



The Impact of Immigrants in Recession and Economic Expansion

By Giovanni Peri
University of California, Davis



mpi

MIGRATION POLICY INSTITUTE

The Impact of Immigrants in Recession and Economic Expansion

Giovanni Peri
University of California, Davis

June 2010

Acknowledgments

This paper was written for the Migration Policy Institute's Labor Markets Initiative to inform its work on the economics of immigration. The paper does not necessarily represent the views or policy recommendations of MPI or its Labor Markets Advisory Group.

MPI is grateful for the generous support of its funders and with respect to its Labor Markets Initiative particularly wishes to acknowledge the Ford Foundation, the Open Society Institute, and the J.M. Kaplan Fund. For information on the Labor Markets Initiative, please visit: www.migrationpolicy.org/lmi.

© 2010 Migration Policy Institute.
All Rights Reserved.

Cover Photo: Peter Papas
Cover Design and Typesetting: April Siruno, MPI

No part of this publication may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopy, or any information storage and retrieval system, without permission from the Migration Policy Institute. A full-text PDF of this document is available for free download from: www.migrationpolicy.org.

Permission for reproducing excerpts from this report should be directed to: Permissions Department, Migration Policy Institute, 1400 16th Street, NW, Suite 300, Washington, DC 20036, or by contacting communications@migrationpolicy.org.

Suggested citation: Peri, Giovanni. 2010.
The Impact of Immigrants in Recession and Economic Expansion. Washington, DC: Migration Policy Institute.



Contents

- EXECUTIVE SUMMARY 4**

- I. INTRODUCTION 6**

- II. THE IMPACT OF NET IMMIGRATION ON EMPLOYMENT AND GROSS DOMESTIC PRODUCT 8**

- III. THE SHORT- AND LONG-RUN EFFECTS OF NET IMMIGRATION ON AVERAGE
(OVER THE WHOLE BUSINESS CYCLE). 9**

- IV. EFFECTS OF NET IMMIGRATION DURING ECONOMIC EXPANSION AND DOWNTURN. 11**

- V. IMPLICATIONS AND DISCUSSION 12**

- VI. CONCLUSION 16**

- APPENDICES. 17**

- WORKS CITED. 22**

- ABOUT THE AUTHOR 24**



Executive Summary

The worst of the recent recession is probably over, but the US labor market is still deeply depressed. It is natural, therefore, to revisit questions about the impact of immigrants on the labor market through the lens of the current economic situation. Over the past decade, a broad consensus has developed that in the long run (say, ten years) the impact of immigration on the average income of Americans is small but positive. Immigration improves US productivity in the long run primarily by boosting the economic efficiency of production, and by encouraging adjustments in the way the US economy functions (as firms reorganize their production to take advantage of immigrant labor, and immigrant and native workers gravitate towards occupations that best suit their skills and abilities). But these adjustments may take a few years to unfold fully.

In the current economic climate, however, the long run seems rather distant, and more pressing concerns about the short run (say, one to four years) have taken center stage. Two questions arise. First, what are the short-run impacts of immigration and how long does it take for the labor market to adjust and for firms to take advantage of a larger workforce? Second, to what extent do the short-run impacts depend upon the health of the economy? How much does the labor market's capacity to "absorb" new immigrants expand during a boom or decrease during a downturn? Until recently, no comprehensive analysis of these short-run effects has been possible, because the relevant data source (the Current Population Survey) has only contained information about place of birth since 1994.

This report fills this gap, providing an analysis of the short- and long-run impacts of immigration on average and over the business cycle. The results suggest that:

- In the long run, immigrants do not reduce native employment rates, but they do increase productivity and hence average income. This finding is consistent with the broad existing literature on the impact of immigration in the United States.
- In the short run, immigration may slightly reduce native employment and average income at first, because the economic adjustment process is not immediate. The long-run gains to productivity and income become significant after seven to ten years.

Moreover, the short-run impact of immigration depends on the state of the economy:

- When the economy is growing, new immigration creates jobs in sufficient numbers to leave native employment unharmed, even in the relatively short run and even for less-educated native workers.
- During downturns, however, the economy does not appear to respond as quickly. New immigrants are found to have a small negative impact on native employment in the short run (but not the long run).

In other words, immigration unambiguously improves employment, productivity, and income, but this involves adjustments. These adjustments are more difficult during downturns, suggesting that the United States would benefit most from immigration that adjusts to economic conditions. While immigration already responds to some extent to the economic cycle (particularly illegal immigration), the current immigration system makes legal immigrant inflows particularly unresponsive.



A redesigned system could address this problem in several ways. First, it could allow employers' demand for work visas to play a stronger role in determining the actual number of visas issued. A basic thought experiment suggests that US workers across the skill spectrum would benefit if new entries were allowed to increase by about 300,000 in years of economic expansion, and remain constant in times of economic stress. In addition, a share of the visas should be allocated to less-skilled workers, especially those who perform primarily manual work that native workers increasingly shun. This would help to reduce the incentive for less-skilled workers to come to the United States illegally.

Economics alone cannot be the only criterion to guide immigration policies. However, if the goal is to make immigration more responsive to US economic needs (on average and over the business cycle), shifting the balance of permanent immigration in favor of employment-based channels would also be one way to accomplish it.

Immigration unambiguously improves employment, productivity, and income, but this involves adjustments. These adjustments are more difficult during downturns, suggesting that the United States would benefit most from immigration that adjusts to economic conditions.



I. Introduction

While data on gross domestic product (GDP) suggest that the worse of the recession is probably over, the US labor market is still deeply depressed. Unemployment rates in the United States are at levels not experienced for two decades. Between January 2009 and January 2010 about 3.9 million jobs were lost.¹ It is natural, therefore, to revisit questions about the impact of immigrants on the labor market and on the economy through the lens of the current economic situation. Are the short-run effects of net immigration² on native workers' employment and income less beneficial (or more harmful) if immigrants enter the United States during a recession? Does the economy have the same capacity to "absorb" new workers when immigrants join the US economy in a recession? Do the *long-run* gains or losses to the US economy from immigration depend on the phase of the cycle during which immigrants enter the country? These questions have become particularly relevant in the last two years and the present report tries to address them.

Most (though not all) economic research over the last decade has emphasized the potential gains that result from immigration to the United States. Immigration can boost the supply of skills different from and complementary to those of natives,³ increase the supply of low-cost services,⁴ contribute to innovation,⁵ and create incentives for investment and efficiency gains.⁶ Quantifying these gains is not easy, but steady progress has been made in identifying and measuring them. There is broad consensus that the long-run impact of immigration on the average income of Americans is small but positive.⁷ In particular, recent studies have identified measurable gains for the highly educated and small, often not significant, losses for less-educated workers. These empirical analyses, however, have focused on the "long run."⁸ But the present economic recession and its persistent labor market consequences make the long run seem rather distant, and more pressing concerns about the short run have taken center stage.⁹

Immigration's economic benefits mostly result from its effect on immigrant and native workers' occupational choices, accompanied by employers' investments and reorganization of the firm. For instance, immigrants are usually allocated to manual-intensive jobs, promoting competition and pushing natives to perform communication-intensive tasks more efficiently. This process, at the same time, reorganizes firms' structure, producing efficiency gains and pushing natives towards cognitive and communication-intensive jobs that are better paid. These effects may take a few years to unfold fully. In the meantime and before the adjustments take place, do immigrants crowd out natives from

¹ Bureau of Labor Statistics (BLS), "The Employment Situation: January 2010" (news release, February 5, 2010), www.bls.gov/news.release/archives/empisit_02052010.pdf.

² Net immigration is equal to the inflow of immigrants minus the outflow of returnees and re-migrants.

³ See, for instance, Gianmarco Ottaviano and Giovanni Peri, "Immigration and National Wages: Clarifying the Theory and the Empirics" (National Bureau of Economic Research Working Paper 14188, July 2008).

⁴ Patricia Cortes, "The Effect of Low-Skilled Immigration on U.S. Prices: Evidence from CPI Data," *Journal of Political Economy* 116, no. 3 (2008): 381-422.

⁵ William R. Kerr and William F. Lincoln, "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention," *Journal of Labor Economics* (forthcoming), www.people.hbs.edu/wkerr/Kerr_Lincoln_JOLE3_H1B_Paper.pdf; Marjolaine Gauthier-Loiselle and Jennifer Hunt "How Much Does Immigration Boost Innovation?" *American Economic Journal: Macroeconomics* 2 no 2 (2010): 31-56.

⁶ Giovanni Peri and Chad Sparber, "Task Specialization, Immigration and Wages," *American Economic Journal: Applied Economics* 1 no 3 (2009): 135-169.

⁷ David Card, "Immigration and Inequality" (NBER Working Paper 14683, 2009), www.nber.org/papers/w14683.pdf.

⁸ Most of the economic analysis is based on periods at least ten years apart. This is because the analysis relied on decennial Census data as the main source of labor market information identifying individuals' nativity.

⁹ Throughout this report, the "short run" refers to periods of between one and four years unless otherwise specified. The "long run" refers to periods of seven to ten years and above.



the labor market? How long does it take for firms to adjust their investments and organization in order to benefit from the new supply of skills? Are these processes easier and less costly during an economic expansion than in an economic downturn?

Until very recently no comprehensive analysis of the short-run effects of immigration on the US labor markets has been possible.¹⁰ The reason is that yearly representative data from the Current Population Survey, typically used to analyze production and labor markets, have contained information on the place of birth of individuals only since 1994 (as opposed to the decennial census that has always included that information). Hence, it is only during the last few years that sufficient data has accumulated in order to analyze the short-run (yearly) impacts of net immigration on labor market outcomes. Moreover, between 1994 and 2007, only the mild 2001 recession was observed, providing limited variation over the economic cycle. While several influential academic papers have emphasized how the short-run effects of immigration on wages and employment could be different from long-run effects, those differences were based on theoretical assumptions rather than on empirically estimated evidence.

Using empirical methods in line with the best practice used to analyze and quantify the long-run effects of immigration, this report will provide some evidence to inform these questions. It begins by analyzing the short-run impact of immigration on employment, income, and other factors that affect income, such as investments, hours worked, and productive efficiency, examining the speed with which the economy adjusts to accommodate new immigrants. It then extends this analysis to investigate how these short-run effects, and possibly the medium-run effect (over four or five years), depend on the state of the economy when immigrants enter the labor market. Finally, it discusses the implications the results may have for immigration policy.

When the economy is growing, new immigration creates jobs in sufficient numbers to leave native employment unharmed, even in the relatively short run. During downturns, however, new immigrants are found to have a small negative impact on native employment in the short run (but not the long run).

The results suggest that in the long run, immigrants do not reduce native employment rates, but they do increase productivity and hence average income. This finding is consistent with the broad existing literature on the impact of immigration in the United States. A new analysis of the short-run impacts of immigration, however, finds some mild negative effects: immigration may slightly reduce native employment at first, because the economic adjustment process is not immediate. Lower average income is also likely in the short run. The long-run gains to productivity and income become significant after seven to ten years. The results moreover suggest that the short-run impact of immigration depends on the state of the economy. When the economy is growing, new immigration creates jobs in sufficient numbers to leave native employment unharmed, even in the relatively short run. During downturns, however, new immigrants are found to have a small negative impact on native employment in the short run (but not the long run). The economy does not appear to respond as quickly to new immigrants in terms of new job creation and productivity boosts during recessions.

¹⁰ The only paper I know of that analyzes the effects of immigration on wage and native employment in the United States using yearly panel data is by Silvia Barcellos, "The Dynamics of Immigration and Wages" (Manuscript, Princeton University, 2009), www.princeton.edu/~silvie/Barcellos_JMP.pdf.



II. The Impact of Net Immigration on Employment and Gross Domestic Product

The Methodological Approach

The goal of this study is to identify and measure the impact of immigration on employment and income (GDP) in the United States. Income per worker depends on how productive workers are and it is the main determinant of the worker's wage: in a competitive market, more productive workers are paid higher salaries as they are more valuable to the firm.

The difficulty in identifying the effects of immigration on economic variables is that we do not observe what would have happened if immigration levels were different; therefore to infer such effects we compare states with high immigration to states with low immigration. More precisely we account for most of their other productive differences (sector specialization, research spending, and others) and we measure what differences arise in states that have experienced large immigrant inflows compared to states that receive small inflows. Such differences allow us to infer the impact of immigrants on the economy.

To strengthen further our confidence that we are isolating the real impact of immigration and not a reflection of the fact that immigrants chose to go to areas with faster growth, we isolate only variations in net immigration not affected by state-specific economic conditions. In particular we isolate net immigration caused by geographical proximity to the border (because border states tend to get more immigration), and historical migration patterns (because immigrants are drawn to areas with previous immigrant communities). Those flows are mostly geography- and preference-driven but still affect the economy, so the response to them is a measure of the impact of immigrants on economic variables.¹¹

We choose the state economies from 1960 to 2006 as units of our analysis to provide a measure of the aggregate impact of immigration. While effects on employment, income, and wages may vary by occupation (and possibly industry), here we present the aggregate effects that summarize the economic consequences for the average American worker.

Before presenting the actual estimates, let us briefly discuss the channels through which net immigration affects the components of income. The empirical analysis will look at each of these components, and examine how immigration has affected them. First, and most naturally, net immigration can affect employment growth. If one more working immigrant produces no displacement of native workers, then for each new immigrant, total employment will increase by 1, and native employment will remain unchanged (in the Appendix tables which display the results, both are reported). An estimated response of total employment smaller than 1 implies that some native jobs are lost when immigrants enter employment (crowding out). An estimated response larger than 1 implies that some natives would gain jobs as a consequence of immigration (crowding in).

