist University
Dallas, TX 75033, USA

Abstract: Using a new local-level index of economic freedom, we provide the first examination of the relationship between labor market freedom (LMF) and the female labor force participation rate (FLFPR) that focuses on local labor markets, where there are fewer unmeasurable differences between jurisdictions, rather than nations or states. Our results indicate that the relationship between the LMF and FLFPR is positive and statistically significant across multiple specifications. A one-standard deviation increase in the LMF was associated with a 1.2-2.0 percent increase in the FLFPR. These findings imply that women may be disproportionately harmed by government interventions in labor markets.

Keywords: Economic Freedom, Labor Market Freedom, Female Labor Force Participation Rate, Female Earnings Opportunities

JEL Classification Number: J21; J22; P19

1. Introduction

The female labor force participation rate (FLFPR) in the United States has experienced a secular increase over time, rising from about 60% in 1970 to a peak of 67% in 2000 (BLS, 2014). Economic freedom in the U.S. was also increasing over that period, rising from a score of 7.6 in 1970 to a peak of 8.65 in 2000 (Gwartney et al., 2014). It is only a recent phenomenon that female labor force participation has begun to level off or even decline (Hotchkiss, 2006). Economic freedom has also declined in the U.S. since 2000. This paper examines whether there is an empirical relationship between economic freedom and the FLFPR.

Traditionally women have often specialized in home production and men in market work. Throughout history women have thus often been in a disadvantaged position in the labor

*Corresponding Author. Email: dstansel@smu.edu

market relative to men as a result of the long-rooted gender roles in households.[1]That typical gender division of labor within households has resulted in married women often accumulating more household skills that may not translate well to labor market opportunities, but less human capital of high value in labor markets. In the context of labor market freedom, one key factor that reduces freedom is the enforcement of minimum wage laws. A well-known consequence of the minimum wage is that it increases unemployment of low-skilled and non-unionized workers. When employers can be more selective in employment as a result of the excess supply of labor under more restrictive minimum wage laws and other labor policies, women may be less likely to be employed relative to men given their lower quantity of human capital. This could discourage female labor force participation. Conversely, an increase in labor market freedom (LMF), for example through a reduction or repeal of the minimum wage, would be expected to have the opposite effect.

This study is motivated by a concern that women may be disproportionately harmed by government interventions in labor markets. Cebula and Alexander (2014) provided the first examination of the relationship between LMF and the FLFPR. Using data for U.S. states, they found a statistically significant positive relationship. We build on that initial framework by using data for local labor markets (U.S. metropolitan areas)and by expanding the number of control variables. The advantage of using local data (compared to states and nations) is that metropolitan area borders are less arbitrary, there are fewer differences across jurisdictions that are difficult to quantify, and there is a larger sample size. Our results also indicate a positive relationship between LMF and FLFPR, suggesting that reducing government interventions in labor markets may have a positive impact on women.

2. Methods

Following Cebula and Alexander (2014) , we perform the regression model as:

$$lnFLFPR_{m,r} = \beta' lnLMF_{m,r} + \alpha' X_{m,r} + \gamma_r + \epsilon_{m,r} \quad (1)$$

where $\ln FLFPR_{m,r}$ denotes the natural logarithm of the female labor force participation rate in metropolitan area *m* in region *r*. $\ln LMF_{m,r}$ is the natural logarithm of the labor market freedom index. $X_{m,r}$ is a vector of our metropolitan area demographic controls described in the next section, γ_r denotes the regional division fixed effect, and $\epsilon_{m,r}$ is an iid error term.

[1] Some point to the substantial gender wage gap and alleged discrimination against women in the labor market as evidence of this (see for example Goldin, 1986; Blau & Ferber, 1987; Lazear & Rosen, 1990).

