**Nation of Immigrants**

* A Longitudinal Study of the Relationship of Immigration Laws with Changes in Demographics and GDP in the United States

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**Abstract**

* Immigration levels and economic conditions are closely intertwined
* Administration is proposing immigration reforms focusing on merit-based admissions and enforcement of existing laws that it asserts will benefit the U.S. economy.
* Political opponents claim the proposed policies have racial undertones and are meant to reduce diversity in the United States.
* Dissect and describe the underlying relationships between legislation on immigration, demographics, and the U.S. economy.

**Introduction**

**Overview**

* Since1790,[1](https://rstudio-pubs-static.s3.amazonaws.com/380530_7cd2743afaa641d2b30c4546fb14a067.html#fn1)  Congress has passed over 200 other immigration laws and amendments
* Exclusionary (Chinese Exclusion Act), and inclusionary (Chinese Exclusion Repeal Act).
* 2/23/18 USCIS removed the phrase “nation of Immigrants” from its mission statement
* News outlets conflating the proposed immigration reforms with these factions.
* Intangible change in identity from a ‘Nation of Immigrations’ to something less inclusionary.

**Theory**

* Immigration increases the supply of labor which in turn decreases the cost of labor (wages).
* Findings contradicting the theory documented by Kaufman and Hotchkiss (2006)
  + Impact of immigration on wages nonexistent/small; even when influx is large/sudden.
  + Immigrants are not perfect substitutes for native workers due to language.
  + Researchers reexamined the data with techniques “sufficiently refined and sophisticated to capture the true [negative] effect of immigration on wages.” Such repeated measures, if not controlled for, could constitute data dredging.
  + Unambiguous about positive correlation between immigration and economic growth–economic booms and immigration go hand-in-hand.

**Hypothesis**

* The frequency of legislation regarding immigration fluctuates when matters related to immigration are under review. Therefore, the number of laws being passed on immigration is a useful sentiment indicator for how the US feels about past and future immigration.
* There exists a feedback loop between the number of laws enacted and the demographics.
  + Bidirectional relationship: outputs of one are inputs for other, and then the outputs of the latter are routed back as inputs to the former factor, in an ongoing cycle.
  + Specifically, the number of immigration laws enacted in the future is a function of demographic changes–and demographic changes are a function of the number of immigration laws enacted in the past.
* Further hypothesized that the positive correlation that Immigrants share with various sectors of the U.S. economy holds regardless of the immigrant’s country of origin.
* Therefore, restrictions based on country of origin are more likely to impact the diversity rather than the economy of the United States.

**Question**

* How have immigration reforms impacted the economy and the demographics of the United States historically; and what is the likely outcome of the proposed immigration reforms?

**Background**

**Literature Review**

* Census Bureau study examining the Foreign-born population by country from 1850 to 2010.
* National Archives (2002) Senior Historian Marian Smith
  + Immigration has long history of excluding based on race and ethnicity.
  + Early laws focused on keeping out the poor and sick.
  + Early Nationality laws focused on granting “free white persons” who immigrated from Europe citizenship while excluding African-Americans and untaxed Native-Americans.
  + Federal citizenship was not even seen as that important until after the Civil War.
  + Coordination and uniform application of different laws designed to restrict race (as defined by color) and geographic origin became a problem. Attempts to mitigate the confusion by focusing only on ethnicity exacerbated the problems.
    - Citizenship granted and denied based on individual case
    - Could not codify “common understanding” of who was entitled to citizenship.
    - The lack of clarity and guidance was resulting in courts flooded with appeals.
    - In 1952 racial requirements completely removed.
* Study published in the Washington Post last on February 26, 2018
  + "keep whites in U.S. majority for up to five more years…[by] greatly slashing the number of Hispanic and black African Immigrants entering the United States."
  + Reforms will decrease size of population > workforce > economy.

**Primary Data Sources**

* U.S. Census Bureau
  + “information on nativity was not collected for slaves.”
  + Native Americans “not taxed (i.e., living in tribal society) were not included in the enumeration.”
  + 1940 Hispanic only included the “White population of Spanish mother tongue”.
  + In 1940 and 1950, Foreign-born data missing “because data on the Foreign-born population by country of birth in census publications for these years are limited almost entirely to the White population.”
  + Interpolation and Regression
* U.S. Department of State
* U.S. Department of Labor
* U.S. Department of Homeland Security
* U.S. Bureau of Economic Analysis

**Data Characteristics**

* Legislation
  + 2000: Thirteen laws passed during an election year, eleven prior to elections.
  + 2008: Six laws passed during an election year, all prior to elections.
* Demographics
* GDP by Industry

**Results**

**Correlation Analysis**

* Bidirectional Impact of Policy Lag
* Legislation and Demographic Factors
* Legislation and Economic Factors
* Demographic and Economic Factors
* Largest statistically significant correlations are between demographics factors and the number of immigration laws passed one year later. The difference between all the lagged correlations is not very large however, it averages around τ±0.02.

**Causality Analysis**

* If one variable could be used to predict future change in the other, then it is reasonable to build a regression model that uses the predictor to explain future changes in the other.
* Demographics changes are Granger cause of future immigration laws.
* Bidirectional Granger causality with some variables supports hypothesized feedback loop.
* The number of immigration laws enacted in the past is a useful predictor for forecasting future changes in Hispanic, Native Born, Africa, and Latin America.

**Model Selection**

* Linear Regression Models
* Nonlinear Regression Models
* Tree-Based Regression Models
* Model Comparison

**Coefficient Analysis**

* Partial Least Squares (PLS)
  + Explain number of laws that will be passed one year in the future based on changes to multiple demographic factors.
  + Multicollinearity: Removing highly correlated predictors removes nine of the twelve variables leaving only foreign-born from Africa, Native-Americans, and Whites.
  + PLS model–essentially supervised Principal Component Analysis– is a regression technique that works well when a high level of multicollinearity is present.
  + Shapiro-Wilks test suggests that the PLS model provides an appropriate fit.
  + Variation in number of laws enacted explained by prior demographic changes.
  + PLS coefficients reflect variation, Direction from Correlation Analysis was positive.
  + When there are increases in these demographic elements, the number of immigration laws enacted one year later increases.
* Robust Linear Model (RLM)
  + Explain changes to four demographic factors based on the number of laws that were enacted one year prior.
  + Shapiro-Wilks test suggests RLM model provides an appropriate fit for most.
    - Exception is the model for foreign-born from Africa
  + As number of laws enacted increases, these demographic elements increase.

**Conclusion**

* Administration is claims reforms will improve the economy.
* Legislation on immigration does not have statistically significant relationship with economy.
* Bidirectional temporal relationship with demographics is statistically significant.
  + Changes in demographics impact the number of laws enacted one year later
  + The number of laws enacted one year prior impact demographics.
* **Implications**:
  + Reforms will not improve the economy, but will impact diversity.
  + Reforms will actually increase diversity.
  + The number of Native born will increase, but due to interruptions in natural immigration outflows, there will also be increases in foreign-born from Africa and Latin America, and by extension Hispanics.
* **Significance**:
  + Both sides are wrong about outcome.
  + If meant to either improve economy or reduce diversity, will accomplish neither.