Second, immigration affects the amount of structure and equipment per worker. This is called physical capital per worker and it is an important determinant of the firm's productivity and the worker's wage. Its adjustment depends on how quickly entrepreneurs invest. Eventually they can take advantage of the opportunity of a larger pool of potential employees and endow workers with productive capital by

¹¹ A more technical explanation of the method of estimation is contained in the Appendix. For a more detailed description of the methodology, see Giovanni Peri, "The Effect of Immigration on Productivity: Evidence from U.S. States" (NBER Working Paper 15507, November 2009), www.nber.org/papers/w15507.



expanding their capacity, starting new businesses, or creating spinoffs. How fast investments respond to these opportunities and how long it takes to adjust physical capital in response to an inflow of immigrants are empirical questions and our estimates will provide an answer to them.

Third, the impact of immigration on hours per worker captures the effect on individual labor supply. Those should depend in part on average wage; hence a positive average effect on worker's productivity and wages may result in higher individual labor supply.

Finally the analysis examines the impact of immigration on total-factor productivity, which is a measure of the efficiency of production factors. Immigrants may affect this variable through several channels. By promoting efficient specialization of workers and better allocation of skills to tasks (as immigrants specialize in manual jobs) they may produce gains from specialization.¹² By encouraging the adoption of techniques that are more appropriate for less-educated workers they may increase their relative productivity.¹³ Immigrants may also increase the range of services produced in the economy.¹⁴ Finally the share of highly educated immigrants, as they are more specialized in technological and scientific occupations, may boost innovation.¹⁵ All these effects may add to a measurable productivity effect. However it seems plausible that they will materialize over a certain period of time and not in the very short run as immigrants enter the country.¹⁶

III. The Short- and Long-Run Effects of Net Immigration on Average (Over the Whole Business Cycle)

Detailed empirical results are described in Appendix 2, which shows estimates of the effects of net immigration on each of the components of GDP described above. Three patterns emerge clearly that are worth emphasizing.

First, ***there is only very limited evidence of crowding-out of natives in the workforce by immigrants.*** In the short run (one to two years) the results imply a small negative effect on native employment, but the estimates are not significantly different from zero. In the long run, a small positive effect is estimated (also not significantly different from zero). Interestingly, the impact on hours per worker is similar, with small and nonsignificant effects in the short run and positive (this time significant) effects in the long run. These results are consistent with the idea that immigrant labor is somewhat differentiated and complementary to native labor, generating limited competition in the short run and in the long run even job opportunities for native workers.¹⁷

¹² Peri and Sparber, "Task Specialization, Immigration and Wages."

¹³ Ethan Lewis, "Immigration, Skill Mix, and the Choice of Technique" (Federal Reserve Bank of Philadelphia Working Paper no. 05-08, 2005), www.philadelphiafed.org/research-and-data/publications/working-papers//2005/wp05-8.pdf.

¹⁴ See for instance David Neumark and Francesca Mazzolari, "Beyond Wages: The Effect of Immigration on the Scale and Composition of Output" (NBER Working Paper 14900, 2009), www.nber.org/papers/w14900.pdf.

¹⁵ See Kerr and Lincoln, "The Supply Side of Innovation;" and Gauthier-Loiselle and Hunt, "How Much Does Immigration Boost Innovation?"

¹⁶ Appendix 2 also reports the effect of immigration on workers' skill intensity. This is measured by the share of skilled workers (with college education) in total employment. Immigration has only a small negative impact on this share as immigrants are somewhat overrepresented among workers with no college degree.

¹⁷ The results are also consistent with most of the literature. See, for example, David Card, "Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration," *Journal of Labor Economics* 19, no 1 (2001): 22-64.



Second, *immigration has a positive long-run effect on the average income of native workers. This effect accrues over some time.* In the short run (one to two years) no effect is observed, while over the long run (ten years) a net inflow of immigrants equal to 1 percent of employment increases income per worker by 0.26 percent. This implies that total immigration to the United States over the period 1990-2006, representing an increase of employment by 11 percent, caused a 2.86 percent real wage increase for the average US worker. In another paper I focus on this effect and test its robustness to several controls and specifications.¹⁸ This seems to be a strong and robust result.

The third result is that *the long-run increase in income per native worker is mainly due to an increase in the economic efficiency of production (or “total-factor productivity”).* This effect takes four to seven years to become apparent. Moreover, while in the short run the intensity of physical capital per worker is decreased by net immigration, in the medium-long run firms expand their equipment and productive structures proportionally to their increase in workers. This long-run response of investments also means that the restructuring and specialization promoted by immigrants do not change much the machine-intensity of production. While some manual functions performed by immigrants may reduce the use of some type of machinery (e.g. tomato harvesters) the consequent increase in interactive-communication-managerial functions by natives may encourage the use of others (e.g. computers). Immigrants supplying labor and differentiated skills represent opportunities for firms to expand and increase their productive equipment and structures (capital). As this happens, the gains from specialization and efficiency produced by immigrants can be realized. This might be the reason for the slow response.

Given this small short-run crowding effect of immigrants, it must be asked if there is an optimal way of absorbing immigrants in the short run that minimizes the costs and still generates the benefits from their positive long-run effects?

The patterns identified seem to support the following story. Immigration helps employment and productivity, but this involves adjustments. Firms need to upgrade and expand their capital stock in order to take advantage of the new labor supply and create additional jobs. Immigrants, by specializing in manual tasks for which they have comparative advantages, push natives into more communication-intensive tasks. This generates gains from specialization and from comparative advantages but also takes some transitional time. Firms adopt appropriate technologies and organization structures that take advantage of the increased availability of manual labor and this also takes some time. Hence, while in the short run the inflow of immigrants may mildly reduce the amount of capital or equipment per worker and therefore income per native worker, in the long run it unambiguously increases efficiency and income.

Given this small short-run crowding effect of immigrants, it must be asked if there is an optimal way of absorbing immigrants in the short run that minimizes the costs and still generates the benefits from their positive long-run effects? How does the short-run effect of immigrants depend on the economic cycle? To answer this question, the next section examines how the impact of immigration depends on the state of the economy.

¹⁸ See Peri, “The Effect of Immigration on Productivity.”



IV. Effects of Net Immigration during Economic Expansion and Downturn

This section examines the impact of net immigration during periods of relative economic weakness and strength.¹⁹ While the estimated effects are not very precise, some patterns seem rather consistent.

First, on one hand *immigration during downturns seems to have a small negative effect on both native employment and income per worker in the short run* (one to two years). On the other hand, *net immigration during economic expansion reduces native employment less in the short run and has no measureable negative effect on income* per worker even within the first year.

Similarly, the responses of total factor productivity are estimated to be positive (or zero) in the short run when net immigration occurs during an expansion, while net immigration in recession has a negative effect within the first year.

