

A Appendix

A1 Figures

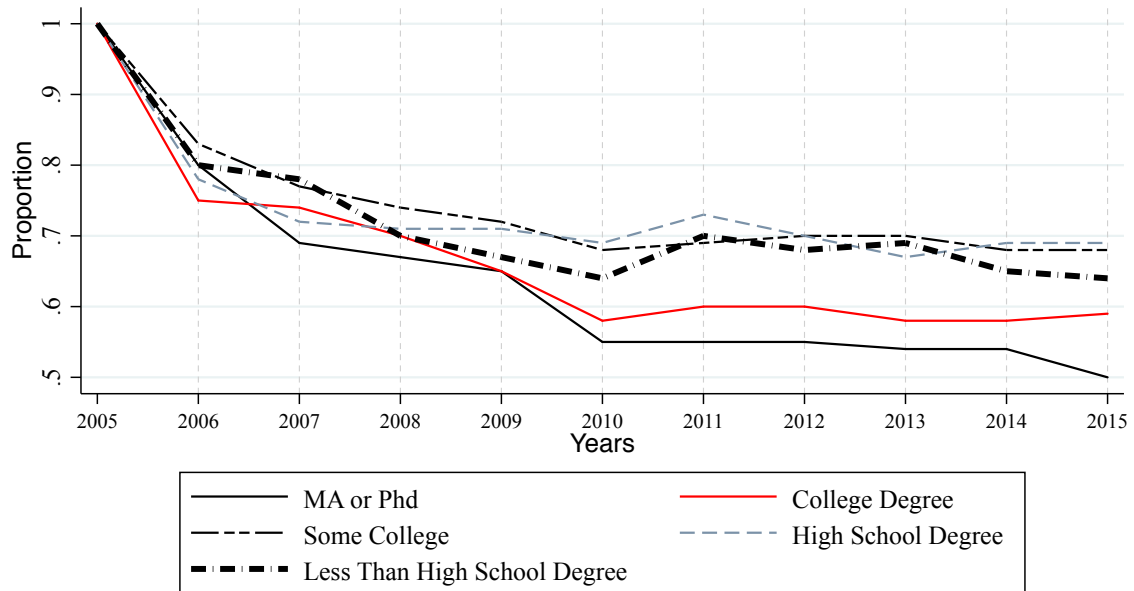
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A1.1 Return migration by initial educational attainment

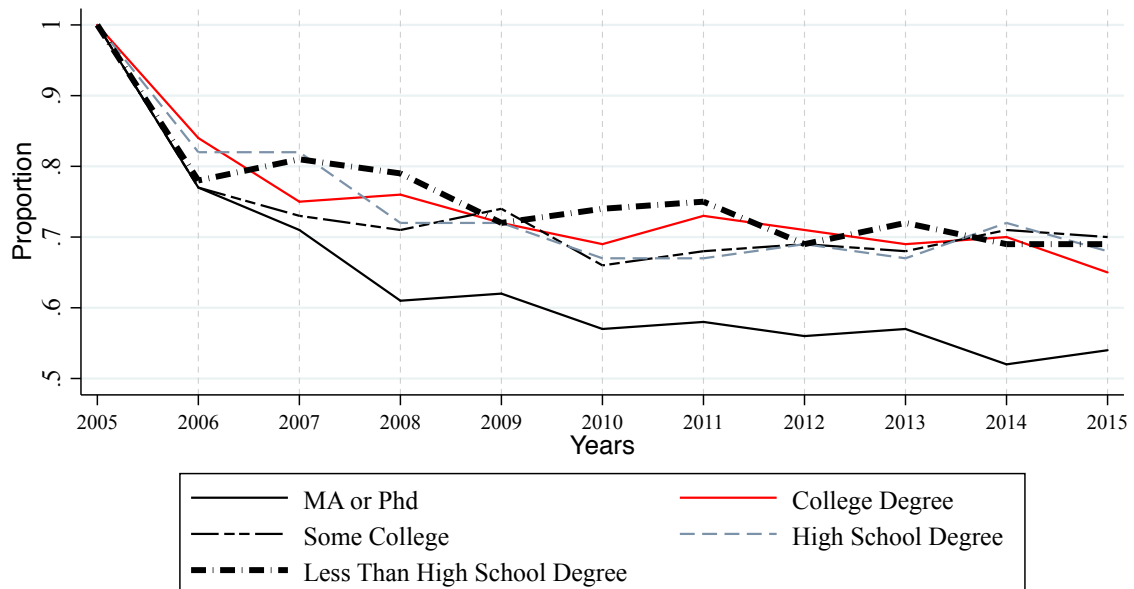
In Figure A1 we show missing tax forms by the educational attainment of the individual immigrant for the 2005 entry cohort alone. We assume that educational attainment occurred abroad because we have selected individuals who are 25-45 years old (who have only recently arrived in the U.S.) and have explicitly excluded any individuals who report that they are currently enrolled in school of any type. Overall, the more educated individuals of either gender are most likely of any education group to return migrate. The data for individuals with less than high school degree are the most volatile, reflecting the higher probability of this education group to be unemployed or perhaps employed in the informal economy. On the other hand, the other educational attainment categories are mostly monotonically decreasing over time for the males. Individuals with an MA or PhD are the most likely to leave, followed by those with a college degree. For women, the very highly-educated have a steep rate of return migration over the first three years, but the rate of return does not differ substantially over the other education categories. These education categories are independent of one another and these results should be interpreted as the percent returning from within each educational category.

