



# Timing is everything: Short-run population impacts of immigration in US cities

Abigail Wozniak<sup>a,\*</sup>, Thomas J. Murray<sup>b</sup>

<sup>a</sup> Department of Economics, 441 Flanner Hall, University of Notre Dame, Notre Dame, IN 46556, United States

<sup>b</sup> Department of Economics, 324 Donnarumma Hall, Fairfield University, Fairfield, CT 06824, United States

## ARTICLE INFO

### Article history:

Received 3 August 2011

Available online 30 March 2012

### JEL classification:

R23

J1

J21

J61

### Keywords:

Immigration

Population change

Local labor markets

Short-run dynamics

## ABSTRACT

We provide the first analysis of the short-run causal impact of immigrant inflows on native populations at the local labor market level. Using published statistics from the American Community Surveys of 2000–2010, we examine how immigrant inflow shocks to a metropolitan area affect native populations. We find that immigrant inflows are associated with increases in local native populations on an annual basis but that these OLS estimates are generally upward biased. Our IV results are purged of this bias, but we still find that an additional immigrant increases the low skill native population by 0.4–0.7 in the concurrent period. To explain this result, we show that immigrant inflows lead to declines in outflows of low skill natives from affected MSAs. This is most pronounced in MSAs from which relocation is arguably more costly, which may disproportionately affect the low skilled. We find short-run responses among high skill natives that are consistent with displacement. The decline in high skilled native populations is driven by high skilled immigrant inflows, and high skilled outflows increase from affected MSAs. We show that these short-run changes are obscured in specifications using longer-run population changes and conclude that the short-run impact of immigrants on native populations differs markedly from their longer-run impact.

© 2012 Elsevier Inc. All rights reserved.

## 1. Introduction

Research on the economic impacts of immigration in the US stretches back at least three decades, and the great majority of this work relies on US Census data for its empirical analysis.<sup>1</sup> As a result, existing estimates are most appropriately characterized as medium- or long-run impacts of immigration, since they are generally derived from comparing outcomes at 10 year intervals. These longer-run relationships are certainly interesting, but they may well differ from the short-run relationships. Specifically, longer-run analysis may obscure short-run impacts if a series of short-run responses restores equilibrium over the longer period.<sup>2</sup> Our paper is the first to examine *short-run* changes in native populations in response to *local* immigrant inflow shocks. To do this, we assemble a panel data set of metropolitan area populations from the annual aggregate statistics of the US Census Bureau's American Community Surveys. Our data consist of repeat observations on native and immigrant populations

for a consistent set of 144 metropolitan areas over the 11 year period from 2000 to 2010. Our use of metropolitan area level data further distinguishes our approach from studies that use annual data at the state level to study short run relationships (Barcellos, 2010; Butcher and Card, 1991; Jaeger, 2007).

Although location decisions are typically perceived as lagging local conditions, there are reasons to think that some of immigration's impacts on local native populations and labor market outcomes might take place in the short-run. First, there is evidence that other dimensions of the local economy, like rental housing prices and industrial skill mix, exhibit short-run changes in response to an immigrant inflow shock (Lewis, 2005 and Saiz, 2003, 2007). Second, the high levels of gross migration in the US (6–7% per year according to Greenwood, 1997) provide ample scope for a city's potential in- and out-migrants to respond to a short-run shock to local immigrant inflows, thereby affecting both native populations and labor market conditions. A complete understanding of immigration's impacts therefore requires study of its short-run effects, in addition to the longer-run analysis already available in the literature.

A second contribution of our study is to examine the properties of a commonly used identification strategy and set of estimating equations under conditions when more periods are added to the usual city level panel data sets. We show that a common IV strategy in the immigration literature is not robust to the more detailed panel data controls available in our longer panel. We further show that this is likely due to functional form assumptions in the most common

\* Corresponding author. Tel.: +1 574 631 6208; fax: +1 574 631 4783.

E-mail address: [a\\_wozniak@nd.edu](mailto:a_wozniak@nd.edu) (A. Wozniak).

<sup>1</sup> Borjas (2001, 2003, and 2006), Borjas et al. (1996), and Card (2001) are prominent examples. The earlier, influential studies of Grossman (1982) and Altonji and Card (1991) also use Census data but focus on cross-sectional associations.

<sup>2</sup> For example, Casey (2011) finds that short-run impacts of black inflows to white neighborhoods on housing prices are significant while the longer run impact of black inflows on neighborhood home prices is zero.

estimating equations, and we propose an alternative set of estimating equations and control variables to deal with the problem.

We begin our analysis by estimating correlations between annual changes in native and immigrant populations. We focus on population changes because, after wage impacts, the question of whether immigrants encourage natives to leave an affected local labor market and “arbitrage with their feet” is a central question in the immigration literature. High quality local population variables are also a strength of the ACS in the period we use. We model an immigrant inflow as a single shock and allow responses to that shock to differ across native skill groups.<sup>3</sup> Our OLS results show that observed immigrant inflows are associated with increases in local native populations in the current period. Although these results are descriptive, they show that the correlations between native population changes and immigrant inflows are positive and economically large. We then examine the causal impact of immigrant inflow shocks on native populations using our preferred instrumental variables approach. We show that the OLS correlations are generally upward biased. The causal impact of immigrant inflows on the high skilled and total native populations are smaller than suggested by OLS, and of opposite sign in the case of the high skilled. OLS and IV estimates are indistinguishable for low skill natives. The causal impact of an additional immigrant in the current year is an increase of 0.42–0.65 low skill natives while an additional immigrant from the previous year reduces the high skill population by 0.38–0.58.