A third difference between expansion and downturn concerns the response of physical capital per worker. *During a downturn investments do not respond as quickly to immigration as in expansion.* This time the difference in response is close to being statistically significant within the two- and the four-year intervals. Since the economy has unused capacity during downturns, this may make firms reluctant to expand their productive capacity and/or to adopt the technologies (and pay the fixed cost) that would best take advantage of immigrant labor. However in the long run (seven- to ten-year intervals) no difference in adjustment is observed independently of the short-run effects.

It is worth emphasizing that the results imply that net immigration during expansionary periods may have positive short- and long-run effects on native jobs and hours worked. However, net immigration during a downturn may have a crowding-out effect on native jobs in the short run. This suggests a way in which immigration policy may help maximize the positive overall effects of immigration on natives by potentially allowing the labor demand from firms to affect foreign workers' time of entry. We will discuss this in the next section.

The Impact of Less-Educated Immigrants

The analysis so far has focused on the aggregate and average effects of immigration. But distributional effects also exist. Some economists argue that the relatively large inflow of less-educated immigrants would hurt the employment and wages of less-educated natives. Appendix 4 shows the employment response to immigration of less-educated native workers only, in the short and long run, first averaging across periods (first row) and then separating the effects of inflows during economic upturns and downturns (second row). The results mirror the patterns for total native employment, but they are quantitatively larger and more statistically significant.

In the short run (one to two years) net immigration seems to crowd out less-educated native workers but only when it takes place in periods of economic weakness. Net immigration during economic upturns does not seem to affect employment of the less educated in the short run (one to two years). In the long run, there is some evidence that immigrants lead to positive job creation, even for less-educated natives.

¹⁹ This paper uses US states as the unit of analysis. To determine economic strength and weakness of a state economy, I use the state output gap, namely a measure of how far the economy is from its long-run trend, and I define downturns as periods in which the output gap for the state is smaller than zero and expansions as periods in which the output gap is larger than or equal to zero. I estimate separate responses depending whether, during the period the state economy exhibits on average a positive or zero output gap, which would imply strong demand or a negative output gap, which implies slow demand and some idle resources in the economy. We use the H-P filter, a standard procedure used to evaluate the long-run trend of output at the state level (gross state product, or GSP), and then we take the difference between the actual GSP and the H-P filtered one to calculate the output gap.



V. Implications and Discussion

Before talking about some implications, two clarifications are in order. First, the immigration data used in the study include authorized as well as unauthorized immigrants. The effect estimated, therefore, is the response to total net immigration. This is possible as we use data from the decennial census, the American Community Survey (ACS), and the Current Population Survey (CPS) that collect a representative sample of the population resident in the United States and record information about their place of birth — not their legal status.²⁰ The impact of authorized and unauthorized immigrants, estimated separately, might be quite different from each other.

Second, the estimated positive long-run effects of immigration on native income per worker are small but not negligible. ***In a state such as California, where the share of immigrants in employment increased from 25 percent in 1990 to 35 percent in 2007, the average income per worker would have increased by 2.6 percent in real terms over that period.*** Similar gains in income per worker would accrue in Texas (where the share of immigrant employment grew from 11 to 21 percent between 1990 and 2007) or in New York (where immigrant employment grew from 18 percent to 27 percent).

In order for immigration to boost productivity and income per worker, the state economy must make some adjustments, and this takes time. However, ***most of these gains are realized within seven years.*** The results suggest that if the gross inflow of new immigrants is allowed to vary with the strength of labor demand (downturns and expansions) this would minimize the short-run economic costs of adjustment. New immigrants could be allowed to flow into the United States in larger numbers during an expansion when demand is stronger and firms are more willing to invest than during a recession when they would temporarily crowd a depressed labor market. The details of such policy are not easy to implement and require consideration of a number of details about the current US visa system. Moreover the fact that the majority of new permanent residence permits is awarded based on family (and not employment) reasons make the current legal immigration system ill-suited to respond to economic incentives. Rather than spelling out the details of potential employment-based immigration policies let me simply indicate some general ideas and facts to be kept in mind when designing the policies.

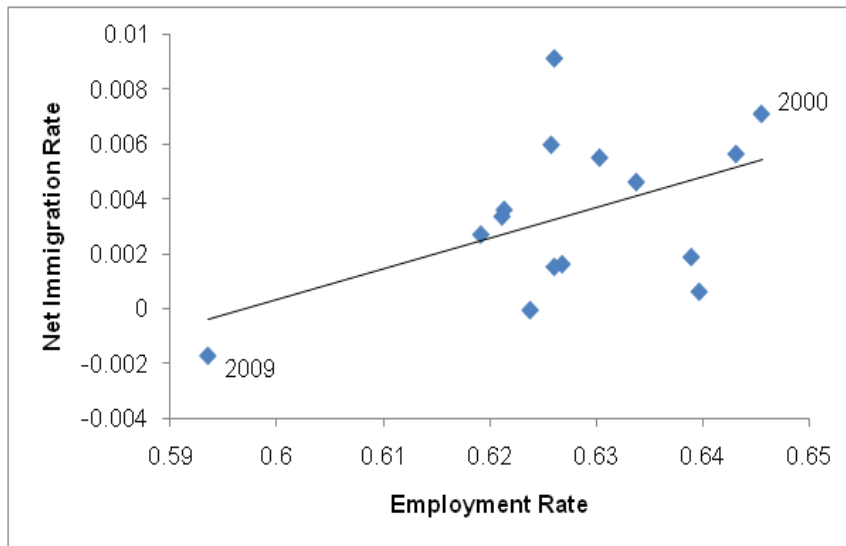
First, let me emphasize that the net inflow of immigrants into the United States already fluctuates to some extent with the economic cycle. Immigrants' tendency to arrive in larger numbers during periods of high labor demand has been identified in other countries as well. In general economists have estimated that for each 100 jobs lost in a country, 10 fewer immigrants enter (or 10 more leave). This is known as the 10 percent rule.²¹ Figure 1 shows this pattern for the United States: each point on the graph represents the net US immigration rate and the percentage of the population that is employed, for a given year between 1994 and 2009. Again, there is a significant and positive correlation close to 10 percent. The natural fluctuation of net immigration, therefore, already provides a natural mechanism to decrease net inflows during downturns.

²⁰ The difference between the count of foreign born from the Census/ACS and those registered with the Department of Homeland Security provide the estimates of unauthorized immigrants. Some adjustments are needed to account for a slight undercount of unauthorized immigrants as well as for immigrant mortality and remigration. See Michael Hofer, Nancy Rytina, and Bryan Baker, "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2009" (Washington, DC: Office of Immigration Statistics, Department of Homeland Security, 2010), www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2009.pdf.