Figure A1: Presence of W-2 or 1099 for 2005 Entry Cohort for Ages 25–45 by Educational Attainment

Panel A: Men



Panel B: Women



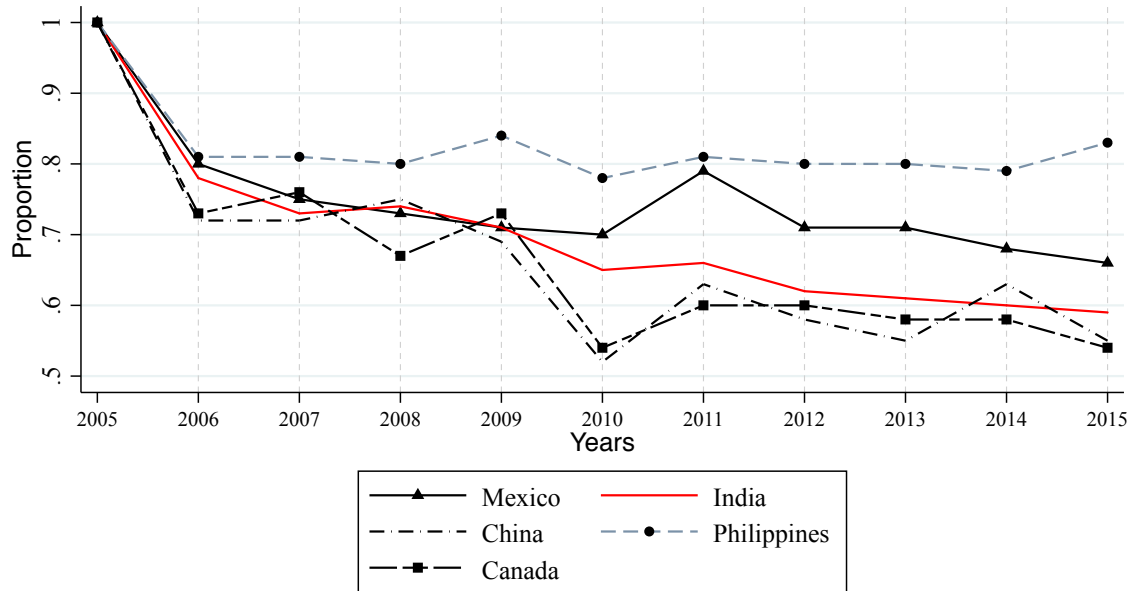
Notes: Each point represents the proportion of each group that is present in the data for each year. We start our analysis in 2005 and take that as the complete immigrant arrival cohort. Data approved for dissemination by CBDRB FY19-007. Source: ACS 2005 and IRS W-2s or 1099 data (2005–2015).

A1.2 Return migration by country of birth

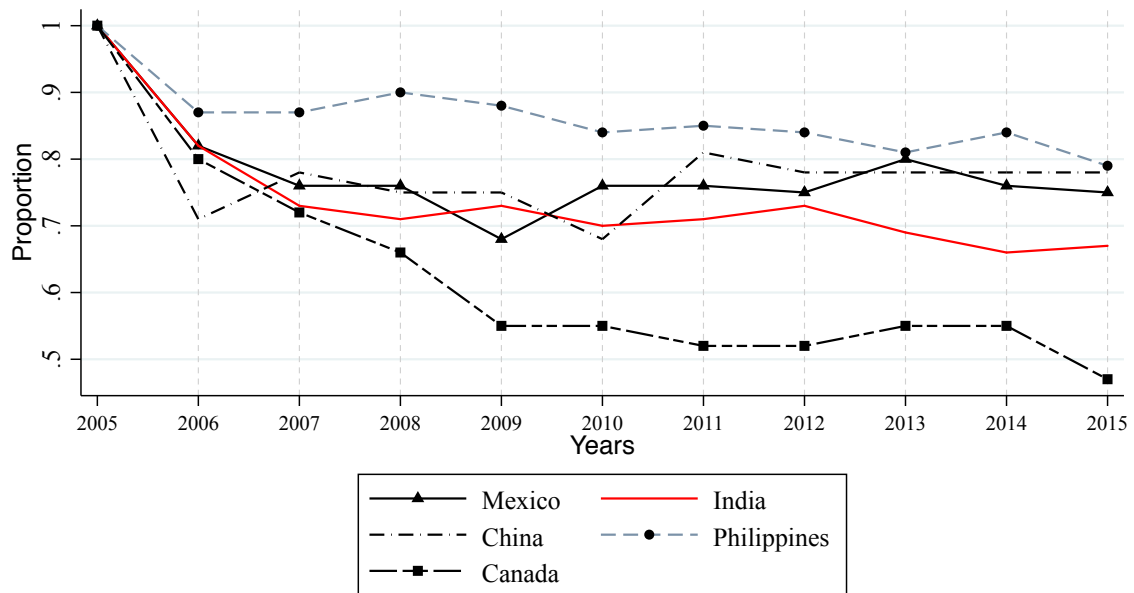
Figure A2 provides the return migration of individuals from the 2005 entry cohort by country of origin for the top five immigrant-sending countries. Panel A presents the results for males and Panel B presents the results for females. In Panel A, the highest return migration is for Canada, followed by China, India, Mexico, and Philippines. There is a steep drop for Canadians and Chinese men in 2010 which may indicate that this group was the most likely to return migrate as a result of the Great Recession. Mexican males rebound in their reporting of W-2 or 1099 in 2011, indicating that they may have remained in the U.S., perhaps working in the informal sector, but that they returned to formal sector employment in 2011 and returned to trend in 2012. Immigrants from the Philippines in this entry cohort are the least likely to return migrate as a percent of their initial arrival cohort. In Panel B Canadian women are the most likely to return migrate followed by Indians, Mexicans, Chinese and then Filipinos. Return migration is largest for Canadians, and then the other four groups tend to be clustered together. Mexican women show a rebound in their reporting of W-2s and 1099s in 2010 and subsequent years; this return to the formal U.S. labor market is sustained over the remaining years, which differs from that of Mexican men in the panel above. Chinese women show a similar pattern to those from Mexico.

Figure A2: Presence of W-2 or 1099 for 2005 Entry Cohort for Ages 25–45 by Country of Birth

Panel A: Men



Panel B: Women



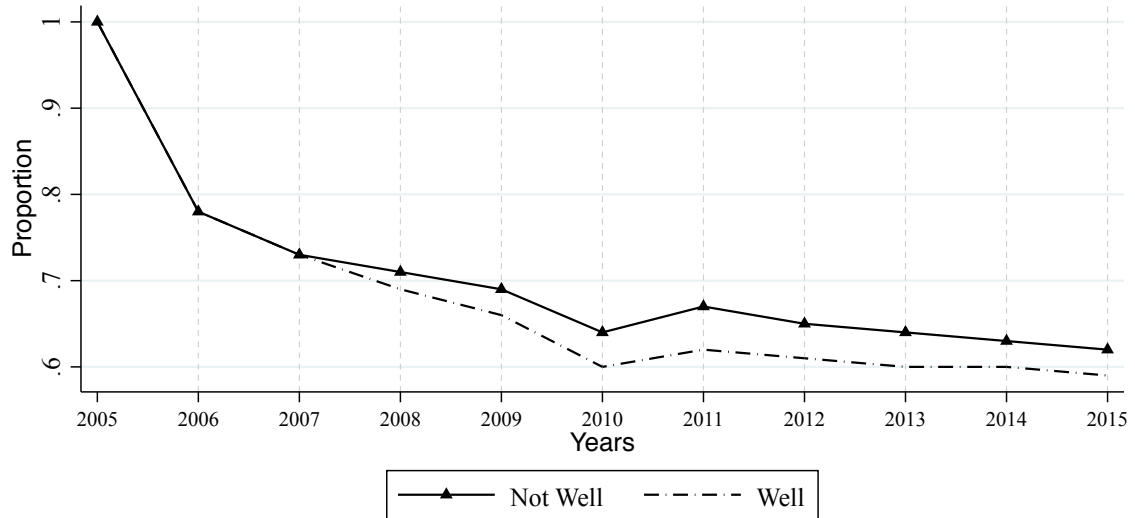
Notes: Each point represents the proportion of each group that is present in the data for each year. We start our analysis in 2005 and take that as the complete immigrant arrival cohort. Data approved for dissemination by CBDRB FY19-007. Source: ACS 2005 and IRS W-2s or 1099 data (2005–2015).

A1.3 Return migration by English language ability

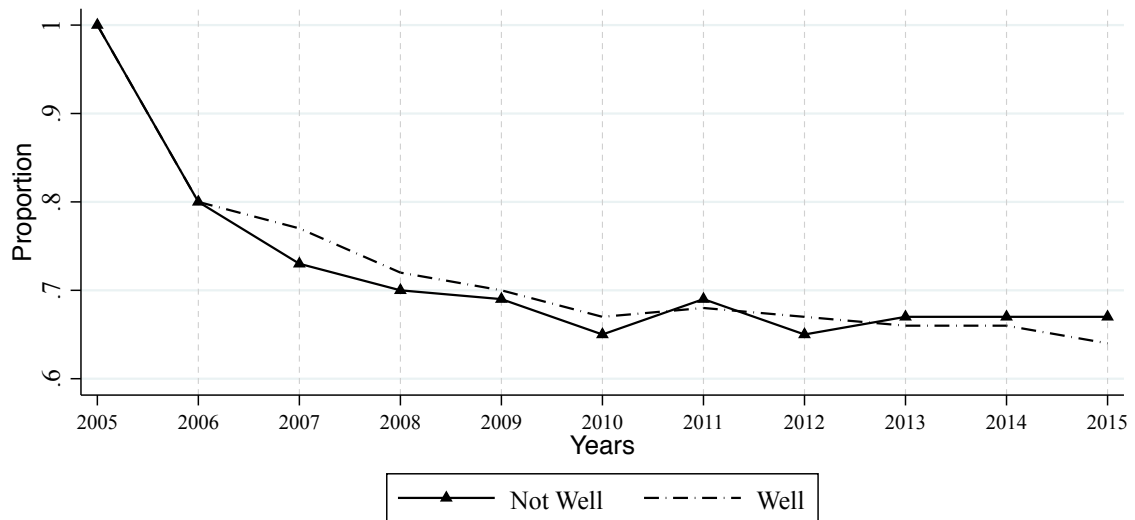
In Figure A3 we show return migration by an individual migrant's English language abilities as reported in the ACS data. We collapse the original four categories into just two to indicate "Speaks English Well" or "Does Not Speak English Well." There is a slight increase in reporting of W-2s or 1099s in 2011 for the group that doesn't speak English well in both panels. For men, there is a slightly higher return of individuals who reportedly speak English well; however, this might be correlated with educational attainment, consistent with what we observed in Figure A1 (the highly-educated are the most likely to return migrate). In Panel B we see that the probability of return migrating doesn't differ between the two categories for women. Overall, return migration doesn't appear to differ by English language abilities for women and differs only marginally so for men.

Figure A3: Presence of W-2 or 1099 for 2005 Entry Cohort for Ages 25–45 by English Language Ability

Panel A: Men



Panel B: Women



Notes: Each point represents the proportion of each group that is present in the data for each year. We start our analysis in 2005 and take that as the complete immigrant arrival cohort. Data approved for dissemination by CBDRB FY19-007. Source: ACS 2005 and IRS W-2s or 1099 data (2005–2015).

A1.4 Return migration by marital status

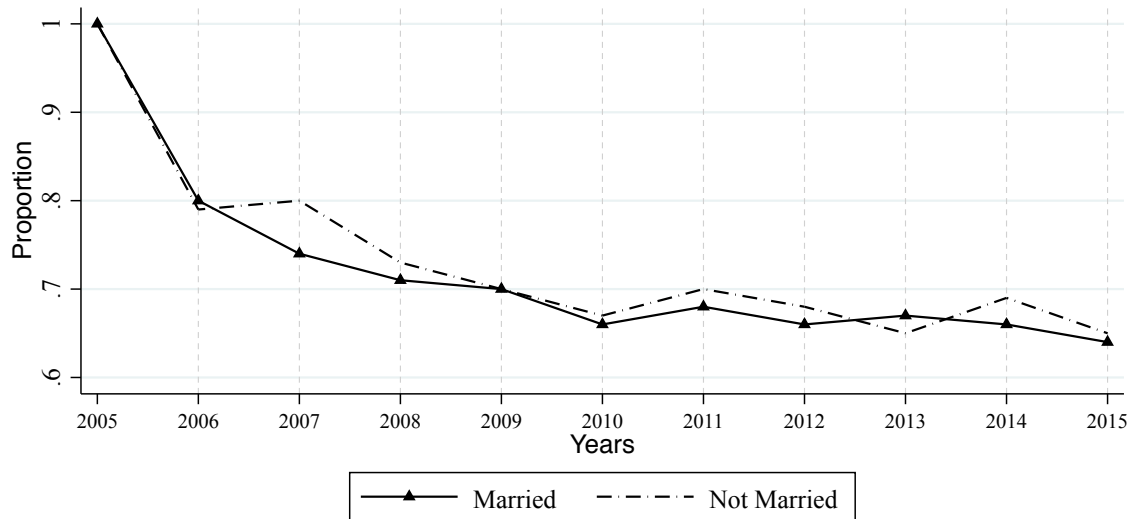
Return migration may also be influenced by an individual's marital status. This might differ by gender in significant ways. In Figure [A4](#) we show the return migration by gender and marital status for the recent cohort of immigrant arrivals. The fact that return migration rates do not differ by marital status for either gender was a surprising finding. Unmarried men were slightly more likely to return migrate in the first few years after arrival in the U.S. than their married counterparts, but after that there is little difference between marital groups over time. For women, there's a slightly higher probability of married women to return migrate in the first few years after arrival, but rates become similar across marital status after about year 5.

Figure A4: Presence of W-2 or 1099 for 2005 Entry Cohort for Ages 25–45 by Marital Status

