



Immigration at the Extremes of the Skill Distribution

Rubén Hernández-Murillo, *Senior Economist*
Christopher J. Martinek, *Senior Research Associate*

A common concern about immigration is the extent to which foreign-born workers affect the real wages of U.S.-born workers.¹ Immigration may also generate effects unrelated to wages. According to economists, in the 1980s and 1990s, immigration of low-skilled workers may have increased the labor supply of highly skilled women and immigration of highly skilled workers may have increased the rate of innovation in the United States.

Economists Patricia Cortés and José Tessada (2011) examined whether the concentration of low-skilled immigrants across U.S. cities affected the labor choices of women.² They estimated that such concentration during the 1980s and 1990s significantly affected the labor supply of women at the top of the wage distribution. In particular, those in the top quartile of the female wage distribution increased their work time by about 20 minutes and decreased their household work time by about 7 minutes per week.³ What explains these effects? First, low-skilled immigrants represent a significant fraction of those employed in occupations that provide close substitutes for home-based services (i.e., gardening, housekeeping, and child care). Second, the influx of low-skilled immigrants lowered the price of these services, thereby allowing highly skilled female workers to purchase these services and reduce personal time spent on household work.

Economists Jennifer Hunt and Marjolaine Gauthier-Loiselle (2010) studied whether immigrants with a bachelor's degree or higher increased the rate of innovation in the United States during the 1990s.⁴ The authors estimated that the influx of foreign-born college graduates increased patents per capita by about 21 percent. This is particularly significant given that patents per capita rose 63 percent during the period. In addition, the authors estimated that foreign-born scientists and engineers with post-college degrees (those closer to the top of the skill distribution) increased patents per capita up to 32 percent. The authors

attribute this result to (i) the greater concentration of foreign-born scientists and engineers relative to those U.S.-born with similar levels of education, and (ii) creative “spillovers”: foreign-born scientists and engineers boost the innovation of their native counterparts through collaboration. Even immigrants who do not acquire patents may have a similar effect by contributing complementary skills or by founding high-tech companies.

According to economists, in the 1980s and 1990s, immigration of low-skilled workers may have increased the labor supply of highly skilled women, and immigration of highly skilled workers may have increased the rate of innovation in the United States.

The majority of immigrants are either low or highly skilled and represent a significant share of the national workforce. In 2010, nearly 50 percent of the nation's workforce with less than a high school diploma and 15 percent with a bachelor's degree or higher were foreign-born.⁵ These workers affect the wages of native workers with similar skill levels. However, immigration also creates non-wage effects over the entire range of the skill distribution. Such effects should be included when accounting for the costs and benefits of immigration. ■

¹ See Hernández-Murillo, Rubén. “New Views on Immigration.” Federal Reserve Bank of St. Louis *National Economic Trends*, June 2006; <http://research.stlouisfed.org/publications/net/20060601/cover.pdf>.

² Cortés, Patricia and Tessada, José. “Low-Skilled Immigration and the Labor Supply of Highly Skilled Women.” *American Economic Journal: Applied Economics*, July 2011, 3(3), pp. 88-123.

³ The authors explain that the effect on total hours worked came mostly from highly skilled workers already in the labor force and there was no effect from women not in the labor force.

⁴ Hunt, Jennifer and Gauthier-Loiselle, Marjolaine. "How Much Does Immigration Boost Innovation?" *American Economic Journal: Macroeconomics*, April 2010, 2(2), pp. 31-56.

⁵ Bureau of Labor Statistics. Foreign-born Workers: Labor Force Characteristics; www.bls.gov/schedule/archives/all_nr.htm#FORBRN.

Posted on October 18, 2011

Views expressed do not necessarily reflect official positions of the Federal Reserve System.