²¹ See for instance Timothy J. Hatton, and Jeffery G. Williamson, *Global Migration and the World Economy: Two Centuries of Policy and Performance* (Cambridge, MA: MIT Press, 2005), <http://mitpress.mit.edu/catalog/item/default.asp?tttype=2&tid=10710>.



Figure 1. US Net Immigration Rate and Employment Rate, 1994-2008

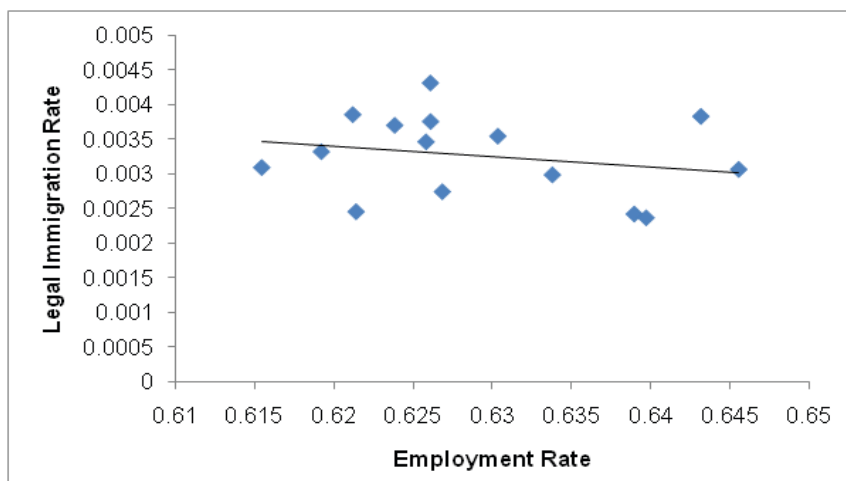


Source: Author's calculation using CPS data, 1994-2009

Note: The net immigration rate is calculated from CPS data and represents the increase in the number of foreign born as a proportion of the US population. The slope of the line is 0.11 and the standard error is 0.05.

What is also interesting, however, is that currently the adjustment of net total migration to the United States must take place only on the two “unregulated” margins: the remigration of authorized and unauthorized immigrants (who might leave in larger numbers during years of poor economic performance to go back to their country)²² and the net flow of the unauthorized. In fact if we plot the new legal immigrants recorded in the Department of Homeland Security data (as a proportion of the population) against the employment rate for the same 1994-2007 period (see Figure 2) there is no correlation at all between the two.

Figure 2. US New Legal Immigrant Residents and Employment Rate, 1994-2009



Source: Author's calculations based on data from CPS and US Department of Homeland Security, Office of Immigration Statistics.

Note: The legal immigration rate is calculated as the number of green cards issued as a proportion of the US population. The slope is -0.01 (or -1 percent), and the standard error is 0.02. This means that the correlation is not statistically significant.

²² See for instance Dean Yang, “Why do Migrants Return to Poor Countries? Evidence from Philippines’ Migrants Response to Exchange Rate Shocks,” *Review of Economics and Statistics*, 88 no. 4 (2006): 715-735. In this study, Yang finds that a negative income shock to the migrant significantly increases the probability of return in that year.



This is hardly a surprise, as around 70 percent of new green cards are awarded for family reasons (reunification and family sponsors) and the temporary visas (H-1B and H-2B) have a fixed quota (inflows total around 200,000 together) which is likely to be lower than the demand for these workers even in years of depressed labor demand.²³ Meanwhile, the data available on the total inflow of unauthorized immigrants between 2000 and 2009 confirm that there was a net inflow of about 500,000 persons per year over the years 2001-2006 (during the economic expansion) and a net outflow of about 500,000 annually in the years 2007-2009 (during the recession).²⁴ One of the reasons that it is hard to reform the current immigration system, which is based in large part on the flow of unauthorized immigrants, is that for all the costs and inefficiencies this system entails, it has been more responsive than any legal program in responding to economic incentives.

How Could Legal Immigration Become More Responsive to the Economic Cycle?

These facts suggest that legal immigration should also be made to respond to labor market conditions. How can this be done? One principle would be to allow the number of employer visa applications to serve as the main indicator of how strong labor demand is under current economic conditions. This obviates the need for the government to undertake the very difficult task of determining labor demand through incomplete and insufficiently timely statistical sources. For instance, suppose firms were able to apply and bid one quarter in advance for foreign workers' permits in programs such as the H-1B, in an auction. While the government could set the total number of permits, the relative bidding by employers would ensure that visas are allocated efficiently. Moreover a high winning price would signal high demand and could prompt a larger number of permits in the following quarter. In order to implement this policy, one would need to determine several details of the auction and some economists have spelled out how such a system could work.²⁵ An independent government agency or commission could be called upon to determine the number of permits issued and the details of implementation.²⁶

How much would net immigration ideally vary over the economic cycle? As a thought experiment, let us present here a few simple reference calculations. The current foreign-born population in the United States is about 40 million people (according to 2009 data) and over the last 20 years the return migration rate has been about 1.5 percent of the stock each year.²⁷ On average, therefore, if 600,000 new immigrants arrived each year, the size of the foreign-born population would remain unchanged (resulting in zero net immigration). While the number of returnees should be calculated more carefully if one would really like to implement immigration policies based on it, the basic point here is the following: as it is net

A labor-demand driven number of new visas can simply reinforce the natural cyclicity of immigration and speed up the capital and technology adjustment in the face of immigration.

²³ See Department of Homeland Security, *Yearbook of Immigration Statistics* (Washington, DC: Department of Homeland Security, 2008), www.dhs.gov/files/statistics/publications/yearbook.shtm.

²⁴ Hoefler, Rytina, and Baker, "Estimates of the Unauthorized Immigrant Population Residing in the United States."

²⁵ See Pia Orrenius and Madeline Zavodny, *Beside the Golden Door: US Immigration Reform in a New Era of Globalization* (Washington DC: American Enterprise Institute, forthcoming).

²⁶ Demetrios G. Papademetriou, Doris Meissner, Marc Rosenblum, and Madeleine Sumption, "Harnessing the Advantages of Immigration for a 21st Century Economy: A Standing Commission on Labor Markets, Economic Competitiveness, and Immigration" (Washington, DC: Migration Policy Institute, 2009).

²⁷ I use here the implicit return rate adopted in the study of Hoefler, Rytina, and Baker, "Estimates of the Unauthorized Immigrant Population," to calculate the reduction of unauthorized immigrants due to return.



immigration that affects the labor market and the productive outcomes in the US economy, we should think of 600,000 new immigrants as “the floor” that produces no changes at all in the current US labor market.

Allowing new entries through work-related visas in years of economic expansion on top of the 600,000 needed to maintain the stock would allow the United States to retain the positive long-run effects of immigration while minimizing the negative short-run effects. Implementing this policy would, of course, require careful thought about which types of visas should be encouraged to respond to the economic cycle, and I will not go into detail here. The basic principle, however, is that a labor-demand driven number of new visas can simply reinforce the natural cyclicity of immigration and speed up the capital and technology adjustment in the face of immigration. For instance if we assume that gross inflows of workers on employment-based visas of some kind (temporary or permanent) were allowed to increase by 300,000 during economic expansion in addition to the baseline of 600,000, and if we assume that in a given decade half of the years, on average, have strong economic growth, this would imply 1.5 million net new immigrants per decade, representing about 1 percent of the labor force of 150 million people. This, in turn, would imply a net increase of 0.26 percent of income per native worker over that period and no job losses either in the short or in the long run for native workers of high and low skill levels. These numbers are quite small and the US economy could easily adjust to such an inflow of immigrant workers in expansionary years.

Legal Immigration for Less-Skilled Foreign Workers

Another interesting fact emerging from the empirical analysis is that while immigration during downturns seems to hurt less-educated natives, in the long run immigration affects neither their employment nor their income negatively. The productivity gains that result from less-skilled immigration are likely to benefit the highly educated more, since these workers do not compete for the same jobs; but less-educated natives do not seem to suffer significant wage losses in the long run. Since less-skilled immigration appears to bring benefits for the aggregate economy without harming the wages of less-educated natives in the long run (and previous work suggests that there is also little effect on the relative wage distribution),²⁸ this implies that the US immigration system should find a way to admit a certain number of less-educated immigrants legally each year. Currently very little of the demand for these less-skilled workers can be satisfied legally, unless the workers have a close relative in the United States (or classify under special rules).

In other words, a share of work visas should be reserved for occupations typically performed by less-educated workers (and perhaps also those with a high content of manual and physical tasks, such as construction workers, janitorial workers, household cleaners, gardeners, and so on). Those types of jobs are the ones that US-born workers are increasingly shunning (at the current wage) and in which immigration has brought large benefits in terms of complementing native workers and allowing firms to expand. Approximately how many visas should be available for these less-skilled workers? Suppose one designed a system to admit workers legally to perform less-skilled work. In order to leave relative wages unchanged, the share of new inflows into less-skilled occupations would need roughly to mirror the occupational composition of foreign workers already in the United States. Over the past 15 years, approximately 46 percent of foreign-born workers have had a high school diploma or less — the typical education level of workers doing this type of job. If a total of 900,000 new arrivals were allowed in a given year (as in the previous example), this would imply that about 40 percent should be workers in low-skill occupations (360,000 of the 900,000)²⁹ and 60 percent workers in high-skill occupations. A rule along these lines would only mildly recalibrate the actual flows, but would allow less-skilled immigrants to come in as authorized workers, possibly reducing significantly the pressure to enter the United States illegally.

²⁸ Ottaviano and Peri, “Immigration and National Wages;” David Card, “Immigration and Inequality.”

²⁹ This number is more than five times as large as the current cap of H2-B visas for nonagricultural temporary/seasonal workers, which is currently at 66,000 per year, and is the only category for less-skilled workers to enter the country for jobs outside of agriculture. It is lower, however, than the peak inflows of unauthorized immigrants during the economic expansion. In addition to these temporary visas, 5,000 green cards per year are reserved for less-skilled workers.



VI. Conclusion

Let me add two more general considerations on the topic of employment-based visas. In general given the economic effects of immigration and its positive productive contribution to the US economy, I would be in favor of shifting the balance of new permanent resident visas in favor of those that are employment-based and away from those that are selected by family sponsorship. While this provision could be politically controversial, and while the unity of the immediate family (spouse and minor children) has to be preserved, the economic benefits of immigrants to the US economy should be one consideration when admitting other family members (such as adult siblings). The second consideration is that temporary visa programs such as H-1B, which allow holders to transition to permanent residence, may allow the adjustment of immigration to labor demand fluctuations. This analysis emphasizes that given the average tendency for immigrants to return to their country of origin, visa policy can produce the desired variation in net immigration simply by making new visa issuance respond to labor demand.

Let me conclude that the economic impact of immigrants on the US economy and on the employment and average wage of US native workers should be one — but cannot be the only — criterion to guide immigration policies. Nevertheless, the analysis dispels some myths about long-run economic costs, emphasizes the cost-benefit tradeoffs, and suggests a strategy to best absorb immigrants in the US productive structure. Currently these considerations are completely absent in the determination of quotas and new resident permits. The present analysis and some of its implications could be kept in mind when the current immigration system is reformed.



Appendices

Appendix 1. Methodology and Data

The data sources and the methodology to construct each component of gross state product are described in detail in an earlier paper.³⁰ Here, I briefly review the methodology.

A useful starting point to evaluate the aggregate economic impact of net immigration (equal to the inflow of immigrants minus the outflow of returnees and remigrants) is to identify its effect on total employment and on output per worker. The total effect of immigrants on US gross domestic product (GDP) is the product of those two effects. So any percentage change of US GDP can be decomposed into the sum of the percentage change in employment and the percentage change in output per worker. In turn a change in output per worker can be decomposed into four parts: A change in the intensity of physical capital per worker (more machinery, structure, and equipments); a change in the skill-intensity of workers (the share of workers with some college education); a change in hours worked per worker; and a change in technological productivity/efficiency per worker (called total factor productivity). Each of these components can be measured, provided we have data on gross product, employment, hours worked, workers' skill, and value of physical capital. So in compact notation (and using the expression GSP to denote gross state product) we can observe each term of the following expression in each US state and year:

$$\begin{aligned} (\% \text{ Change of GSP}) = & \\ (\% \text{ Change of Employment}) + (\% \text{ Change GSP per worker}) = & \\ (\% \text{ Change employment}) + (\% \text{ Change capital intensity}) + (\% \text{ Change skill intensity}) + (\% & \\ \text{Change hours per worker}) + (\% \text{ Change factor productivity}) & \end{aligned}$$

Immigration may affect each term of this decomposition in the short and in the long run. Our goal is to estimate the response of each of those terms to the net immigration rate (i.e. to the inflow of working immigrants as percentage of initial employment) in the short and long run. The estimated effects indicate the percentage impact of an increase of immigrants equal to 1% of initial employment on the corresponding variable.

The results presented in this paper come from a series of two-stage least squares regressions. For each term representing the percentage change of a component of output we identify the response within one year, two years, four years, seven years, and ten years to a 1 percent net change of employment due to immigration. We use a panel of 50 US states plus the District of Columbia. To identify the short-run effects up to seven years, we use data from the Current Population Survey for employment, population, and labor market variables together with data from the National Accounts and State Gross Domestic Product from the Bureau of Economic Analysis for capital and output over the period 1994-2008. For the long-run effect (ten-year changes), we use Census data on population and employment for every ten years over the period 1960-2008 and the same sources for data on gross product and capital.