Panel A: Men



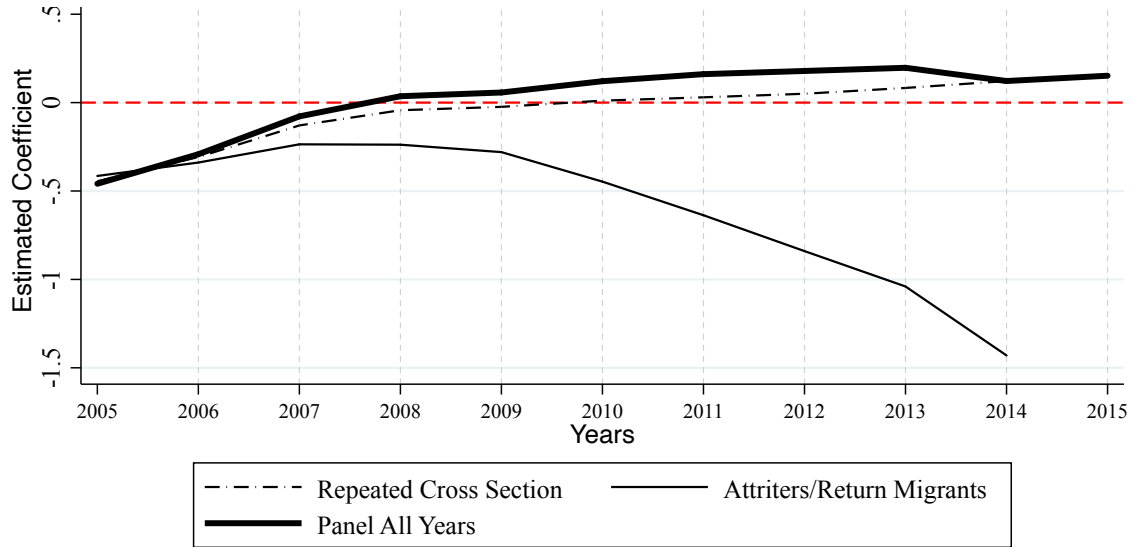
Panel B: Women



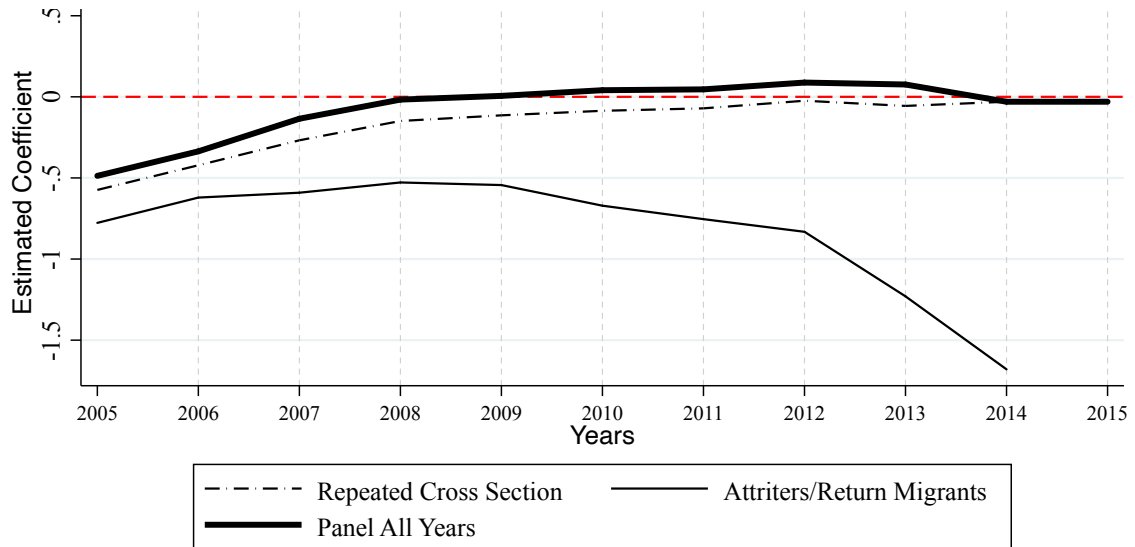
Notes: Each point represents the proportion of each group that is present in the data for each year. We start our analysis in 2005 and take that as the complete immigrant arrival cohort. Data approved for dissemination by CBDRB FY19-007. Source: ACS 2005 and IRS W-2s or 1099 data (2005–2015).

Figure A5: Log Wages for Men and Women without State Fixed Effects

Panel A: Men



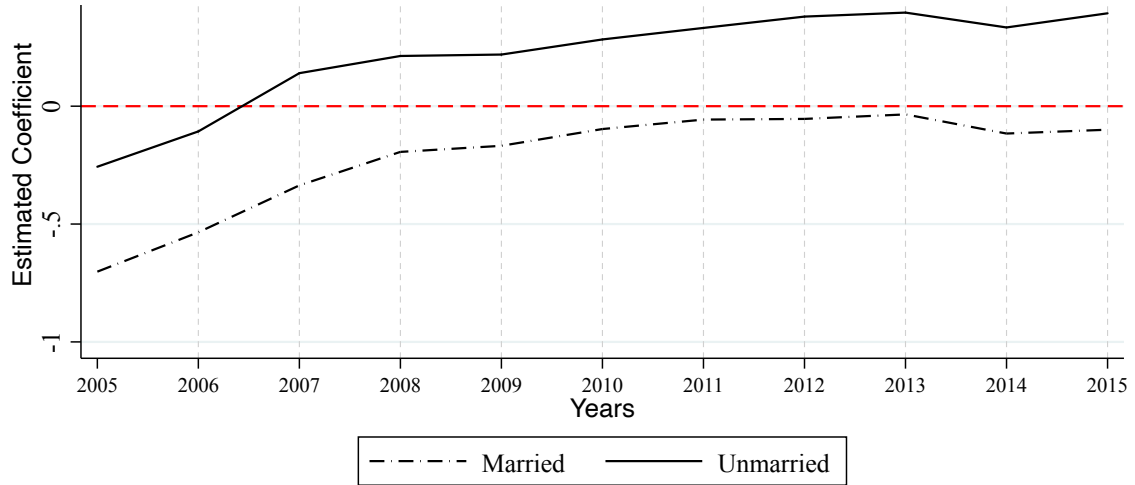
Panel B: Women



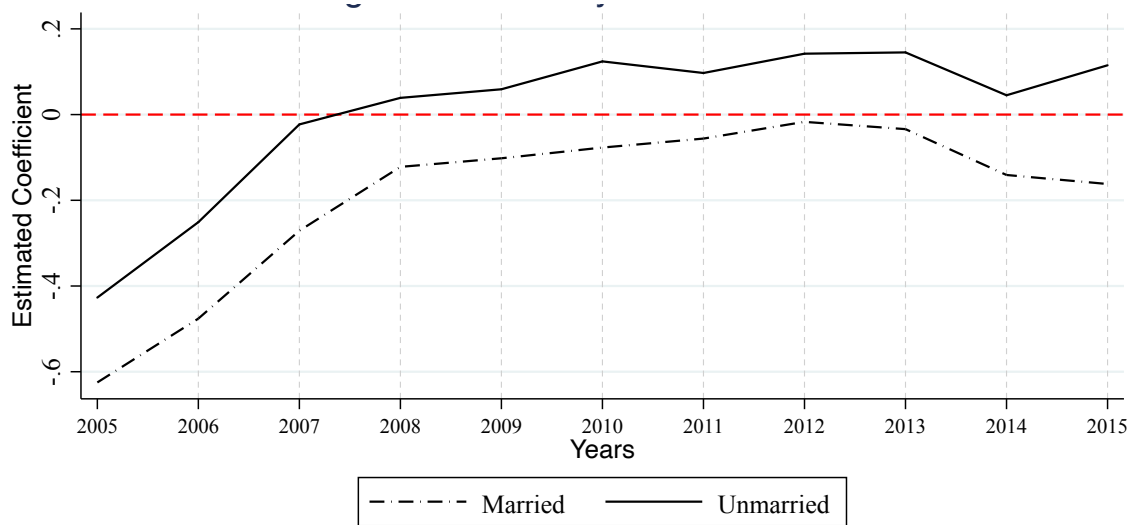
Notes: Each point represents the proportion of each group that is present in the data for each year. We start our analysis in 2005 and take that as the complete immigrant arrival cohort. Data approved for dissemination by CBDRB-FY23-CES014-026, CBDRB-FY23-CES014-039. Source: ACS 2005 and IRS W-2s or 1099 data (2005–2015).

Figure A6: Log Wages for Men and Women by Initial Marital Status

Panel A: Men



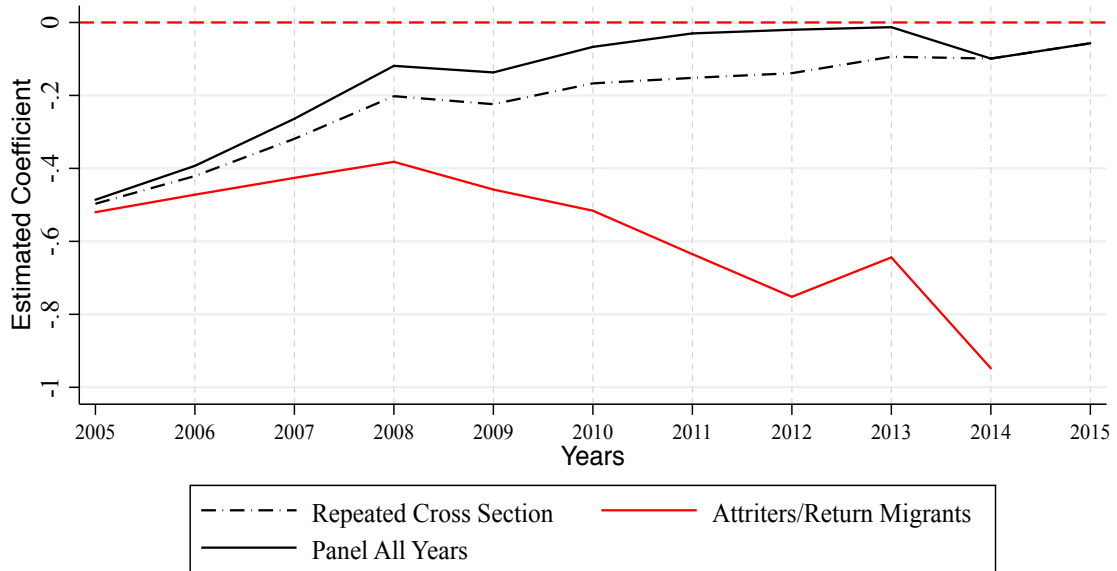
Panel B: Women



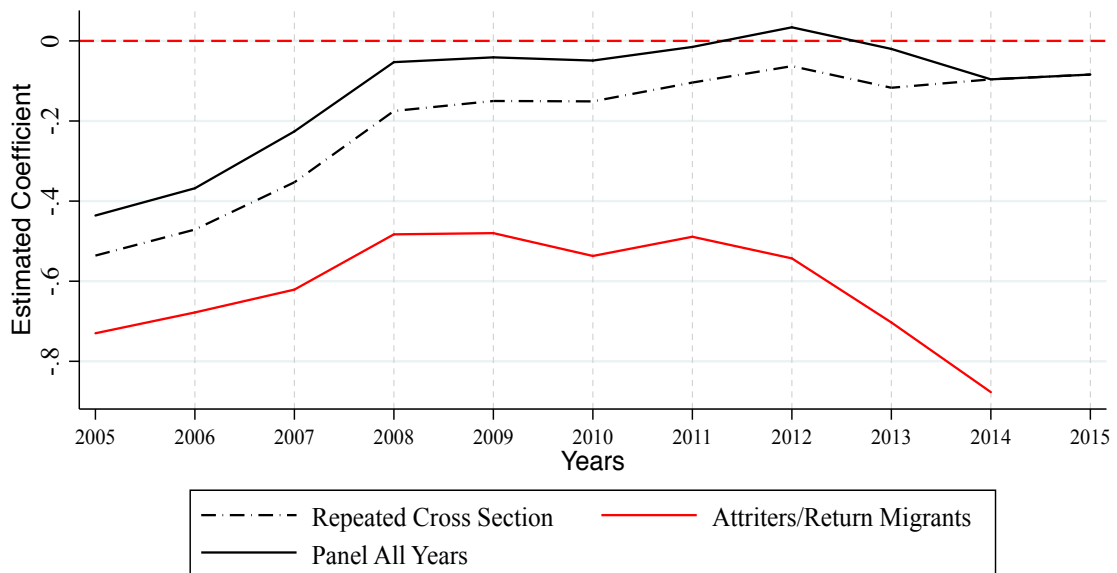
Notes: Each point represents the proportion of each group that is present in the data for each year. We start our analysis in 2005 and take that as the complete immigrant arrival cohort. Data approved for dissemination by CBDRB-FY23-CES014-039. Source: ACS 2005 and IRS W-2s or 1099 data (2005–2015).

Figure A7: Log Immigrant-Native Annual Earnings for 2005-2007 Arrival Cohorts Ages 25–45 with Educational Controls

Panel A: Men



Panel B: Women



Notes: Each point represents the estimated coefficient on an immigrant indicator variable in a log earnings regression conducted separately for each year for the three groups of immigrants relative to the native-born population. We include additional control variables in the regression such as state of residence fixed effects and age fixed effects. Data approved for dissemination by CBDRB FY19-007. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015).

A2 Tables

Table A1: Table of Means for the Matched ACS to No Missing PIK Observations of New Arrivals 2004-2007

Panel A: Men Ages 25-45

	Matched		Non-Matched		T-Stat
	Mean	Standard Deviation	Mean	Standard Deviation	
Total Income	41,000	56,000	17,500	23,000	31.66
Wages or Salary Income	40,000	53,000	16,500	21,000	33.65
Self-Employment Income	1,000	15,000	1,000	8,700	0.00
Age	34	6	32	6	14.85
Male	1.00	0.00	1.00	0.00	0.00
Married	0.68	0.47	0.56	0.50	14.22
Less than High School Education	0.12	0.33	0.45	0.50	-43.48
High School Graduate	0.15	0.36	0.26	0.44	-15.75
Some Post High School Education	0.12	0.33	0.08	0.27	7.76
College Degree	0.30	0.46	0.10	0.30	29.16
MA or PhD	0.30	0.46	0.07	0.25	35.98
Mexico	0.12	0.33	0.58	0.49	-60.81
India	0.15	0.36	0.03	0.17	24.64
Philippines	0.06	0.23	0.01	0.10	15.11
China	0.03	0.18	0.02	0.13	5.80
Canada	0.04	0.18	0.01	0.09	10.66
Other	0.61	0.49	0.36	0.48	29.23
Manufacturing, Transport, Production	0.11	0.31	0.15	0.36	-7.64
Natural Resources, Mining	0.11	0.32	0.40	0.49	-38.42
Office Occupations	0.11	0.31	0.05	0.22	12.39
Service Occupations	0.11	0.31	0.19	0.39	-13.18
Management	0.50	0.50	0.11	0.32	52.41

Note: There are 6,800 observations for the matched and 5,900 for the non-matched samples. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015). Numbers have been rounded to comply with the Census Bureau’s disclosure-avoidance guidelines. Data approved for dissemination by CBDRB FY19-007.

Panel B: Women Ages 25-45

	Matched		Non-Matched		T-Stat
	Mean	Standard Deviation	Mean	Standard Deviation	
Total Income	15000	26500	7000	18100	19.67
Wages or Salary Income	14000	26000	6000	17300	20.23
Self-Employment Income	400	3900	400	3500	0.00
Age	33	6	33	6	6.66
Male	0.00	0.00	0.00	0.00	0.00
Married	0.76	0.43	0.71	0.44	6.30
Less than High School Education	0.12	0.32	0.25	0.43	-18.70
High School Graduate	0.17	0.38	0.19	0.39	-2.56
Some Post High School Education	0.17	0.37	0.13	0.33	5.49
College Degree	0.32	0.47	0.25	0.43	8.57
MA or PhD	0.20	0.40	0.14	0.34	9.47
Mexico	0.09	0.29	0.31	0.46	-30.33
India	0.09	0.29	0.10	0.30	-1.67
Philippines	0.11	0.31	0.02	0.15	20.76
China	0.05	0.21	0.04	0.20	1.61
Canada	0.03	0.17	0.01	0.12	7.49
Other	0.63	0.48	0.49	0.50	15.21
Manufacturing, Transport, Production	0.06	0.24	0.06	0.24	0.23
Natural Resources, Mining	0.01	0.09	0.02	0.15	-5.18
Office Occupations	0.17	0.38	0.10	0.30	11.84
Service Occupations	0.15	0.36	0.18	0.38	-4.43
Management	0.35	0.48	0.16	0.36	25.22

Note: There are 6,700 observations for the matched and 4,5000 for the non-matched samples. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015). Numbers have been rounded to comply with the Census Bureau’s disclosure-avoidance guidelines. Data approved for dissemination by CBDRB FY19-036.

Table A2: Table of Means for the Matched to W-2s of New Arrivals 2004-2007

Panel A: Men Ages 25-45

	Matched		Non-Matched		T-Stat
	Mean	Standard Deviation	Mean	Standard Deviation	
Total Income	42,500	56,000	33,000	54,500	5.12
Wages or Salary Income	41,000	54,500	28,500	43,000	8.26
Self-Employment Income	600	8,700	3,200	33,000	-2.48
Age	34	6	34	6	-4.12
Male	1.00	0.00	1.00	0.00	0.00
Married	0.68	0.47	0.70	0.46	-1.67
Less than High School Education	0.11	0.32	0.18	0.38	-4.98
High School Graduate	0.15	0.35	0.16	0.37	-1.29
Some Post High School Education	0.12	0.32	0.13	0.34	-1.40
College Degree	0.31	0.46	0.19	0.39	9.36
MA or PhD	0.29	0.46	0.32	0.47	-1.59
Mexico	0.11	0.32	0.16	0.36	-3.55
India	0.16	0.37	0.06	0.23	12.22
Philippines	0.06	0.23	0.04	0.20	2.15
China	0.03	0.18	0.05	0.21	-2.03
Canada	0.04	0.19	0.03	0.17	0.84
Other	0.60	0.49	0.67	0.47	-4.36
Manufacturing, Transport, Production	0.11	0.32	0.08	0.28	2.92
Natural Resources, Mining	0.11	0.31	0.15	0.36	-3.60
Office Occupations	0.11	0.32	0.10	0.30	1.48
Service Occupations	0.11	0.31	0.10	0.30	0.99
Management	0.51	0.50	0.41	0.49	6.29

Note: There are 5,800 observations for the matched and 1,000 for the non-matched samples. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015). Numbers have been rounded to comply with the Census Bureau’s disclosure-avoidance guidelines. Data approved for dissemination by CBDRB FY19-007.

