

Key Points

- The Penn Wharton Budget Model's Immigration Policy Simulator allows users to see the results of three policy options and combinations of those options, for a total of 125 policy combinations. Policies can be simulated on a standard static basis or on a dynamic basis that includes macroeconomic feedback effects.
- Shifting the mix of legal immigrants toward college graduates has little impact on employment and only slightly increases GDP. Legalization of undocumented workers slightly reduces employment and has a negligible impact on GDP. Deportations, however, substantially reduce both employment and GDP.
- The largest positive impact on employment and GDP comes from increasing the net flow of immigrants.

The Penn Wharton Budget Model's Immigration Policy Simulator

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Introduction

Net legal immigration to the U.S. is about 800,000 people each year. At about 800,000, the number of new immigrants in any year is 0.25 percent of the U.S. population, which in mid-2015 stood at over 321 million people. Although 35 percent of new legal immigrants have a college degree or higher, new legal immigrants in any given year add only about 0.5% to the college-educated population. The relatively small number of annual immigrants in comparison to the U.S. population is important for understanding the limited ability of immigration policy to cause large swings in economy-wide statistics.

The Penn Wharton Budget Model's (PWBM) online Immigration simulator allows policymakers, members of the media, and the general public ("users") to see the impact that potential reforms to immigration policy will have on the U.S. population, employment, the old-age dependency ratio, and gross domestic product (GDP). Potential reforms include an increase in net legal immigration, an increase in the share of skilled/educated immigrants, and allowing unauthorized immigrants to obtain legal status or to deport more unauthorized immigrants. Any combination of these options can be considered at the same time, thereby allowing for a total of 125 policy combinations.

Brief Overview of the PWBM

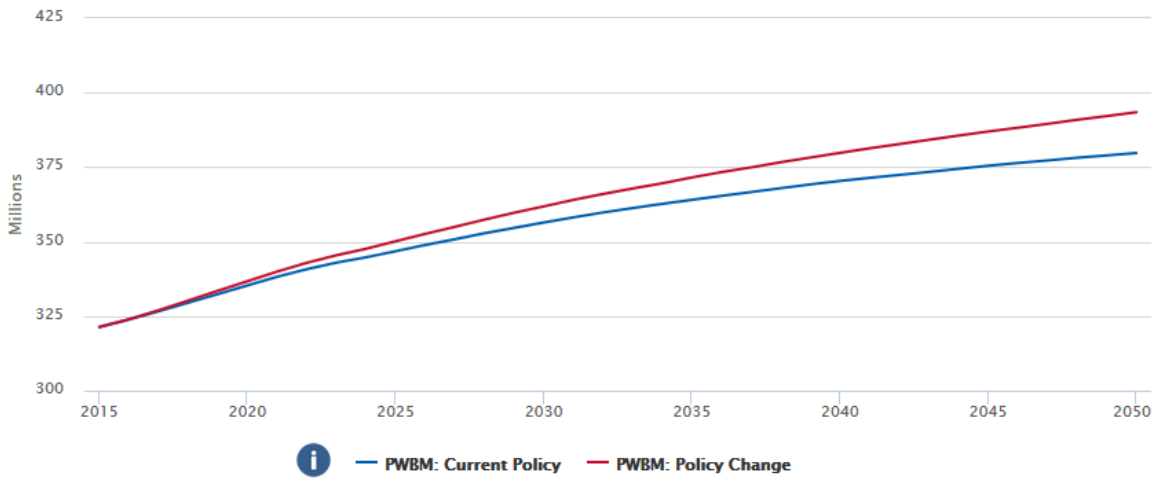
The Penn Wharton Budget Model uses what is known as a "stochastic simulation." Hundreds of thousands of individuals across a wide range of population subgroups are calibrated to Census-level data. Using a variety of additional large data sets, households are assigned key economic attributes including fertility, mortality, immigration, labor-force participation rates, education, marriage, divorce, capital, disabilities, and earnings. Households are then subject to various life events: They grow up, go to school, get married, maybe divorce, get jobs, pay taxes, and eventually retire and receive benefits. The model is first tested using historical data before being used to make projections of policy changes. The dynamic version of the model uses fewer representative households to reduce computation costs, but it allows households to change several key attributes in response to a change in policy, including their labor supply and capital holdings. These changes then impact the economy, economic growth, and the distribution of income over time.

Policy Change: Increase Net Legal Immigration

The Penn Wharton Budget Model estimates that doubling net legal immigration from 800,000 to 1.6 million people a year will increase the size of the U.S. population, employment and GDP. The red line in Figure 1 shows that if net legal immigration is increased by 50 percent, to 1.2 million a year, then by 2050 the U.S. will have about 13.7 million more people than if immigration policy stays the same, the blue line in Figure 1. Increasing net legal immigration by 50 percent will lead to about eight million more jobs in 2050.

