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'Women's labour force participation and household technology adoption'

Technology transformed household productivity and leisure in the twentieth century. Spurred by the near universal installation of running water and electricity in the first half of the century, Americans purchased electrical appliances, such as refrigerators, washing machines, and vacuum cleaners, extensively in mid-century. Concurrently, millions of women entered the formal workforce driven by the needs of wartime factories, increases in education, and changing fertility and social norms. Large scale labor force participation boosted women's incomes and reduced domestic work by women in their own homes, all at a time when employment in paid domestic work was decreasing.

We examine how women's employment leads to household technology adoption in the context of mid-century United States. Using World War II factories to instrument for female labor demand, we find that a standard deviation rise in women's labor force participation increases appliance ownership by 0.5 standard deviations. This result holds in both cross-sectional and panel estimates, and for two different technologies (washing machines and refrigerators). The relationship between women's employment and appliance ownership varies with the prevalence of children, as well as earnings capacity, suggesting important heterogeneity in household technology adoption.

We examine several reasons why increased female labor force participation affects household technology adoption. One straightforward explanation is an income effect. Women's employment increased household income, so appliances became affordable for more households. A related hypothesis is that earning independent incomes increased women's bargaining power compared to men. Insofar that household technology eased their burdens more than men's, women were more likely to advocate buying appliances compared to other goods. Consistent with these hypotheses, we find that women's employment is associated with higher household incomes. Moreover, we find that the effect of women's employment on washing machine adoption in 1960 is strongest in counties with household income below the national median in 1950. That is, low earnings capacity households are most likely to purchase appliances when women go to work. Another important channel affecting household technology adoption is through the availability of paid domestic services. Our findings show that counties with a decrease in the availability of domestic services (and hence a higher price of domestic labor) experience greater adoption of refrigerators between 1940 and 1950, with the largest effects for higher earnings capacity households. Finally, we rule out other potential channels, including the role of more information about appliances, easier access through retail stores and migration to places where appliances are cheaper or more useful as factors in household appliance adoption when women's employment expands.

Together, the evidence suggests that women's employment is a catalyst for household technology adoption, rather than a consequence of it.