The final contribution of our study is to highlight and examine these differential responses to immigrant inflows across native skill groups. We first show that although our results differ from those in the literature based on longer-period changes, similar results can be obtained by restructuring our data to use long-period changes rather than the short-run changes that are our focus. Next, we provide evidence of displacement for high skilled natives – a group that is more geographically mobile than the low skilled – that is consistent with the displacement hypothesis examined in detail in Borjas (2006). Specifically, we find that inflows of high skilled immigrants drive the negative impacts of immigrant inflows on the high skilled white population, and we find that immigrant inflows increase total outflows of high skilled natives from affected MSAs. We then show that our results for low skilled native populations are driven by decreases in outflows from affected MSAs. Finally, we find that our main results are attenuated in larger and less geographically isolated cities, but not in “booming” cities. We hypothesize that immigrant inflows provide a weak negative shock that causes outward mobility for the less skilled to decline temporarily, particularly in cities where isolation or low relative housing prices make relocation to a new market more costly. This suggests that low skill natives are temporarily “trapped” by immigrant inflows. We conclude that the short-run impacts of immigrant inflows differ markedly for both high and low skill workers from effects reported in the literature using longer-run population changes. We further conclude that there are important differences in short-run responses to immigrant inflows across native skill groups and across city types.

## 2. Empirical methodology and estimating equations

A simple accounting identity relates the net annual change in total population ( $\Delta P$ ) in local market  $c$  to net annual changes in the local native ( $\Delta N$ ) and foreign born ( $\Delta M$ ) populations<sup>4</sup>:

$$\Delta P_{ct} = \Delta N_{ct} + \Delta M_{ct} \quad (1)$$

The key question we wish to examine is whether net changes in  $N$  offset net changes in  $M$ . That is, do natives move out of an area as immigrants arrive? The displacement theory of native migration adjustment predicts offsetting changes: as immigrants increase the local labor supply in market  $c$ , they lower wages in  $c$  relative to other markets. This creates an incentive for natives to move from  $c$  to higher wage markets, and through this displacement process, wages in  $c$  rise again. It is important to note that the migration adjustment models motivating previous analyses do not predict perfect displacement. Rather, they predict that as immigrants move in, *some* natives move out or fail to move in, at a rate of less than one-for-one, although we know of no model that makes an explicit prediction about the rate of transfer.

The displacement and wage re-adjustment process is inherently of limited duration. As more natives respond through migration, relative wages return to equilibrium, and the cross-market flows induced by an immigrant supply shock come to an end. If this mechanism is empirically important, we should observe native population changes in an area following immigrant inflows within a short period of time. This raises the question, how much time is enough time to observe these effects? While there is conflicting evidence over the effect of immigrant inflows on native wages, there is evidence that localities begin to adjust to an influx of immigrants on other dimensions within 1–5 years. Saiz (2003, 2007) finds a large increase in the price of rental housing within 1 year of a shock to local immigrant population size. Lewis (2005) finds that immigrant inflows affect the skill-intensity of local manufacturing processes within 5 years of arriving in an area. In light of this evidence, we believe a reasonable starting point for our analysis is to examine the relationship between immigrant inflows and native population changes in an area within a similar 1- to 5-year time frame.

As a first step, we document the relationship between annual changes in native and immigrant populations at the local labor market level controlling for differential native population growth trends across metropolitan areas. Specifically, we estimate the following:

$$\Delta N_{ct} = \beta_0 + \beta_1 \Delta M_{ct} + \Theta_c + \mu_{ct} \quad (2)$$

The dependent variable is the change in the native population in market  $c$  between year  $t$  and  $t - 1$ , and the right hand side variable of interest is the change in the immigrant population in  $c$  over the same period.  $\mu$  is an i.i.d. error term.  $M$  and  $N$  are total populations of immigrants and natives, respectively, in city  $c$ . We discuss these in detail in the next section. The inclusion of the MSA fixed effects,  $\Theta_c$ , function as metropolitan area-specific time trends since the dependent variable is in changes. Our model is thus an example of the awkwardly-named random trend model for panel data discussed in Wooldridge (2002) and employed by Papke (1994).<sup>5</sup> The MSA-specific effects absorb fixed as well as linearly time-varying differences across MSAs. They therefore account for a number of important but unobserved differences across cities. First, they allow native populations to have different underlying growth trends across MSAs. They also control for smoothly changing MSA characteristics, including a changing industrial structure or age distribution.<sup>6</sup> Finally, the first-differenced specification accounts for fixed differences across cities, like initial population size, which has been shown to be an important driver of both immigrant inflows and native population growth.

<sup>3</sup> Wozniak (2010) shows that, among new labor force entrants, migration of the more highly educated is more responsive to local demand conditions. She also discusses the literature showing that high skill natives are more geographically mobile on average.

<sup>4</sup> Card (2001) derives specifications from the same accounting identity but expresses the components in terms of gross population growth rates.

<sup>5</sup> Wooldridge (2002) points out that this is a misnomer, as there is actually nothing random about the model parameters.

<sup>6</sup> Since we estimate our model over a single decade of data, the possibility that city characteristics like industrial or demographic structure will follow a non-linear pattern is less of a concern.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات