

Article History: Received: 20 December 2017 Accepted: 11 June 2018.

21st Century Slowdown: The Historic Nature of Recent Declines in the Growth of the Immigrant Population in the United States

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Abstract

We document that the slowdown in the growth of the immigrant population in the United States since 2000 is the largest observed using Census data since 1870. Non-parametric tests reveal that the sharp decline is similar in magnitude to changes in migration growth rates that followed the two major historical regime changes in U.S. immigration policy. Migration rates are slowing across nearly all age, sex, educational and country of origin categories that we examine. We find that the stock of adult migrants under age 30 is smaller in 2015 than in 2000, a potential precursor to a declining overall stock, as was seen around the introduction of the national quotas regime in 1920. Heterogenous changes have led to slower declines for men than women, and an increase in the relative scarcity of low-skilled labor. Approximately half of the overall decline is due to falling Mexican immigration.

Keywords: immigration; demography; population; historical trends.

Introduction

In this paper, we document the historic nature of the recent slowdown in immigration to the U.S. We examine changes in the stock of foreign-born adults (henceforth, *immigrant stock*) over nearly one hundred and fifty years. We find that while the immigrant stock in 2015 was at a record high level, the growth rate in the stock was the lowest recorded since the 1960s, when major reform to the immigration system took place. In addition, we show that the post-2000 slowdown in the growth of the immigrant stock has been the largest recorded decline in over a century. Examining immigrants by age category, we find that the largest slowdown can be found among immigrants under 30. The growth rate for men has declined more than the growth rate for women and the female foreign born population is now growing more quickly than the male foreign born population for the first time in four decades. In addition, heterogeneity in the slowdown across educational categories has increased the share of high-

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Acknowledgement: We are grateful for feedback received at University of Nevada Reno, UC Santa Barbara, the Western Economics Association and the Southern Economics Association, and from Briggs Depew, Sankar Mukhopadhyay and Jeanne Wendel.



skilled labor relative to the 1990s trajectory. Separating our analysis by country of origin reveals that some of these larger declines have occurred for traditionally important sending countries. We discuss the importance of these findings for the future of the foreign born population in the United States.

Methods and Findings

We employ IPUMS Census and ACS data (Ruggles et al., 2010) to construct our counts of the immigrant population. We focus on civilians age 16 and older and exclude residents of institutions and other group quarters in all years. In our main analysis, we use decennial censuses 1870, 1880, 1900-2000, and the American Community Survey (ACS) of 2015. We also conduct exploratory analysis using ACS data from 2005 to 2014. Changes in the logs of these counts are used to estimate annualized growth rates; second differencing yields changes in growth rates.¹

A common concern with census data from recent years is that it may miss undocumented immigrants. Passel, Vera and Gonzalez-Barrera (2013) demonstrates a very high coverage rate of undocumented immigrants in the data, and document how the Census Bureau recognized the danger of undercounting in the early 2000s and made adjustments that increased the estimated size of the undocumented population. If undercounting is a concern, changes in Census methodology since 2000 if anything will underestimate our estimate of the slowdown.

Table 1 displays the immigrant stock in the U.S. from 1870-2015, allowing us to document the historic nature of the recent slowdown in immigration. During the “First Great Migration” from 1850-1913, the U.S. maintained relatively open borders and over 30 million immigrants came to the U.S. (Abramitzky, Boustan, and Eriksson, 2014). The restrictionist “National Origins Quotas” regime, which began in 1924, tightened total inflow to the U.S. by allocating quotas by country based upon pre-existing stocks in the population and limiting total annual immigration from the Eastern Hemisphere to 150,000 persons Borjas (2001). After the 1920s, the stock declined for four straight decades. This trend reversed after the passage of the liberalizing Immigration and Nationality Act of 1965, ushering in a renewed period of growing immigration. The last row of the table shows that the growth rate of the immigrant stock since 2000 is the lowest it has been since the first full decade falling in the liberalized regime, with the annualized growth rate in the immigrant stock decreasing by 2.09 percentage points from 4.59% in the 1990s to 2.50% between 2000 and 2015.

¹ The 1890 census is omitted, as it was destroyed in a fire. Thus, the 1880 census is used to create the annualized growth rate reported for 1900, and the difference between this rate and the 1870-1880 growth rate is used to calculate the change in the annualized growth rate for 1900.



Table 1. Census Data - All

Year	Immigrants	Ann. Growth	Ann. Growth Rate	Δ Ann. Growth Rate
1870	4,702,884			
1880	5,793,314	109,043	0.0209	
1900	9,430,260	181,847	0.0244	0.0035
1910	11,904,601	247,434	0.0233	-0.0011
1920	12,865,405	96,080	0.0078	-0.0155
1930	13,378,056	51,265	0.0039	-0.0039
1940	11,372,502	-200,555	-0.0162	-0.0201
1950	10,308,469	-106,403	-0.0098	0.0064
1960	9,013,319	-129,515	-0.0134	-0.0036
1970	8,982,300	-3,102	-0.0003	0.0131
1980	12,781,620	379,932	0.0353	0.0356
1990	18,636,900	585,528	0.0377	0.0024
2000	29,492,436	1,085,554	0.0459	0.0082
2015	42,889,382	893,130	0.0250	-0.0209

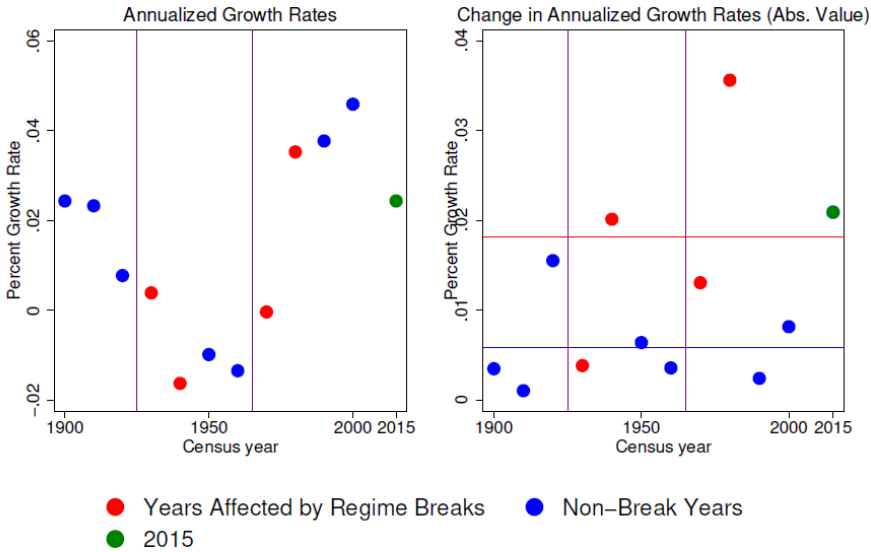
In Figure 1, we demonstrate the historic nature of this decline. The left and right panels display annualized growth rates and changes in the absolute value of the growth rate, respectively. While the post-2000 growth rate at 2.5% was not historically low, the change in the growth rate was. In fact, only the acceleration in immigration between the 1960s and 1970s was a faster change in the growth rate, and no decade has exhibited a larger decline.

It is important to note that this result is not driven by our choice of 2015 as an end point for our analysis. In Table 2, we repeat our analysis using different end years corresponding with each full one percent ACS sample available. We see that the estimated slowdown in the growth rate does increase as we move our end point to later years. However, as early as 2005, around 60% of the slowdown had already occurred, suggesting that post-2000 changes in immigration policy and enforcement, along with long term secular trends in labor demand, may have played an important role in this decline. However, the fact that the estimated slowdown increases from 1.24 percentage points in 2005 to 2.03 percentage points by 2012, along with the stabilization in the slowdown since 2012, suggests that the *Great Recession* and anemic post-recession recovery likely played a key role in slowing migration.

In the right panel of Figure 1, we categorize pre-2000 decades as “regime break years” if one of the two major immigration reforms took place during that decade or the previous decade. These decades, denoted with red dots, include the 1920s, 1930s, 1960s and 1970s. “Non regime break” years are denoted with blue dots. A horizontal line shows the average change in the growth rate for each type of observation. Regime break periods experienced on average a 1.8 percentage point change in the absolute value of the growth rate, while non-regime break periods experienced an average change of only 0.6 percentage

points. In the figure, we can see that the post-2000 period is more similar to an observation which has been affected by a major regime shift than it is to the typical observation.

Figure 1. Long Run Migration Trends



Note: Horizontal line displays averages for break and non-break years.
 Source: ACS and Decennial Census (IPUMS).

Table 2. Census Data Changes Since 2000

Year	Immigrants	Ann. Growth	Ann. Growth Rate	Δ Ann. Growth Rate
1990	18,636,900			
2000	29,492,436	1,085,554	0.0459 ¹	
2005	34,867,919	1,075,097	0.0335	-0.0124
2006	36,127,037	1,105,767	0.0338	-0.0121
2007	36,694,813	1,028,911	0.0312	-0.0147
2008	36,691,897	933,683	0.0282	-0.0177
2009	37,471,742	886,590	0.0266	-0.0193
2010	39,008,477	951,604	0.0280	-0.0179
2011	39,642,317	922,716	0.0269	-0.0190
2012	40,118,923	885,541	0.0256	-0.0203
2013	40,849,496	873,620	0.0251	-0.0208
2014	41,856,993	883,183	0.0250	-0.0209
2015	42,889,382	893,130	0.0250	-0.0209

¹ The year 2000 annualized growth rate reflects change since 1990; all other years reflect change since 2000.

We formally test for this using a Mann-Whitney test and treating the growth rate estimates as population parameters. There are sufficient enough differences between the 4 regime break periods and 7 non-regime break periods to reject (at the 10% level) a null of equality in the data generating process between these two categories of observations, with a p-value of .0588. A similar test fails to reject the null when comparing the 2000-2015 growth rate to the four regime break observations with a p-value of 0.4795, while only narrowly failing to reject when comparing to the seven non-regime break observations, with a p-value of .1266. This suggests that growth rate changes observed in the 2000-2015 period are similar in scope to other major breaks in immigration regime.

This historic slowdown in immigration can be understood at a deeper level by repeating our analysis focusing on immigrants by age, education, sex, and country of origin. Table 3 displays annualized growth rates in the immigrant stock broken down by sex and age group. Table 4 displays annualized growth rates in the immigrant stock broken down by education, which is available only after 1950 because such information was not gathered in earlier Census surveys.²

Three important things can be observed from Table 3. First, in the post-2000 period, growth rates for older immigrants were higher than younger immigrants, with there actually being a decline in the number of adult immigrants under 30, while the reverse was true in the 1980s. As seen in the appendix, the post-2000 change in growth rate for all but the oldest immigrant groups is the most negative recorded since the 1930s. Second, the four decades of declining immigration that the U.S. experienced during the middle of the 20th Century were preceded by two decades of negative growth in the under 30 population. This age-based analysis provides more context to the historic slowdown in migration and suggests that, as was the case with the middle of the 20th Century, the United States may be at the early stages of a demographic transition in which the absolute number of immigrants begins to decline.

Third, in Table 3, the differences between men and women are also noteworthy. Since 2000, the immigrant growth rate for women was higher than it was for men for the first time since the 1960s. This may mark another important transition. The male growth rate was higher than the female growth rate from 1870-1910. Starting in the 1910s, the female immigrant population grew faster (or shrank less quickly) than the male population for the next half century, before the male growth rate again exceeded the female growth rate during the 1970s, 1980s and 1990s. It should be noted that the middle period, in which the female growth rate exceeded the male growth rate, was a period of generally slowing migration, while the two periods in which the male growth rate

² Tables A1 to A10 in the Appendix present the full set of information presented in Table 1 by age, education, and sex categories.

exceeded the female growth rate corresponded to periods of pronounced immigration growth. This change has occurred in spite of the fact that migration costs for females may have increased more than for males on account of the increased danger from unauthorized entry into the United States (Lozano and Lopez, 2013). Our finding is thus consistent with male migration being more cyclical than female migration, and again is evidence that we may be in the midst of an important transition period in immigration.

Table 3. Annualized Growth Rates by Sex and Age Category

Year	Male	Female	Under 30	30-39	40-49	Over 50
1880	0.0214	0.0203	-0.0038	0.0149	0.0256	0.0515
1900	0.0246	0.0241	0.0265	0.0227	0.0161	0.0298
1910	0.0270	0.0189	0.0353	0.0165	0.0295	0.0136
1920	0.0060	0.0099	-0.0208	0.0198	0.0114	0.0193
1930	0.0016	0.0066	-0.0224	-0.0116	0.0198	0.0189
1940	-0.0190	-0.0132	-0.0803	-0.0498	-0.0176	0.0171
1950	-0.0130	-0.0065	-0.0251	-0.0608	-0.0331	0.0122
1960	-0.0178	-0.0092	0.0047	0.0065	-0.0577	-0.0084
1970	-0.0066	0.0051	0.0619	0.0199	0.0174	-0.0215
1980	0.0370	0.0338	0.0809	0.0652	0.0338	0.0043
1990	0.0428	0.0332	0.0452	0.0603	0.0540	0.0103
2000	0.0481	0.0438	0.0390	0.0501	0.0619	0.0387
2015	0.0233	0.0265	-0.0037	0.0140	0.0310	0.0473

Table 4 displays the growth rates for immigrants by category of education. In the most recent period, growth rates are higher for immigrants with additional education, but have declined since 2000 at all levels except for those with some college. As noted in Depew, Norlander, and Sorensen (2013), growth rates are declining even for college graduates since 2000, and either higher rates of out-migration or decreased immigration may have led to nearly 300,000 fewer college graduates than trend growth suggested.

Table 4. Annualized Growth Rates by Educational Category

Year	HS Dropout	HS Graduate	Some College	College Graduate
1950	-0.0038	-0.0616	-0.0544	-0.0623
1960	-0.0346	0.0907	0.1245	0.1090
1970	-0.0205	0.0377	0.0418	0.0538
1980	0.0085	0.0507	0.0794	0.0851
1990	0.0102	0.0422	0.0725	0.0631
2000	0.0381	0.0606	0.0180	0.0625
2015	0.0083	0.0224	0.0326	0.0423



We further explore the skill-related consequences of the differential change in the immigrant growth rate in Table 5. The top panel of the table gives the overall number of civilians over the age of 16 for both immigrants and natives in both 2000 and 2015. The panel also presents a counterfactual level of immigrants in each educational category, had the 1990s immigrant growth rates for each educational category continued until 2015. In the second panel, we convert these counts into shares. The third panel aggregates the two low skilled and two high skilled educational factors, which is appropriate for considering labor market effects if there is perfect substitutability within the high and low skilled category (Card, 2009; Ottaviano and Peri, 2012). We see that in both 2000 and 2015, the addition of the foreign born into the labor force only slightly increases the relative abundance of low-skilled labor, consistent with the finding in Card (2009) that immigration is relatively skilled balanced.

Regarding the slowdown, had the immigration growth patterns from the 1990s continued for each educational category, low-skilled labor would have been much more abundant. In 2015, the immigrant population increases the share of the labor force that is low-skilled by 1.1 percentage points. Had the 1990s patterns continued, the immigrants would have increased this share by 3.6 percentage points, which implies that the slowdown has increased the relative scarcity of low-skilled workers. To the extent that an increased supply of workers may potentially create downward pressure on wages, this finding suggests that the recent slowdown in immigration growth has reduced any downward pressure on low-skilled wages. This is especially important in the context of the popular nested constant elasticity of substitution production function model used by Borjas (2003), Card (2009), Ottaviano and Peri (2012) and Edwards and Ortega (2017).

Table 5. Annualized Growth Rates by Educational Category

	High School Dropouts	High School Graduates	Some College	College Graduates
2000 (Natives)	29,760,957	72,143,284	38,068,120	39,289,515
2000 (Immigrants)	9,635,721	8,924,696	4,441,418	6,490,601
2015 (Natives)	22,879,432	74,369,753	50,734,210	56,609,158
2015 (Actual Immigrants)	10,919,258	12,488,249	7,247,970	12,233,905
2015 (Immigrants with 90s growth)	16,883,873	21,570,876	5,804,146	16,114,580

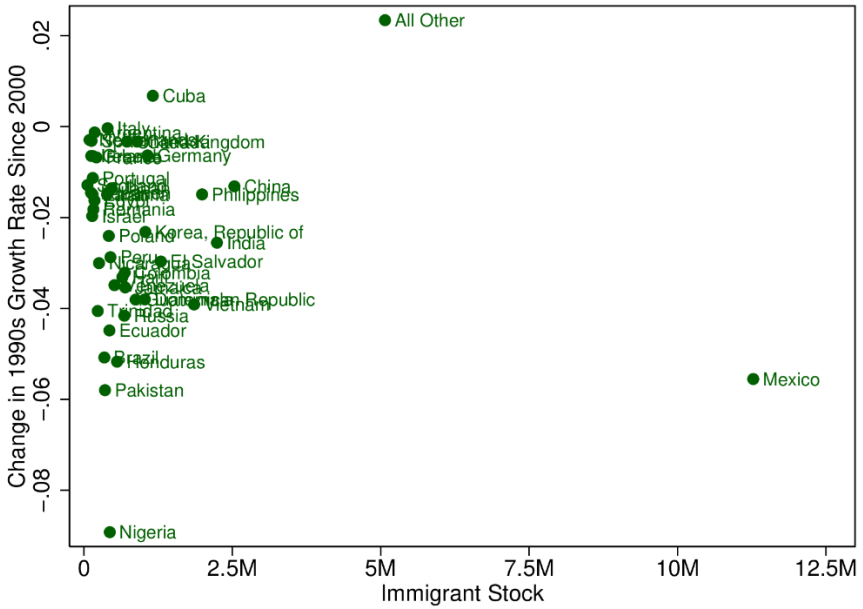
Table 5. continued.

	Shares			
2000 (Natives)	16.6%	40.2%	21.2%	21.9%
2000 (Immigrants)	32.7%	30.3%	15.1%	22.0%
2000 (Natives and Immigrants)	18.9%	38.8%	20.4%	21.9%
2015 (Natives)	11.2%	36.4%	24.8%	27.7%
2015 (Actual Immigrants)	25.5%	29.1%	16.9%	28.5%
2015 (Immigrants with 90s growth)	28.0%	35.7%	9.6%	26.7%
2015 (Natives and Actual Immigrants)	13.7%	35.1%	23.4%	27.8%
2015 (Natives and Immigrants with 90s growth)	15.0%	36.2%	21.3%	27.4%
	Low Skill		High Skill	
2000 (Natives)	56.8%		43.2%	
2000 (Immigrants)	62.9%		37.1%	
2000 (Natives and Immigrants)	57.7%		42.3%	
2015 (Natives)	47.5%		52.5%	
2015 (Actual Immigrants)	54.6%		45.4%	
2015 (Immigrants with 90s growth)	63.7%		36.3%	
2015 (Natives and Actual Immigrants)	48.8%		51.2%	
2015 (Natives and Immigrants with 90s growth)	51.2%		48.8%	

Figure 2 displays how the post-2000 change in the growth of the immigrant stock by source country varies with the 1990 size of the source country immigrant stock. It is clear that some of the larger source countries have exhibited significant declines. In fact, the growth rate for Mexico declined by over five percentage points for reasons discussed in Hanson and McIntosh (2010) and Villarreal (2014). Had this slowdown not occurred, the overall slowdown would have been almost half as small. Also among the top 10 sending countries, both Vietnam and the Dominican Republic experienced declines in the growth rate on order of close to four percentage points. The figure also reveals how geographically widespread the slowdown in migration growth has been. In fact, of the 43 individual countries that we examine, growth has increased only for Cuba, at a rate of less than 0.7 percentage points. Together, the across the board declines suggest that important pull factor changes have taken place which have made the U.S. a less attractive destination.

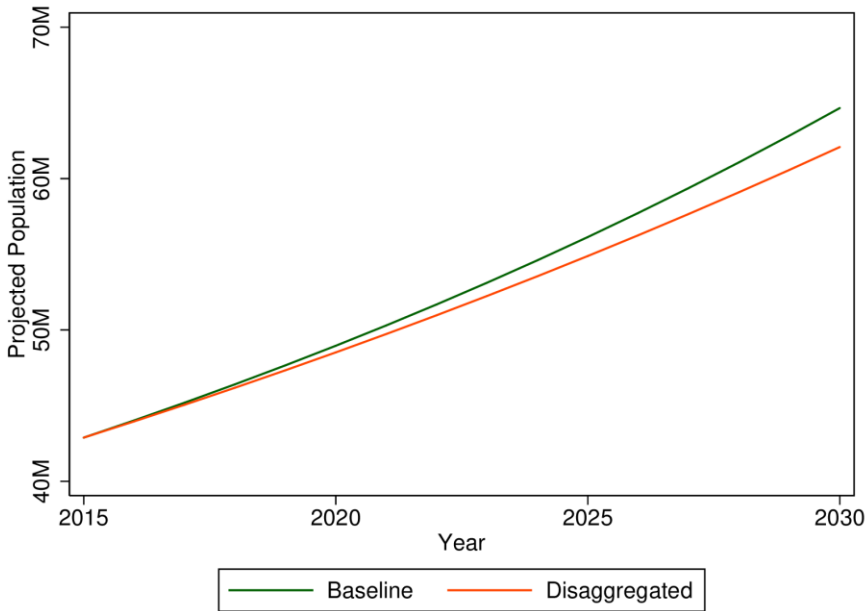


Figure 2. Change in Growth Rate Since 1990s by Size of Immigrant Stock from Sending Country



This heterogeneity has important implications for future changes in immigrant population: national and regional immigration patterns can change suddenly and unexpectedly (e.g. Massey and Canton, 2017), as when heightened border enforcement decreased circular migration between the U.S. and Mexico, or when violence in Central America led to an increase in emigration, which contributed to the rise in the unauthorized population from Latin America in the last several decades (Massey and Pren, 2014). In Figure 3, we display projections of the immigrant stock with current post-2000 growth rates both with and without accounting for heterogeneous growth rates by country of origin. An additional 2.57 million immigrants are projected in 2030 when we do not account for this heterogeneity, underscoring the importance of recognizing that immigration has slowed considerably for traditional source countries.

Figure 3. Baseline and Disaggregated Forecasts of Immigrant Stock



Note: half of the decline is due to Mexico.

Discussion

While it is beyond the scope of this paper to determine the causes of the post-2000 decline in migration, possible causes of this historic decline have been suggested by scholars and theories of migration. Below, we discuss three possible candidate explanations of the post-2000 decline: increasing costs to migration due to increased border security and reduced attractiveness of the U.S. as a destination, demographic and economic change in sending countries that increase the benefits of staying, and finally, decreased benefits of migration due to weak economic factors in the U.S. labor market.

Dating back to Sjaastad (1962), economists studying migration have typically viewed migration as a rational decision undertaken by individuals when the gross benefits to migration outweigh the costs. The New Economics of Labor Migration (Stark and Bloom, 1985) has greatly broadened this model of migration to include factors, such as family situation, but the gross benefits can be broken down broadly into the difference between the outcomes that the potential migrant would experience in the host country relative to the outcomes that will be experienced in the sending country.

Increased enforcement along the U.S. border since the terror attacks of September 11th could raise the costs of migration. The empirical literature,

however, does not provide clear evidence that increased enforcement has a strong deterrence effect, while suggesting there are other unintended consequences. For example, increased enforcement may change the composition of migrants (Lozano and Lopez, 2013), and increased efforts to enforce borders in localities may change the border crossing of entry (Sorensen and Carrión-Flores, 2007), or the ultimate destination within the U.S. (Bohn and Pugatch, 2015). Gathmann (2008) finds that the costs to a migrant of being smuggled have increased with more intense enforcement, though the demand for smuggling has remained relatively constant, suggesting that increased enforcement may subsidize the profits of human smugglers without decreasing unauthorized migration. Hanson and Spilimbergo (2001) show that enforcement along the U.S. border decreases when there are positive demand shocks to industries in need of unauthorized immigrants as workers, suggesting that border enforcement has a complex relationship with the political economy.

Growing cultural resistance to immigrants (xenophobia) in the U.S. that goes beyond border enforcement can also raise migration costs and decrease the attractiveness of the U.S. as a destination. Since 2000, legislative changes led to a dramatic decline in the number of skilled guest workers visas available under the popular H-1B program, impacting not just how many migrants entered the U.S., but also the countries from which migrants arrived (Mayda et al, 2017). Global attitude surveys have shown that favorable opinions of the U.S. have been volatile but on a downward trend in the 21st century, and while U.S. public attitudes toward immigration's impact have become more favorable to immigration overall since 2000, the issue has become more partisan, and views have become less favorable in the Republican party in particular (Pew Research Center, 2017; Rainie and Brown, 2016). Rising hostility to immigration includes new obstacles to arrival, settlement, and employment at the state and local level that can be thought of as contributing to an increase in costs. For example, state-level anti-immigrant legislation has caused immigrants to move to more immigrant friendly states (Amuedo-Dorantes and Lozano, 2015).

On the sending-country (push) side, two leading explanations for declining migration to the U.S include improving labor market conditions in sending countries as well as changing demographic patterns. Work by Massey, Durand, and Pren (2014) argues that the demographics of Mexico better explain migration flows than do changes in border enforcement. Hanson, Liu, and McIntosh (2017) also document more recent declining migration rates, especially amongst the low skilled, and offer both of these factors as possible explanations. Hanson and McIntosh (2010) attribute the decline in fertility rates among Mexican women that took place between 1970 and 2000 (“one of the fastest ever recorded”) as a major cause of declining migration from Mexico.

The final candidate we discuss as a possible explanation for our findings is that the US has become a less attractive destination for migrants due to a poorly

performing labor market. Labor markets have clearly weakened since the boom of the 1990s. According to Bureau of Labor Statistics (2018) data, during the 1990s, the U.S. labor market created nearly 22 million new jobs. From the turn of the 21st century through May of 2018, labor markets have created less than 18 million new jobs. Thus, 21st century labor markets have created jobs at only 45% the rate of job creation in the 1990s; of course, accounting for population growth would reveal an even bleaker picture of job creation.

If declining labor market demand serves as a plausible explanation for slowing migration, we would expect to see both a decrease in employment rates among natives, as well as larger decreases in employment rates among natives for the same demographic groups for which we observe the largest declines in immigration. Indeed, data from the 1990 and 2000 5% PUMS along with data from the 2015 ACS show that the employment to population ratio (EPOP) remained essentially unchanged from 62.4 to 62.3 between 1990 and 2000, while decreasing significantly to 59.8 between 2000 and 2015. We also see that since 2000, EPOP decreased by 5% for men but only 1% for women, consistent with our finding that immigration has declined more for men than it has for women. In addition, decreases in EPOP were by far the largest for younger native-born workers (3.5% decline for workers under 30, stable for workers in their 30s, 1% decrease for workers in their 40s, and 3% increase for workers above 50), and slightly less for lower educated workers than for workers with at least some college education (4% vs 5% declines), largely consistent with the observed pattern of declining migration that we observe.

These declines in the employment to population ratio can also be explained by labor supply changes. In fact, Cadena (2013) shows that recent increases in native labor market supply may crowd immigrants out of labor markets. However, a body of recent work establishes that there has been declining labor market demand for many groups of workers. Autor and Wasserman (2013) argue that labor demand has declined for many workers on account of technological change, as well as on account of global trade. Autor, Dorn, and Hanson (2013) demonstrates that increased competition with Chinese imports has negatively affected workers in the U.S. and provides some evidence that effects are more negative for younger and male workers. Ottaviano, Peri, and Wright (2013) provides evidence that immigrant workers are also affected by increased “offshoring” of jobs. In short, the recent literature supports the notion that changes in labor demand have made the U.S. labor market a less attractive destination specifically for the types of workers for which we have observed declining migration.

Conclusion

We have highlighted the historic nature of changing immigration to the United States in the 21st Century. The change in the growth rate of the foreign born



population since the 1990s has been the second largest change in absolute value that we observe using data dating back to 1870, and the largest decrease. In addition, this immigration slowdown has been more pronounced among younger, male, and lower educated groups of immigrants, and for immigrants from some of the largest traditional source countries.

These trends may have important consequences on the size and makeup of the immigrant population over the coming decades. Changes to the age and education structure of immigrants may affect the relative wages of natives. Faster declines in immigration among males may have a number of important consequences by affecting the sex ratio of immigrants. Finally, given low natural population growth, declining growth of the foreign born population may lead to declining population in the US.

Clearly, the recent decline in migration to the United States is a complex issue with many plausible explanations. Indeed, decomposition analysis by Norlander and Sørensen (2016) suggests that changes in both push and pull factors have played a significant role in the decline. Our hope is that our documentation of the historic magnitude of changing migration patterns will spur more work in this area. Future research is clearly needed to better understand the consequences and causes of the historic slowdown in the growth of the immigrant stock in the US that has taken place in the 21st century.

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