The responses of each component of income to net immigration are captured by the estimated coefficient β_c in the following type of regression:

$$(\% \text{ Change of Component})_{s,t} = \Phi_t + \beta_c (\text{Net Immigration rate})_{s,t} + \varepsilon_{s,t}$$

where s indicates states; t indicates time intervals of (alternatively) one, two, four, seven, and ten years; and the percentage changes and net immigration rates are calculated relative to those intervals. The

³⁰ Giovanni Peri, "The Effect of Immigration on Productivity."



dependent variable is alternatively each of the terms in expression (1), Φ_t is a set of dummy variables capturing years-specific common effects, and $\varepsilon_{s,t}$ is a zero-mean random variable.

In order to interpret the estimated coefficients β_c as the impact of net immigration on the corresponding economic variable we need to make sure that the variation of immigration rates over time and across states is not driven by changes of those variables themselves (reverse causality). The presence of unobservable changes that would affect the economic variables as well as the immigration rates would also bias the coefficient estimates. In particular the cycles of economic expansion and recession would affect employment and productivity and also the net inflow of immigrants. A positive correlation between immigrants and native employment, can be driven by the creation of native and immigrant jobs during expansions. To solve this problem we use an instrumental variable strategy.³¹ As immigrants of a certain nationality tend to locate near communities of other immigrants of the same nationality, the cross-state variation of net immigration is affected by the pre-existing distribution of immigrants of each nationality. During years (or decades) of large total inflows of some national groups, the states where their pre-existing presence is large will receive large net inflow of immigrants for reasons unrelated to productivity and labor demand. Hence, by interacting the initial size of immigrant communities (or simply the distance of the state from the place of entry of immigrants) with the total yearly inflow of immigrants by nationality produces a predicted inflow of immigrants by state. Such prediction is purely driven by the revealed preferences of immigrants for locations as existing in the first year considered and not by the economic conditions of the state and their changes over the sample. We also use the distance of a state from the main ports of entry of immigrants (New York and Los Angeles) and from the border interacted with year dummies as predictor of the supply-driven inflow of immigrants in states more easily accessible to them. The prediction obtained using these instruments is correlated with the actual inflow of migrants in a state and should proxy for the supply-driven part of immigration. Therefore it should not be correlated with other factors affecting productivity (labor demand) of a state and hence it would be a valid instrument.³²

³¹ This strategy has been used to identify long-run effects of immigrants in several papers beginning with Card, “Immigrant Inflows, Native Outflows.” We extend it to the estimates of short-run effects.

³² As we use the distance-based instruments and the imputed immigrant instrument together, we can test the exogeneity of instrument hypothesis. The Sargan test never rejects the null of exogenous instrument at the 1% significance level.



Appendix 2. Response to Net Immigration Rates over Different Time Intervals, US States

The estimated effects indicate the percentage impact of an increase of immigrants equal to 1 percent of initial employment on the corresponding variable. For example, after one year, a 1 percent increase in the labor supply due to immigrants leads to a 0.98% increase in total employment, or a 0.02 percent decrease in native employment. Asterisks indicate whether the estimate is statistically significant. For example, the 0.02 percent change in native employment is not statistically different from zero. For the total employment estimates, a response of total employment smaller than 1 implies that some native jobs are lost when immigrants enter employment (crowding out). An estimated response larger than 1 implies that some natives would gain jobs as a consequence of immigration (crowding in).

Dependent Variable:	1-year 1994-2008	2-year 1994-2008	4-year 1994-2008	7-year 1994-2008	10-year interval 1960-2008
% response of total employment	0.98* (0.39)	1.69** (0.63)	0.85 (0.57)	1.18** (0.38)	1.10** (0.50)
% response of native employment	-0.02 (0.39)	0.69 (0.63)	-0.15 (0.57)	0.18 (0.38)	0.10 (0.50)
% response of GDP per worker	0.01 (0.32)	0.05 (0.54)	0.83** (0.31)	0.63* (0.36)	0.26** (0.11)
Components of GDP per worker					
% response of capital intensity	-0.30* (0.15)	-0.99* (0.40)	-0.61 (0.61)	-0.22 (0.42)	-0.02 (0.05)
% response of skill per worker	-0.07 (0.15)	-0.02 (0.22)	-0.13 (0.10)	-0.12 (0.17)	-0.21** (0.03)
% response of hours per worker	-0.05 (0.12)	0.04 (0.12)	0.11 (0.08)	0.15** (0.07)	0.07* (0.02)
% response of total factor productivity	0.11 (0.47)	0.48 (0.62)	1.01** (0.57)	0.51 (0.58)	0.43** (0.12)
Observations	714	357	204	102	255

Moving from column 1 to 5 we can track the total response over one, two, four, seven, and ten years. The top row shows the impact on total employment, while the second row isolates the impact on native employment. The third row shows the total effect on output per worker. The other four rows show the effects on individual components of output per worker which are, respectively, capital intensity, skill per worker, hours per workers, and total factor productivity.³³

³³ Each coefficient is estimated using 2 stage least squares from a separate regression. The dependent variable in each regression is the net change in foreign-born employment relative to employment at the beginning of the period. The units of observations are US states (plus DC) over the time interval. Instruments are the imputed immigrants from their national 1990 distribution and distance from ports of entry interacted with time dummies. Heteroskedasticity and cluster-robust standard error are in parentheses. Each regression includes time-fixed effects.

Appendix 3. Response to Net Immigration Rates in Periods of Expansion and Downturn³⁴

Dependent Variable:	1-year differences 1994-2008		2-year differences 1994-2008		4-year differences 1994-2008		7-year differences 1994-2008	
	Effect if output gap < 0	Effect if output gap ≥ 0	Effect if output average gap < 0,	Effect if output average gap ≥ 0,	Effect if output average gap < 0,	Effect if output average gap ≥ 0,	Effect if output average gap < 0,	Effect if output average gap ≥ 0,
% response of total employment	0.57** (0.17)	0.63** (0.12)	0.63** (0.26)	0.95** (0.15)	0.73 (0.50)	1.07** (0.26)	1.50** (0.25)	1.21** (0.34)
% response of native employment	-0.43** (0.17)	-0.37** (0.12)	-0.37 (0.26)	0.05 (0.15)	-0.27 (0.50)	0.07 (0.26)	0.50 (0.25)	0.21 (0.34)
% response of GDP per worker	-0.59** (0.18)	-0.17 (0.12)	-0.55** (0.22)	-0.05 (0.28)	-0.17 (0.30)	0.36 (0.31)	0.08 (0.39)	0.36 (0.31)
Components of GDP per worker								
% response of capital intensity	-0.07 (0.09)	-0.03 (0.05)	-0.32 (0.22)	0.07 (0.09)	-0.33** (0.11)	-0.17* (0.08)	-0.12 (0.28)	-0.15 (0.10)
% response of skill per worker	0.07 (0.12)	-0.07 (0.09)	-0.34* (0.14)	-0.03 (0.09)	-0.34 (0.29)	0.11 (0.13)	0.15 (0.10)	0.11 (0.28)
% response of hours per worker	-0.02 (0.06)	-0.03 (0.05)	0.01 (0.08)	0.07 (0.08)	0.05 (0.10)	0.09 (0.07)	0.09 (0.06)	0.02 (0.11)
% response of total factor productivity	-0.57** (0.22)	0.01 (0.17)	-0.21 (0.38)	0.29 (0.43)	0.20 (0.48)	0.47 (0.40)	0.24 (0.37)	0.47 (0.45)
Observations	714	714	357	357	204	204	102	102