Panel B: Women Ages 25-45

	Matched		Non-Matched		T-Stat
	Mean	Standard Deviation	Mean	Standard Deviation	
Total Income	19,000	29,000	7,700	19,000	19.07
Wages or Salary Income	18,000	28,500	6,200	17,500	20.87
Self-Employment Income	300	3,000	600	5,200	-2.51
Age	33	6	34	6	-3.35
Male	0.00	0.00	0.00	0.00	0.00
Married	0.71	0.45	0.86	0.35	-14.12
Less than High School Education	0.11	0.31	0.14	0.35	-3.56
High School Graduate	0.17	0.38	0.17	0.38	0.31
Some Post High School Education	0.16	0.37	0.17	0.37	-0.41
College Degree	0.33	0.47	0.30	0.46	2.41
MA or PhD	0.21	0.41	0.20	0.40	1.25
Mexico	0.08	0.27	0.11	0.32	-4.05
India	0.10	0.29	0.08	0.28	1.91
Philippines	0.13	0.34	0.07	0.25	8.74
China	0.04	0.20	0.05	0.23	-1.94
Canada	0.04	0.19	0.02	0.14	3.65
Other	0.61	0.49	0.66	0.47	-4.02
Manufacturing, Transport, Production	0.08	0.27	0.03	0.17	9.05
Natural Resources, Mining	0.01	0.09	0.01	0.09	0.44
Office Occupations	0.20	0.40	0.13	0.33	7.24
Service Occupations	0.17	0.38	0.11	0.31	7.28
Management	0.39	0.49	0.28	0.45	8.65

Note: There are 4,500 observations for the matched and 2,200 for the non-matched samples. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015). Numbers have been rounded to comply with the Census Bureau’s disclosure-avoidance guidelines. Data approved for dissemination by CBDRB FY19-007.

Table A3: Percent Found in 2010 U.S. Census for Return Migrants

Last Year of W2 or 1099 in Data	Years in Data	Men Women	
		Men	Women
2005	1 Year	4	4
2006	2 Years	10	11
2007	3 Years	18	25
2008	4 Years	28	41
2009	5 Years	43	60
2010	6 Years	67	81

Note: This table identifies the percent of individuals who have a final administrative record (W-2 or 1099) reported in the years 2005-2010 that can be found in the 2010 U.S. Census. Source: ACS 2005–2007, 2010 U.S. Census and IRS W-2s or 1099 data (2005–2015). Numbers have been rounded to comply with the Census Bureau’s disclosure-avoidance guidelines. Data approved for dissemination by CBDRB FY19-069.

A2.1 Return Migration by Educational Attainment

In Table A4 we provide a duration analysis on whether an immigrant remains in our data set based on their self-reported level of educational attainment. We focus on those employed in the formal labor market and provide the estimated results for men in column 1 and women in column 2. The results indicate that return migration (missing W2 or 1099 data) is monotonically increasing in educational attainment. Individuals with a PhD are almost twice as likely to return migrate than individuals with a Master’s degree. The same results do not hold for women in this analysis: none of the estimated coefficients attain statistical significance, and the magnitude of the coefficients are not monotonically increasing in size with regard to educational attainment.

Table A4: Missing Tax Data Duration Analysis by Educational Attainment

VARIABLES	(1)	(2)
	Missing W2	Missing W2
High School	0.066 (0.055)	0.069 (0.049)
Some College	0.089* (0.056)	0.038 (0.049)
College	0.196*** (0.046)	0.022 (0.044)
MA	0.209*** (0.048)	0.07 (0.048)
PhD	0.403*** (0.062)	0.096 (0.077)
Gender	Men	Women
Observations	58,000	45,000

Notes: Data approved for dissemination by CBDRB-FY23-CES014-026. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

A2.2 Selection for Balanced Panel of Immigrants Between Adjacent Years

Table A5: Percent Growth in Earnings Due to Panel Observations and Compositional Change

Men	2005 to 2006	2006 to 2007	2007 to 2008
Total Growth	0.27	0.09	0.04
Percent Growth Due to Panel Observations	1.40	0.44	0.18
Percent Growth Due to Compositional Change	-0.40	0.56	0.82

Women	2005 to 2006	2006 to 2007	2007 to 2008
Total Growth	0.34	0.18	0.04
Percent Growth Due to Panel Observations	1.56	0.87	0.81
Percent Growth Due to Compositional Change	-0.56	0.13	0.19

Notes: These earnings growth are estimated from the data contained in Figure 4. Total growth is the difference between the earnings at the beginning of the year and the beginning of the subsequent year for 2005, 2006 and 2007, respectively. Percent Growth Due to Panel Observations is the difference in earnings from the beginning of the year to the end of the year; this holds the panel data constant in that single year. Finally, Percent Growth Due to Compositional Change is the difference between earnings at the end of the first year and the beginning of the second year. Data approved for dissemination by CBDRB-FY23-CES014-026. Source: ACS 2005–2007 and IRS W-2s or 1099 data (2005–2015).