3. Data

Cebula and Alexander (2014) used a state-level index of economic freedom (see Stansel et al., 2014 for most recent edition). That measure contains three components: 1) size of government, 2) takings and discriminatory taxation, and 3) labor market freedom. Because their dependent variable relates to labor markets, Cebula and Alexander (2014) focus exclusively on the third area. We follow that same approach, using a local index of economic freedom (Stansel, 2013), which contains those same three components. Our hypothesis is that when labor market freedom increases, female workers will face fewer obstacles in the labor market, therefore the female labor force participation rate will increase. Since our LMF data is for 2002, we use FLFPR data for 2003 (thereby employing a one-year lag, as did Cebula and Alexander (2003)).

We use data from the IPUMS Current Population Survey in 2003 to construct all of the control variables that Cebula and Alexander (2014) used: average annual earnings of employed females age 16 and over, percentage of female population 16 and over that are married, percentage of females age 16 and over that have at least a high school diploma, female unemployment rate, and the percentage of the female population age 65 and over. We replicate their state-level analysis with our local-level data. Then we expand on that by including two additional controls (also from IPUMS): the average annual spousal income of married women and the percentage of population that is African-American, as well as regional dummy variables.[2]

Female earnings and female labor force participation rate are likely to be simultaneously determined, which would lead to biased estimates. Therefore, instead of controlling for the average annual real earnings of employed females age 16 and over, as in Cebula and Alexander (2014), we control for the average annual spousal income of married women.[3] The African-American population share is included because the labor supply responses of African Americans exhibit quite different patterns from their white counterparts. For instance, the effect of the presence of children on the labor supply of African-American women is much less pronounced than for white mothers (Bell, 1974; Lehrer, 1992). We include regional dummies to capture regional-level characteristics that affect FLFPR but are difficult to measure.

---

[2] The regional divisions are: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific Division.
[3] However, our results do not change very much when we use this alternative variable.

4. Results

The first column in Table 1 provides the estimate using Cebula and Alexander (2014)'s specification.[4] We find a positive and statistically significant relationship between LMF and FLFPR, as we do in columns (2) and (3) where we include additional control variables. Considering that the mean and standard deviation of the LMF index are 6.67 and 1.248 respectively, a one-standard deviation increase in the LMF from the mean, which corresponds to a 18.7 percent increase, would increase FLFPR by 1.2-2.0 percent.[5] Our results for the control variables used by Cebula and Alexander (2014) largely confirm their findings. The two exceptions are that we find the average annual earnings of employed females to be negatively and statistically insignificantly associated with the FLFPR (as opposed to positive and highly significant) and the female unemployment rate to be positive and insignificant[6] (rather than negative and weakly significant). We also find that

Table 1: Economic Freedom and Female Labor Force Participation Rate

	ln(FLFP)	ln(FLFP)	ln(FLFP)
Independent Variables:	Cebula and Alexander (2014) model	Our model	Our model
ln(labor mkt. freedom)	0.063***	0.077***	0.105***
ln(average annual earnings of employed females 16 and over)	-0.016		
ln(% of females 16 and over that are married)	-0.169***	-0.211***	-0.206***
ln(% of females 16 and overwith at least a high school diploma)	0.594***	0.585***	0.517***
Female unemployment rate	0.273	0.257	0.340*
ln(% of females who are age 65 and over)	-0.136***	-0.137***	-0.149***
ln(average spousal income of married women)		0.005	-0.023
African-American population share		-0.084	-0.033
Regional Division Dummies			Yes
Constant	-2.399***	-1.032***	-0.769**
R^2	0.442	0.448	0.525

Notes:N = 222. ***, ** and * indicate statistical significance at 1%, 5% and 10% levels respectively. The regressions are weighted by the metropolitan area population.

[4] All the variables are in logarithm forms except for two controls: the female unemployment rate and the African-American population share, which are zero for some small metropolitan areas. Using logarithm forms of these variables would reduce our sample size. However, the results are insensitive to using the original form or logarithm forms of these variables.

[5] Stated differently, a 1% increase in local LMF was found to be associated with a 0.063-0.105 percent increase in the FLFPR, which is somewhat smaller than the increase found by Cebula and Alexander (2014) with state-level data.

[6] We do find weak statistical significance when the regional dummies are included.

the percentage of females over 65 was highly statistically significant rather than not significant (we both found a negative relationship). Neither of our new control variables -- spousal income of married women and African-American population share -- were found to have a statistically significant relationship with FLFPR. The results for the former are consistent with empirical studies that suggest a sharp decline in the cross wage elasticity of the labor supply of married women in recent decades (see Blau and Kahn 2005).

5. Concluding Remarks

Results indicate that the positive relationship between LMF and FLFPR found by Cebula and Alexander (2014) is robust to a change in the unit of analysis from state to metro area as well as to the inclusion of additional demographic controls and regional dummies. Our findings imply that women may be disproportionately harmed by government interventions in labor markets. This has important implications for contemporary public policy debates.

References

Aidt, T.S., and B. Dallal, 2008, Female voting power: the contribution of women's suffrage to the growth of social spending in Western Europe (1869–1960), Public Choice, 134(3-4), 391–417.

Becker, G.S., 1981, A Treatise on the Family, Harvard University Press.

Bell, D., 1974, Why participation rates of black and white wives differ, Journal of Human Resources,9(4), 465–479.

Bertocchi, G., 2011, The enfranchisement of women and the welfare state, European Economic Review, 55(4), 535–553.

Blau, F.D., and M.A. Ferber, 1987, Discrimination: empirical evidence from the United States, The American Economic Review, 77(2), 316–320.

Blau, F.D., and L.M. Kahn, 2005, Changes in the labor supply behavior of married women: 1980-2000, NBER Working Papers, No. w11230, National Bureau of Economic Research.

Blau, F.D., and L.M. Kahn, 2013, Female Labor Supply: Why is the US Falling Behind? NBER Working Papers, No. w18702, National Bureau of Economic Research.

Bureau of Labor Statistics, 2014, Labor Force Statistics from the Current Population Survey, http://data.bls.gov/timeseries/LNS11300000, Accessed on 10/30/14.

Cebula, R.J., and G. Alexander, 2014, An exploratory empirical note on the impact of labor market freedom on the female labor force participation rate in the US, Applied Economics Letters, forthcoming.

Edlund, L., and R. Pande, 2002, Why have women become left-wing? The political gender gap and the decline in marriage, Quarterly Journal of Economics, 117(3), 917–961.

Goldin, C., 1986, The earnings gap between male and female workers: a historical perspective, NBER Working Papers, No. w1888, National Bureau of Economic Research.

Goldin, C., and S. Polachek, 1987, Residual differences by sex: perspectives on the gender gap in earnings,The American Economic Review, 77(2), 143–151.

Gwartney, J., R. Lawson, and J. Hall, 2014, 2014, Economic Freedom Dataset, published in Economic Freedom of the World: 2014 Annual Report. Vancouver: Fraser Institute.

Hotchkiss, J.L., 2006, Changes in behavioral and characteristic determination of female labor force participation, 1975-2005, Economic Review-Federal Reserve Bank of Atlanta, 91(2), 1–20.

Johnson, W.R. and J. Skinner, 1986, Labor supply and marital separation, American Economic Review, 76(3), 455–469.

Lazear, E.P., and S. Rosen, 1990, Male-female wage differentials in job ladders, Journal of Labor Economics, 8(1), S106–S123.

Lehrer, E.L., 1992, The impact of children on married women's labor supply: Black-white differentials revisited, Journal of Human Resources, 27(3), 422–444.

Lott, J.R., and L.W. Kenny, 1999, Did women's suffrage change the size and scope of government? Journal of Political Economy, 107(6), 1163–1198.

Smith, J.P., and M. Ward, 1989, Women in the labor market and in the family, The Journal of Economic Perspectives, 3(1), 9–23.

Stansel, D., 2013, An economic freedom index for U.S. metropolitan areas, Journal of Regional Analysis and Policy, 43(1), 3–20.

Stansel, D., J. Torra, and F. McMahon, 2014, Economic freedom of North America 2014, Vancouver: Fraser Institute.

Weitzman, L., 1985, The Divorce Revolution: The Unexpected Social and Economic Consequences for Women and Children in America, Free Press.