Motherhood, Migration, and Self-Employment of College Graduates

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Motivation and Prior Literature

- Labor outcomes for many women are strongly tied to past, present, and future motherhood.
- Migration of married couples is largely driven by husbands' job opportunities and can negatively impact women's labor outcomes.
- Migration can reduce access to childcare (Compton and Pollak 2014).
- Self-employment often allows more flexible work hours.
- We are interested in how these factors interact.

Research Questions and Contribution

- How do motherhood and migration **"affect"** self-employment and hours worked for college-graduate married women?

- We provide **descriptive** evidence on the interaction of motherhood, migration, and self-employment.
  - Prior studies examine two of the three factors but not all three (competing or complementary investments?).
  - We focus on college graduates.
  - We examine the extensive and intensive margins.

Data

- We use a pooled cross-section of microdata from the 2014-2016 American Community Survey (ACS).
  - The ACS is administered to an independently drawn one percent sample of the U.S. population each year.

- We focus on married women ages 25-59 with a bachelor's degree or higher (born in the U.S.).

Extensive Margins

- Probit estimation:
  - Whether a woman is self-employed (SE).
  - Whether a woman is in paid-employment (PE).
  - Estimated unconditional on LFP/employment status.

$$P_i = \Pr(y_i = 1|X) = \Phi(Z_i)$$
$$Z_i = \beta_0 + \beta_1 x_{1i} + \cdots + u_i$$

Intensive Margins

- Log hours worked by self-employed and paid-employed separately:

$$ln(hours\ worked) = X\beta + \varepsilon$$

- Control for selection via the Heckman two-step procedure.
  - 1st Stage: Probit predicting SE or PE
  - 2nd Stage: Estimate model above for those in SE or PE with correction from 1st Stage (inverse Mills ratio)
  - Requires factor affecting SE/PE but not hours worked.
    - We utilize college major categories.
    - We are more confident in this exclusion for the self-employed.

Explanatory Variables of Interest

- Age of youngest child (at home) by category: ages 0-4, ages 5-12, and ages 13-18.
  - Omitted category is no children under 18 at home.
- Whether a woman lives in her birth state.
- Whether she lives in her spouse's birth state.
- Predicted spousal income

$\ln(income) = f$(age, education level, **college major**, race/ethnicity, survey year, state/country of birth, spouse residence in birth state)

Explanatory Variables (Controls)

- Quartic specification of age
- Dummy variables for:
  - Education level
  - Race/ethnicity
  - Survey year
  - State of birth
  - College Major (only for SE and PE; not for hours)

Interpretation of Birth-State Residence Effects

- State of birth dummies net out effects of common factors that influence all married mothers from a given birth state.

- Thus, our results compare mothers residing in their birth state to mothers born in the same state but residing outside the state.

- Estimates are expected to be "directionally consistent" if decisions to move are primarily based on husbands' employment opportunities.

- Mechanisms: childcare access, job networks, job matching?

Notes on Estimation

- Since spousal income is predicted, we bootstrap the standard errors.

- We report average marginal effects for the probit models.

Table 1: Sub-Sample Means for Primary Variables

	(1) Currently Married	(2) Married & Youngest Child 0-4	(3) Married & Youngest Child 5-12	(4) Married & Youngest Child 13-18
Self-employed	0.074	0.064	0.079	0.081
Paid-employed	0.775	0.741	0.758	0.771
Own birth-state residence	0.541	0.573	0.551	0.538
Spouse birth-state residence	0.513	0.535	0.520	0.511
Predicted spouse log income	11.107	11.060	11.215	11.227
Log hours of self-employed	3.225	2.959	3.157	3.258
Log hours of paid-employed	3.601	3.552	3.549	3.586
N	408,387	96,190	93,973	55,996

Note: Our analytical sample is limited to married women ages 25-59, born in the United States, and whose highest education is a bachelor's degree or higher.

Figure 1: Hours Worked Distribution for Married Women in Self-Employment and Paid-Employment

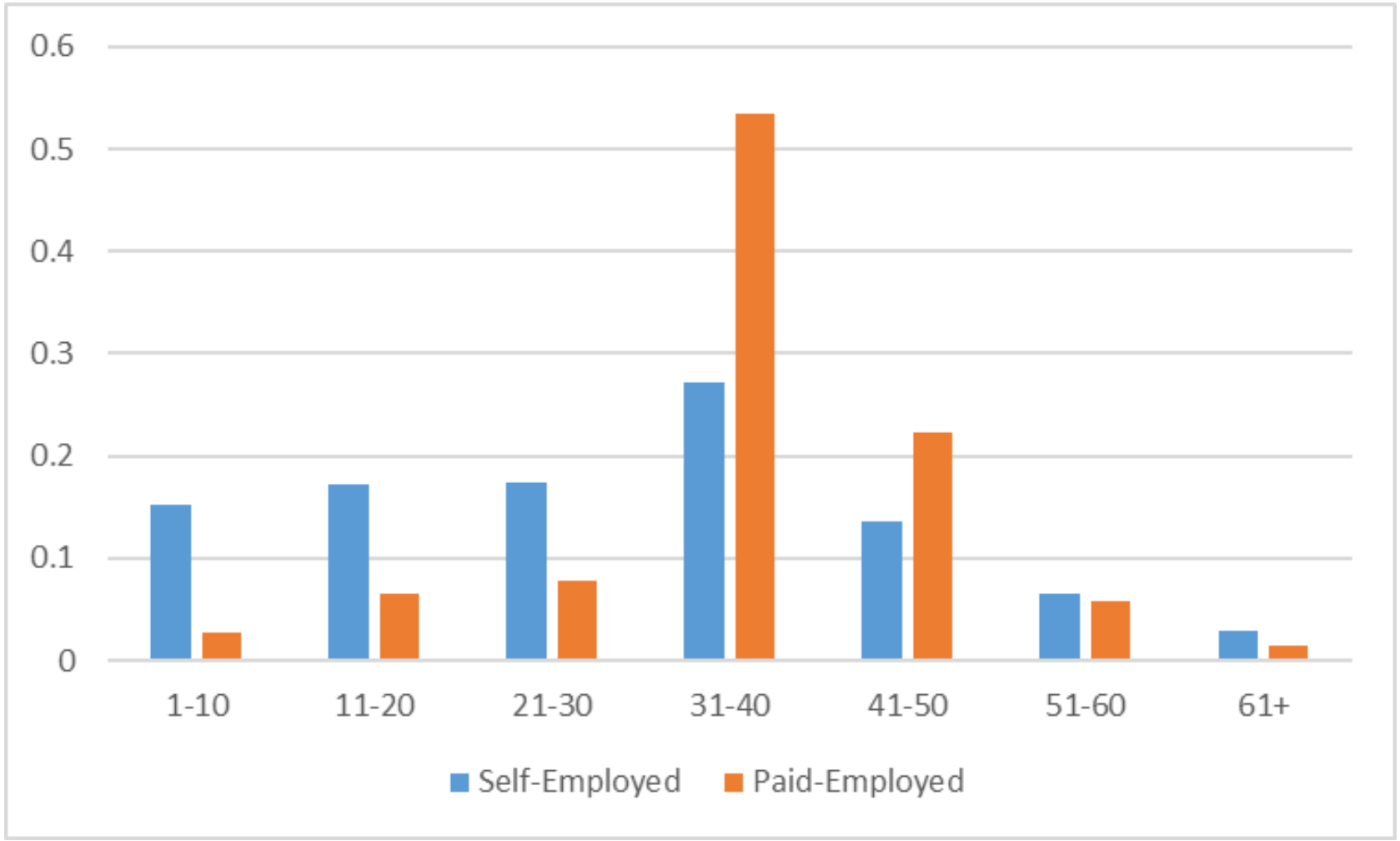

Table 2: Results for the Sample of All Married Female College Graduates

	(1) Probability of Self-Employment	(2) Probability of Paid-Employment	(3) Hours Worked in Self-Employment	(4) Hours Worked in Paid-Employment
Youngest Child 0-4	0.012***	-0.173***	-0.495***	-0.113***
	(0.001)	(0.002)	(0.017)	(0.004)
Youngest Child 5-12	0.009***	-0.096***	-0.293***	-0.119***
	(0.001)	(0.002)	(0.013)	(0.003)
Youngest Child 13-18	0.000	-0.028***	-0.156***	-0.071***
	(0.001)	(0.002)	(0.011)	(0.003)
Own birth-state residence	-0.009***	0.036***	0.050***	-0.009***
	(0.001)	(0.001)	(0.010)	(0.002)
Spouse birth-state residence	-0.006***	0.025***	0.027***	-0.003
	(0.001)	(0.001)	(0.008)	(0.002)
Predicted spouse log income	0.015***	-0.111***	-0.177***	-0.069***
	(0.001)	(0.002)	(0.014)	(0.004)
Coefficient on the inverse mills ratio			-0.000	-0.192***
			(0.028)	(0.016)
N	408,387	408,387	408,387	408,387

Results Summary: All Married Women

- Young children:
  - Increase the probability of self-employment.
  - Decrease the probability of paid-employment.
  - Decrease hours worked in both SE and PE, with larger effects in SE.

- Living in her birth state or that of her spouse:
  - Decreases the probability of self-employment.
  - Increases the probability of paid-employment.
  - Increases hours worked in self-employment.
  - May slightly decrease hours worked in paid-employment (???).

- Higher predicted spousal incomes:
  - Increase the probability of self-employment.
  - Decrease the probability of paid-employment.
  - Decrease hours in SE and PE, with larger effects in SE.

Table 3A: Probit Results for Self-Employment by Age of Youngest Child

	(1) Married & Youngest Child 0-4	(2) Married & Youngest Child 5-12	(3) Married & Youngest Child 13-18
Own birth-state residence	-0.007***	-0.011***	-0.008***
	(0.002)	(0.002)	(0.002)
Spouse birth-state residence	-0.006***	-0.008***	-0.003
	(0.002)	(0.002)	(0.002)
Predicted spouse log income	0.010***	0.016***	0.018***
	(0.002)	(0.003)	(0.004)

Table 3B: Probit Results for Paid-Employment by Age of Youngest Child

	(1) Married & Youngest Child 0-4	(2) Married & Youngest Child 5-12	(3) Married & Youngest Child 13-18
Own birth-state residence	0.051***	0.045***	0.027***
	(0.003)	(0.003)	(0.004)
Spouse birth-state residence	0.038***	0.026***	0.020***
	(0.004)	(0.003)	(0.004)
Predicted spouse log income	-0.148***	-0.168***	-0.150***
	(0.004)	(0.004)	(0.003)

Table 4A: Heckman Results for Log Hours Worked in Self-Employment by Child Age

	(1) Married & Youngest Child 0-4	(2) Married & Youngest Child 5-12	(3) Married & Youngest Child 13-18
Own birth-state residence	0.114***	0.032	0.035
	(0.026)	(0.024)	(0.025)
Spouse birth-state residence	0.011	0.055***	0.051*
	(0.025)	(0.021)	(0.028)
Predicted spouse log income	-0.274***	-0.237***	-0.220***
	(0.028)	(0.021)	(0.029)
Coefficient on the inverse mills ratio	0.042	0.060	-0.079
	(0.068)	(0.063)	(0.072)

Table 4B: Heckman Results for Log Hours Worked in Paid-Employment by Child Age

	(1) Married & Youngest Child 0-4	(2) Married & Youngest Child 5-12	(3) Married & Youngest Child 13-18
Own birth-state residence	0.005	-0.005	-0.002
	(0.005)	(0.004)	(0.006)
Spouse birth-state residence	0.007*	-0.001	0.003
	(0.004)	(0.005)	(0.005)
Predicted spouse log income	-0.072***	-0.125***	-0.122***
	(0.009)	(0.011)	(0.010)
Coefficient on the inverse mills ratio	-0.099***	-0.193***	-0.165***
	(0.033)	(0.040)	(0.036)

Results Summary: By Age of Youngest Kid

- Living in her birth state:
  - Decreases SE probability for all groups of mothers.
  - Increases PE probability for all groups of mothers.
  - **Increases hours worked in SE with small kids.**
  - Has no meaningful effects on hours worked in PE.

- Living in her spouse's birth state:
  - Decreases SE and increases PE similar to own birth state.
  - Has minimal effects on hours in SE with young kids.
  - Increases hours in SE with older kids.
  - Has no meaningful effects on hours worked in PE.

Conclusion

- Family migration alters support networks for married mothers and affects employment and self-employment outcomes.
- Self-employment can offer flexibility to help balance work and family.
- Policies that increase formal childcare access would likely increase paid-employment, but the effects on self-employment would likely differ along the extensive and intensive margins.
- If self-employment fuels economic growth, there may be benefits from helping more skilled mothers pursue self-employment, especially among those unlikely to work in paid employment. More research is needed.

Thank you!