Labor market effects of immigration in the United States and Europe

Substitution vs. complementarity

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Abstract. This paper examines the impact of immigrants on the income of various groups of resident workers in the United States and Europe. Our approach features the use of a production technology incorporating education, experience, and unskilled labor as inputs. This contrasts with the assumption used in earlier studies that native-born and immigrant labor are distinct inputs into production. We find that in both United States and European production, education, unskilled labor and experience are complementary inputs. Based on these results, simulations of the impact of immigration on residents are carried out. The absolute magnitude of these effects is found to be very small.

I. Introduction

The effects of immigrants on the earnings and employment of resident workers has been a major policy issue in the United States and Europe for many years. In the United States the debate has been fueled recently by the large inflow of undocumented workers and the fear that immigrants have widened income inequality (see Rivera-Batiz et al. 1991, Borjas et al. 1992). In Europe the debate involves the presence of guestworkers, internal migration within the European Union, and the flow of Eastern European migrants (see Layard et al. 1992, Burda and Wyplosz 1991a). It is also a significant issue in the current move toward European
integration: the migration of workers from less-developed to more-developed members of the European Union raises questions about their impact in both the recipient and source regions (see Krueger and Pischke 1992, Burda and Wyplosz 1991 b).

The impact of immigration and immigration restrictions on the labor market outcomes of residents has a long research history in the United States; in Europe it has been a matter of growing study in recent years (see Straubhaar and Zimmermann 1993, Gordon 1989). We employ recent theoretical and empirical developments in the international and labor economics fields to examine the effects of migration flows on the wages of native-born and resident workers in the United States and Europe.

The impact of immigrants on the earnings of native-born and resident workers is closely linked to whether these groups are substitutes or complements in the production process. This topic has received substantial attention from researchers using aggregate cross-sectional data. The existing evidence from the United States is ambiguous — some studies find that immigrants and native-born workers are substitutes, others that they are complements. Recently, it has been recognized that different types of immigrants have disparate effects on the native-born. The labor market consequences of immigrants from various countries or ethnicities on native-born workers varies according to their respective skills and characteristics. Recent empirical models incorporate worker heterogeneity in estimating the effect of immigrants on wages (see, for instance, Rivera-Batiz and Sechzer 1991). We examine the impact of immigration in the United States and Europe using this latest methodology.

The next section provides a brief survey of the existing literature on the economic impact of immigration and specifies how our approach fits into — and diverges from — that literature. Section III sets up the theoretical model that describes domestic production and the determinants of wages. Section IV presents the empirical model utilized to estimate the effects of immigrants, our data sources, and our estimates of the impact of different groups of immigrants on the wages of various groups of residents in the United States and Europe. Section V discusses the implications of our analysis.

II. Review of the literature

Although there is a rich European literature examining the characteristics of immigrants and the determinants of migration flows (see the surveys by Straubhaar and Zimmermann 1993, Licht and Steiner 1992), studies focusing on the estimation of the labor market impact of European migration flows is very thin (see DeNew and Zimmermann 1994). By contrast, the literature on United States immigration has examined the issue in detail (see the surveys by Rivera-Batiz and Sechzer 1991, Straubhaar and Zimmermann 1993). In particular, there is a substantial, growing, literature examining whether immigrants and the native-born are substitutes or complements.

How immigrants alter the earnings of native-born or resident workers is closely linked to whether these groups are substitutes or complements in production. There are alternative definitions of complementarity and substitutability. We employ a $q$-based definition in which two factor inputs are substitutes if an increase in the supply or endowment of one input lowers the price of the other input, and complements if the increased supply raises the other input’s price.