Appendix A: the relationship between marriage and labor force participation

A large number of factors influence individuals' decisions to enter the labor force at various points in their lives as they assess the expected return to market work relative to non-participation. Individual characteristics, such as gender, educational attainment, previous occupation and household structure would clearly shape that decision, as these determine potential earnings in the marketplace relative to the return to household work.

In addition, labor market programs, institutions and non-economic factors that govern individuals' prospects of finding (or retaining) a job and the relative benefit from working can also affect participation behavior. Some of these policies, such as the tax-benefits system, directly impact the incentives to supply labor, while others, such as wage setting institutions, can shape supply indirectly through reduced labor demand. For example, an increase in the labor tax wedge could reduce the incentives to work or seek employment, both by reducing net wages and suppressing labor demand by firms due to the increase in labor costs. Conversely, active labor market programs that support jobseekers in finding vacancies may induce individuals to join the labor force and prevent those who temporarily lose employment from becoming permanently detached (Francesco Grigoli, Zsoka Koczan, and Petia Tapalova, 2018).

Using a sample of 283,866 prime working-age women (25-54) taken from IPUMS-CPS years 2011-2019, we estimate the importance of a marriage penalty in determining whether or not a woman is in the labor force. The use of micro data allows us to explore individual and household-level determinants of participation. It also mitigates the endogeneity bias arising from omitted variables and reverse causality in regressions that rely on aggregate data.

Table A1: Descriptive statistics

Variables	States with a tax penalty for working spouses	States without a tax penalty for working spouses
Labor force participation (%)	76.85	76.90
Married (%)	55.26	55.76
No college(%)	33.52	34.56
Some college experience (%)	53.25	53.01
Post-graduate experience (%)	13.24	12.43
Metro area residence (%)	87.32	86.11
Race - White (%)	72.02	77.54
Race - Black (%)	15.31	13.81
Race - other (%)	12.67	8.65
Median age	42	42
Observations	98,476	185,390

The states with a marriage tax penalty include: California, Georgia, Maryland, Minnesota, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Rhode Island, South Carolina, Vermont, Virginia, Wisconsin. Kentucky had a marriage penalty until 2018. North Carolina had a marriage penalty until 2013. Maine had a marriage penalty in 2017 only.

Formally, we estimate logit models of the following form:

$$\Phi(P_i = 1) = \beta^X X_i + \beta^M M_i + yr_t + state + \epsilon_j$$

Where Φ is the probability function; P is a dummy variable for whether the individual i is in or out of the labor force. X includes the set of individual characteristics such as age, age squared, race, their highest level of completed education and whether an individual lives in a metro area. M is a dummy variable for whether the individual is married. We also include year and state-fixed effects. We cluster standard errors at the state-year level. We estimate these models separately for states that feature a marriage penalty in the tax code and those without the tax penalty.

Table A2-A3: Married women are less likely to be in the labor force than single women everywhere. However, the negative relationship between marriage and labor force participation is stronger in states that have a marriage penalty written into the income tax code.

Determinants of being in the labor force

Variables	States with a tax penalty for working spouses	States without a tax penalty for working spouses
Marriage	**-0.28 *** (0.037)**	**-0.24 *** (0.022)**
Age	0.04 *** (0.009)	0.06 *** (0.008)
Age squared	-0.0006 *** (0.0001)	-0.0008 *** (0.0001)
Race - White	0.22 *** (0.038)	0.26 *** (0.035)
Race - Black	0.23 *** (0.06)	0.28 *** (0.040)
Some college	0.80 *** (0.018)	0.75 *** (0.015)
Post-BA education	1.34 *** (0.036)	1.37 *** (0.027)
Metro area resident	0.10 *** (0.03)	0.03 (0.018)
Number of observations	98,476	185,390

Source: Authors' calculations. The table reports exponentiated coefficients. All specifications include state and year fixed effects. Standard errors are clustered at the state-year level. ***, **, * indicate statistical significance at 1, 5 and 10%, respectively.

Marginal effects show the change in probability when the predictor or independent variable increases by one unit. For binary variables, the change is from 0 to 1, so one "unit" as it is usually thought. **In states with an income tax penalty for working spouses, marriage is associated with a 4.2 percentage points lower likelihood of labor force attachment.**

Variables	Full sample
Marriage * state income tax penalty	**-0.042 *** (0.006)**
Age	0.006 *** (0.001)
Age squared	-0.0009 *** (0.0001)
Race - White	0.04 *** (0.004)
Race - Black	0.05 *** (0.006)
Some college	0.14 *** (0.002)
Post-BA education	0.22 *** (0.003)
Metro area resident	0.01*** (0.003)
Number of observations	283,866

Source: Authors' calculations. The table reports marginal effects. All specifications include state and year fixed effects. Standard errors are clustered at the state-year level. ***, **, * indicate statistical significance at 1, 5 and 10%, respectively.