The Household Revolution: Child-care, House-work, and Female Labor Force Participation*

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Abstract

Home production has changed dramatically during the course of the 20th century: Labor saving technologies, from running water to modern appliances, have substantially reduced the time demands of home production. In 1890 in the United States only 24% of households had running water and only 8% had electricity; in 1950, these figures were 83% and 94%, respectively. By 1950, a majority of households also had indoor bathrooms and modern appliances such as stoves, electric irons, vacuum cleaners, refrigerators and washing machines.

In an influential paper Greenwood, Seshadri and Yorukoglu (2005) suggest that the household technology revolution played an important role in increasing female labor force participation rates during the 20th century. Like Greenwood *et al.*, we take as given both the secular decline in the price of durable goods as well as observed increases in the female wages relative to male wages. We have two features missing from their work. First, we include child-care since the bulk of the increase in female labor force participation was due to married women. Child-care can be produced using either primary care time (time spend exclusively with children, like teaching, reading and playing), and secondary child-care time (time spent doing other activities, such as preparing dinner and doing the laundry). Second, we use a life-cycle model in which households live several periods. Consequently, we are able to address not only time series variation in female labor market participation, but also how these patterns differ by age, over time.

While house-work is produced using both time and durable goods, child-care is produces using primary and secondary care time. Since house-work and child-care are, to some extent, joint products, the household technology revolution leads to potentially interesting interactions between house-work and child-care. In particular, labor-saving devices may reduce the amount of time spent doing house-work, and so the amount of secondary child-care time. Since children require a fixed amount of child-care services, this reduction in secondary child-care time necessitates an increase in primary child-care time. The net effect of labor-saving devices on female labor market participation is not obvious.

To get some feel for the relative importance of time in producing child-care services, consider Canada in the 1980s: A couple with least one child under the age of five spent 4.1 hours in primary

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care and 12.3 hours in secondary care (see Harvey, Marshall and Frederick, 1991). The model is calibrated to reproduce observed time allocations between house-work, child-care and market work in the early part of the century and is used to examine the impact on the labor market participation of different cohorts of women of: (1) the decrease in the price of durables, (2) the rise in the relative wage of women, and (3) changes in fertility.

Many researchers studying time-use data have argued that the effect of the revolution was qualitative and compositional rather than time saving. Vanek (1973) argued that improvements to household technology did not translate in a substantial reduction in housework because households substituted away from paid help, and the standard for hygiene and cleanliness increased (see also Ramey and Francis, 2005; Mokyr, 2000). Housework went from being hard physical labor to being lighter but time-consuming, with more time spent in activities such as shopping for different types of foods and products, cooking better meals, etc. Bryant (1996) reports that total housework chores occupied 7.35 hours a day in 1925 and 6.31 in 1968, not a large decline.

Nonetheless, changes in the nature of housework afforded women with greater discretion over the amount of time spent on housework. This allocation of time clearly responded to changes in women's market opportunities and age of their children: A study by Robinson and Converse (see Vanek, 1973) reported that in 1965-1966 employed and currently married women with no children devoted 23.4 hours a week to house-work while non-employed married women with no children devoted 45.2 hours to housework.

The household revolution could therefore explain the important increase in labor force participation rates between 1940 and 1960 for women 35 years and older. During these two decades participation rates for women under 35 actually declined, but that of older women with school age children increased substantially. Can the model also explain the important increase in female labor force participation rates in the 25-34 age group during the 1970s? This group increased their labor participation rates by 31% between 1960 and 1980 (see Smith and Ward, 1985). Between 1960 and 1970, the labor force participation rates of women with children under 6 went from 19% to 31% (Census data).

References

Bryant, W. Keith (1996). "A Comparison of the Household Work of Married Females: The Mid-1920s and the late 1960s," *Family and Consumer Sciences Journal*, 24 (4): 358–384.

Greenwood, Jeremy, Ananth Seshadri and Mehmet Yorukoglu (2005). "Engines of Liberation," *Review of Economic Studies*, 72 (1): 109–133.

Harvey, Andrew S., Katherine Marshall and Judith A. Frederick (1991). *Where Does Time Go?*, Ottawa: Statistics Canada.

Mokyr, Joel (2000). "Why Was There More Work for Mother? Technological Change and the Household, 1880-1930," *Journal of Economic History*, 60 (1): 1–40.

Ramey, Valerie A. and Neville Francis (2005). "A Century of Work and Leisure," Working Paper 12264, National Bureau of Economic Research.

Smith, James P. and Michael P. Ward (1985). "Time-Series Growth in the Female Labor Force," *Journal of Labor Economics*, 3 (1 Part 2): S59–S90.

Vanek, Joann (1973). *Keeping Busy: Time Spent in Housework, United States, 1920–1970*, Ph.D. thesis, The University of Michigan.