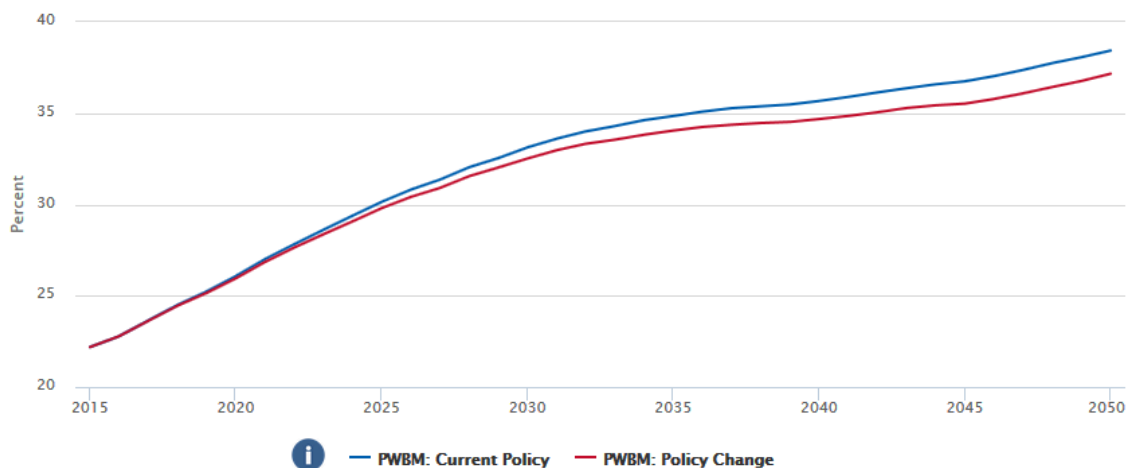
Figure 1: Population – Policy change to increase net legal

Figure 1: Population – Policy change to increase net legal immigration by 50 percent



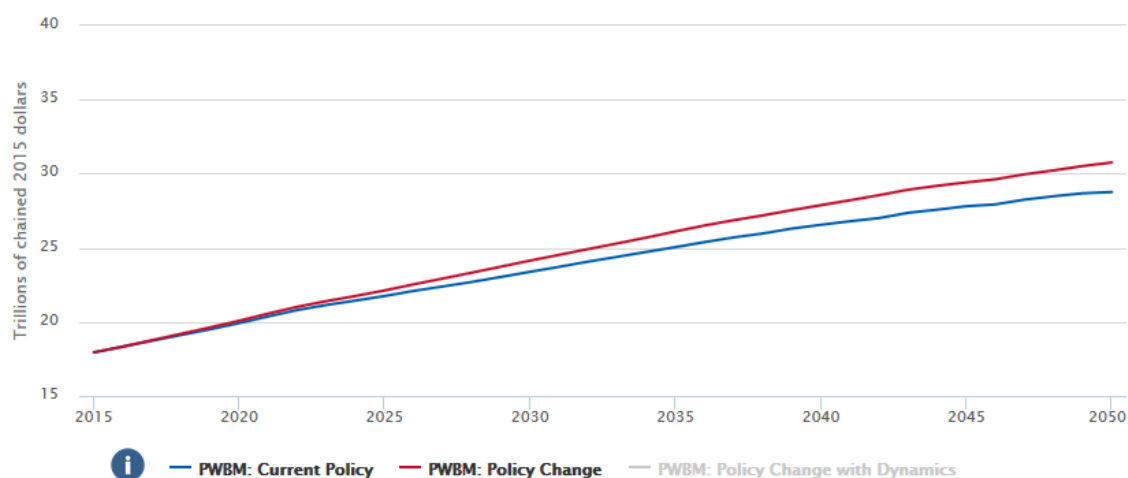
The old-age dependency ratio compares the number of retirement-age people (aged 65 or older) to the number of working-age people (aged 18-64). The old-age dependency ratio is an important statistic for assessing the impact of immigration policy on entitlement programs such as Social Security and Medicare. Because few immigrants are age 65 or older, increasing immigration increases the working-age population while leaving the number of retirees stable in the near term. Figure 2 shows that increasing immigration would eventually reduce the old-age dependency ratio and improve the finances of old-age federal programs.

Figure 2: Old-Age Dependency Ratio – Policy change to increase net legal immigration by 50 percent



Expanding net legal immigration is projected to increase the size of the U.S. economy. If immigration increased by 50 percent over the next 35 years, GDP will grow at about two percent per year on average rather than about 1.7 percent per year on average. The impact of increasing immigration is small, but it does lead to employment growth, an improvement to the old-age dependency ratio, and, as seen in Figure 3, to an increase in GDP. In 2050, GDP per capita will also be three percent higher than it would be if immigration is increased by 50 percent than if immigration stays the same as it is now.

Figure 3: Gross Domestic Product – Policy change to increase net legal immigration by 50 percent



Policy Change: Increase Share of Skilled/Educated Immigrants

About 35 percent of new legal immigrants have at least a college degree. Increasing college educated immigrants to 55 percent of new legal immigrants, while keeping the entire flow of immigrants constant, has only a small, positive impact on the U.S. economy. In most years, new immigrants with a college education add only about 0.5% to the college-educated workforce in the United States. Increasing their numbers from 35 percent to 55 percent of total immigrants, therefore, has very little impact on economy-wide variables.

Policy Change: Offer Legal Status to Unauthorized Immigrants

In 2014, there were about 11.3 million unauthorized people in the United States. A policy that provides “legalization” for up to 10 percent of unauthorized immigrants per year would give nearly all unauthorized immigrants legal status within about 10 years. This policy change has no discernible impact on the size of the U.S. population, the old-age dependency ratio, or GDP.

Perhaps surprisingly, Figure 4 shows that legalization of unauthorized immigrants does have a small downward impact on employment. Unauthorized immigrants do not have access to government benefits and have a higher attachment to the workforce than legal immigrants. Once they obtain legal status, currently unauthorized immigrants may be able to access government benefits such as unemployment insurance and other safety net programs that allow them to leave the workforce, possibly to care for children, or spend more time searching for a job. Although legal immigrants are less likely to be employed, they find better jobs to match their skills, which leads them to be more productive and earn higher wages once they attain legal status. The decline in employment, therefore, does not lead to a corresponding fall in GDP. As Figure 5 shows, legalizing 10 percent of currently unauthorized immigrants per year has almost no impact on GDP, especially in the near term. However, by 2050, GDP per capita will be one percent lower than it would be with no legalization, since fewer of them are working.

Figure 4: Employment – Policy change to offer legal status to 10 percent of unauthorized immigrants per year

Figure 5: Gross Domestic Product – Policy change to offer legal status to 10 percent of unauthorized immigrants per year

Policy Change: Increase Deportations of Unauthorized Immigrants

Increasing deportation by an additional 10 percent of unauthorized immigrants each year reduces the size of the U.S. population by 13 million people by 2050, with about six million fewer jobs. More deportations improves the old-age dependency ratio in the long run, as deported immigrants fail to reach retirement age. That said, under current law, unauthorized workers, however, generally do not qualify for federal benefits, including Social Security. More deportations, though, leads to less economic growth. Figure 6 shows that GDP in 2050 will be four percent lower relative to no additional deportations. Despite the drop in the size of the population, deporting an additional 10 percent of unauthorized immigrants per year reduces GDP per capita by one percent by 2050 relative to no change in policy.

Figure 6: Gross Domestic Product – Policy change to increase deportation of unauthorized immigrants by 10 percent per year

Impact of Policy Options Similar to CBO

When the PWBM analyzes a similar, but not identical set of policy changes, it finds similar results as the Congressional Budget Office (CBO). The most comparable CBO analysis is for S. 744, Border Security, Economic Opportunity, and Immigration Modernization Act. The PWBM and CBO expect similar effects on population, the number of unauthorized immigrants, and GDP. The PWBM finds that if currently unauthorized immigrants are allowed to obtain legal status, their wages will increase by about 10 percent on average because better job matches will lead to higher productivity. In comparison, the CBO expects wages to increase by 12 percent. When the projections differ between the PWBM and CBO, it is usually because the PWBM makes different assumptions or because the PWBM provides a more detailed analysis of labor market activity. In particular, the PWBM finds that the change in legal status reduces employment, while CBO does not appear to estimate how employment differs by legal status. The PWBM also assumes that new immigrants will adjust and find employment faster than does CBO. Because the CBO's analysis is based on S.744, they assume that new immigrants would be less skilled than the typical immigrant is today. In contrast, the PWBM's analysis assumes that future immigrants would be similar to those who arrived recently. These different assumptions about the characteristics of new immigrants lead the CBO to expect weaker economic growth than the PWBM.

Conclusion

The Penn Wharton Budget Model shows simulation results for three Immigration policy reform options, each with five combinations, for a total of 125 policy options. Users of the model are encouraged to experiment with their own settings.

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