Exploring the Impact of Large Immigrant Inflows on Regional Inequality in the United States

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Research Question

What is the impact of large inflows of immigrants on inequality across regions in the United States?

Methodological Approach

To be able to address the Research Question, the total U.S. population in 1980 —with its respective immigrant rate from source— was used as a reference and compared to the estimated immigrant inflow for 2007 across various Commuting Zones (CZ). The application of Two-Step Least Squares (2SLS), projected changes in CZ outcomes and the use of the Standard Card Instrument (SCI) and Autor, Dorn, and Hanson (ADH) controls allowed for determining the effects on the variables Native Wages, Native Unemployment, and Labor Force Participation (LFP). Based on this, the three elements to study inequality were defined: 1) population, 2) variable, and 3) measure, in alignment with the Income Inequality Course.

Key Findings

It was found that large immigrant inflows do not have a statistically significant impact on the evaluated variables. Based on this, it cannot be concluded that large immigrant inflows increase the inequality gap in the United States during the study period.

Data Description
Sources

The two main data sources used in this study are:

- **Data I:** The 1980 Census and "2007" data from the ACS (i.e., 2006-2008 3-year ACS)
  - `https://usa.ipums.org/usa/`
- **Data II:** Commuting zones (CZ) from David Dorn's website
  - `http://www.ddorn.net/data.html`

Data Description
Transformations

- **Step I:** By CZ c and year y: Construct native average wages, native unemployment and labor force participation rates
- **Step II:** Construct immigrant inflow:
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$$x_c = \frac{1}{N_{c,1980}} \left(I_{c,2007} - I_{c,1980} \right)$$

- $N_{c,1980} =$ total population of c in year 1980
- $I_{c,y} =$ population of immigrants in c in year y

continued

- **Step III:** Construct instrument I:

$$z_c = \frac{1}{N_{c,1980}} \sum_s f^s_{c,1980} \left(I^s_{2007} - I^s_{1980} \right)$$

- $I^s_y =$ number of immigrants from source region s in the US in year y
- $f^s_{c,1980} = \frac{I^s_{c,1980}}{I^s_{1980}}$ share of immigrants from s who are in c in year 1980
- **Step IIIa:** Construct instrument II:

$$z^{\text{alt}}_c = \frac{1}{I_{c,1980}} \sum_s f^s_{c,1980} \left(I^s_{2007} - I^s_{1980} \right)$$

- **Step IV:**
- Using 2SLS, project changes in CZ outcomes (percentage point for unemployment and LFP; percent or log for wage) on immigrant inflow
- instrument for, xc, with either, zc, or its alternative, zalt, depending on which has a stronger first stage when you include the controls
- include controls (like in Autor, Dorn, and Hanson) measured in 1980 data: key control is the share of the population that is immigrant in 1980

Main Results
Instrumental Relevance

Table 1: First-Stage 2SLS Results Comparing Instruments (Standard Card Instrument vs. Predicted Immigrant Growth Rate)

	Endogenous Variable: Immigrant Inflow (1980-2008)					
	(1)	(2)	(3)	(4)	(5)	(6)
Partial F Statistic	8.9984	1.0693	0.1735	18.369	2.1906	9.9777
P-value	0.0027	0.3011	0.6770	0.0000	0.1389	0.0016
Constant	0.0504***	0.0206***	-0.3796***	-0.0057	-0.0027	-0.4928***
	(0.0099)	(0.0069)	(0.1408)	(0.0201)	(0.0225)	(0.1571)
Share of employment among the foreign-born population in 1980		2.3616***	1.2458**		1.6483***	1.1985***
		(0.5444)	(0.6288)		(0.3625)	(0.3144)
Share of employment in manufacturing in 1980			-0.2307*			-0.2105
			(0.1301)			(0.1329)
Share of employment among women in 1980			0.6430			0.7937*
			(0.3986)			(0.3962)
Share of the college-educated population in 1980			0.0599			0.0939
			(0.3496)			(0.3207)
Logarithm of total population in 1980			0.0181***			0.0182***
			(0.0058)			(0.0071)
Standard Card Instrument	0.3602***	-0.1460	0.0555			
	(0.1201)	(0.1412)	(0.1333)			
Predicted Immigrant Growth Rate				0.0391***	0.0129	0.0226***
				(0.0091)	(0.0087)	(0.0071)
R^2	0.2347	0.3296	0.3977	0.1131	0.3331	0.4242
Partial R^2	0.2347	0.0097	0.0012	0.1131	0.0148	0.0452

Notes: $N = 741$. Robust standard errors (in parentheses) are clustered at the state level. A Partial F-statistic below 10 is typically considered weak evidence of instrument relevance. The p-value is calculated using a $\chi^2(1)$ distribution.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Main Results
Causal Effect on Native Population Outcomes

Table 2: 2SLS Results for Various Native Population Outcomes Using the *Predicted Immigrant Growth Rate* as an Instrument

Native Population Outcome	Growth Rate of Wages			Growth Rate of Unemployment			Growth Rate of NILF		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Immigrant Inflow (1980-2008)	-0.4294*	-1.7339	-0.5402	0.2260***	0.7200	0.5059***	0.1127***	0.3164	0.4517**
	(0.2326)	(1.4898)	(0.4442)	(0.0570)	(0.4748)	(0.1547)	(0.0568)	(0.2721)	(0.1942)
Share of employment among the foreign-born population in 1980		3.2125	0.6921		-1.2165	-0.6535***		-0.5015	-0.5164*
		(2.6615)	(0.7209)		(0.7735)	(0.2469)		(0.4959)	(0.3047)
Share of employment in manufacturing in 1980			-0.4735**			0.1141			0.1963**
			(0.1949)			(0.0774)			(0.0961)
Share of employment among women in 1980			2.4377***			-0.1535			0.0652
			(0.7215)			(0.2538)			(0.3051)
Share of the college-educated population in 1980			-0.1724			0.0028			-0.1147
			(0.4267)			(0.1527)			(0.1445)
Logarithm of total population in 1980			0.0143			-0.0108**			-0.0067
			(0.0140)			(0.004)			(0.0053)
Constant Term	1.1695***	1.1783***	0.1352	-0.0222***	-0.0256	0.1297	-0.0693***	-0.0707***	-0.0578
	(0.0264)	(0.0551)	(0.2751)	(0.0044)	(0.0167)	(0.019)	(0.0073)	(0.0091)	(0.1360)

Notes: $N = 741$. Robust standard errors (in parentheses) are clustered at the state level.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Conclusions

- This study examined the impact of large immigrant inflows on native labor market outcomes across U.S. regions using 2SLS regression and two instrumental variables: the Standard Card Instrument and Predicted Immigrant Growth Rate.
- **Instrumental Relevance:** The Predicted Immigrant Growth Rate outperformed the Standard Card Instrument in robustness and statistical significance, meeting the Partial F-statistic threshold of 10 with all controls included.
- **Labor Market Outcomes:**
  - Immigrant inflows had no significant effect on native wage growth, alleviating concerns about wage depression.
  - A positive and significant relationship was observed between immigrant inflows and native unemployment, suggesting potential labor market frictions in specific regions.
  - No consistent impact was found on labor force participation (LFP).
- The findings highlight the importance of robust instruments in immigration research and suggest that while wages remain unaffected, rising unemployment rates in certain regions require further investigation.
- Reducing regional disparities and addressing labor market adjustments caused by immigration warranst further discussion.

Appendix


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