³⁴ Each couple of coefficients (for Output Gap ≥ and < 0) is estimated within the same regression allowing differential response to the immigration rate. The method of estimation is 2SLS. The dependent variable in each regression is the net change in foreign-born employment relative to employment at the beginning of the period. The units of observations are US states (plus DC) over the time-interval. Instruments are the imputed immigrants from their national 1990 distribution and distance from ports of entry interacted with time dummies. Heteroskedasticity- and cluster-robust standard errors are reported in parenthesis. Each regression includes time fixed effects.



Appendix 4. Response to Net Immigration Rates of Employment of Less-Educated Natives³⁵

% Effect on less educated native workers	1-year		2-year		4-year		7-year	
	Downturn	Expansion	Downturn	Expansion	Downturn	Expansion	Downturn	Expansion
<i>average</i>	-0.32* (0.19)		-0.38 (0.28)		-0.20 (0.36)		0.54* (0.33)	
<i>Separating Downturns and Expansions</i>	-0.51** (0.23)	-0.16 (0.23)	-0.81** (0.30)	-0.03 (0.35)	-0.75** (0.36)	0.44 (0.36)	0.70 (0.44)	0.34 (0.36)
Observations	714		357		153		102	

³⁵ The specifications are as in Table 1 and 2. The method of estimation is Ordinary Least Squares regression with time-fixed effects. The dependent variable is the change in employment of native workers with high school degree or less relative to initial employment in that group and the explanatory variable is the net change in foreign born as percentage of initial employment. Heteroskedasticity- and cluster-robust standard errors are reported in parenthesis. Each regression includes time fixed effects.



Works Cited

- Barcellos, Silvia. 2009. The Dynamics of Immigration and Wages. Manuscript, Princeton University. www.princeton.edu/~silvie/Barcellos_JMP.pdf.
- Bureau of Labor Statistics (BLS). 2010. The Employment Situation: January 2010. News release, February 5, 2010. www.bls.gov/news.release/archives/empsit_02052010.pdf.
- Card, David. 2001. Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration. *Journal of Labor Economics* 19 (1): 22-64.
- _____. 2009. Immigration and Inequality. NBER Working Paper no. 14683. www.nber.org/papers/w14683.pdf.
- Cortes, Patricia. 2008. The Effect of Low-Skilled Immigration on U.S. Prices: Evidence from CPI Data. *Journal of Political Economy* 116 no 3 (2008): 381-422.
- Department of Homeland Security. 2008. Yearbook of Immigration Statistics. Washington, DC: Department of Homeland Security. www.dhs.gov/files/statistics/publications/yearbook.shtm.
- Gauthier-Loiselle, Marjolaine and Jennifer Hunt. 2010. How Much Does Immigration Boost Innovation? *American Economic Journal: Macroeconomics* 2 (2):31-56.
- Hatton, Timothy J. and Jeffery G. Williamson. 2005. *Global Migration and the World Economy: Two Centuries of Policy and Performance*. Cambridge, MA: MIT Press. <http://mitpress.mit.edu/catalog/item/default.asp?ttype=2&tid=10710>.
- Hoefer, Michael, Nancy Rytina, and Bryan Baker. 2010. Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2009. Washington, DC: Office of Immigration Statistics, Department of Homeland Security. www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2009.pdf.
- Kerr, William R. and William F. Lincoln. Forthcoming. The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention. *Journal of Labor Economics*. www.people.hbs.edu/wkerr/Kerr_Lincoln_JOLE3_H1B_Paper.pdf.
- Lewis, Ethan. 2005. Immigration, Skill Mix, and the Choice of Technique. Federal Reserve Bank of Philadelphia Working Paper no. 05-08. www.philadelphiafed.org/research-and-data/publications/working-papers//2005/wp05-8.pdf.
- Neumark, David and Francesca Mazzolari. 2009. Beyond Wages: The Effect of Immigration on the Scale and Composition of Output. NBER Working Paper 14900. www.nber.org/papers/w14900.pdf.
- Orrenius, Pia and Madeline Zavodny. Forthcoming. *Beside the Golden Door: US Immigration Reform in a New Era of Globalization*. Washington DC: American Enterprise Institute.



Ottaviano, Gianmarco and Giovanni Peri. Immigration and National Wages: Clarifying the Theory and the Empirics. National Bureau of Economic Research Working Paper 14188.
www.nber.org/papers/w14188.

Papademetriou, Demetrios G., Doris Meissner, Marc Rosenblum, and Madeleine Sumption. 2009. Harnessing the Advantages of Immigration for a 21st Century Economy: A Standing Commission on Labor Markets, Economic Competitiveness, and Immigration. Washington DC: Migration Policy Institute.
www.migrationpolicy.org/pubs/StandingCommission_May09.pdf.

Peri, Giovanni. 2009. The Effect of Immigration on Productivity: Evidence from U.S. States. NBER Working Paper 15507.
www.nber.org/papers/w15507.

Peri, Giovanni and Chad Sparber. 2009. Task Specialization, Immigration and Wages. *American Economic Journal: Applied Economics* 1 (3):135-169.

Yang, Dean. 2006. Why do Migrants Return to Poor Countries? Evidence from Philippines' Migrants Response to Exchange Rate Shocks. *Review of Economics and Statistics*, 88 (4): 715-735.



About the Author



Giovanni Peri is an Associate Professor of Economics at the University of California, Davis and a Research Associate of the National Bureau of Economic Research in Cambridge, Massachusetts. He has done research on human capital, growth, and technological innovation. More recently he has focused and published extensively on the impact of international migration on labor markets and on productivity and on the determinants of international migration.

He recently received a John D. and Catherine T. MacArthur Foundation grant for the study of international migration and its impact in the United States and a World Bank grant for the study of return migration in Europe.



The Migration Policy Institute is a nonprofit, nonpartisan think tank dedicated to the study of the movement of people worldwide. MPI provides analysis, development, and evaluation of migration and refugee policies at the local, national, and international levels. It aims to meet the rising demand for pragmatic and thoughtful responses to the challenges and opportunities that large-scale migration, whether voluntary or forced, presents to communities and institutions in an increasingly integrated world.

www.migrationpolicy.org

1400 16th Street NW
Suite 300
Washington, DC 20036

Tel: 001 202-266-1940
Fax: 001 202-266-1900