Immigration Reform: Implications for Growth, Budgets, and Housing

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Immigration Task Force

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Message from the BPC Immigration Task Force Co-Chairs

The U.S. economy is continuing to recover from the most severe recession in decades. Under the pressures of a slow recovery and changing demographics, the US workforce has struggled to return to its previous size and participation rates. While growth in the federal budget deficit has also slowed, the U.S. continues to face fiscal challenges of historic magnitude.

The following analysis indicates that immigration reform would be a powerful instrument for economic revitalization. The results make clear that reform has the potential to significantly increase the number of young, working-age people in the economy. This influx of labor would spur economic growth, reduce federal deficits, help the housing sector, and mitigate the effects of an aging population. By contrast, preventing unauthorized immigration without providing replacement labor would cause severe damage to the economy.

This study is an important tool in answering one of the major questions in the immigration debate but it is important to note that it looks purely at the economic costs and benefits of reform. This staff paper does not engage complex issues regarding the security of our borders, adequacy of interior enforcement, or the host of non-economic benefits that diverse immigrant populations contribute to our society. The Task Force we chair at the Bipartisan Policy Center is addressing many of these issues. Our existing work can be reviewed at www.bipartisanpolicy.org.

The analysis that follows demonstrates that under almost every plausible approach, fixing our broken immigration system will benefit our economy. It also demonstrates that how Congress crafts reform matters to the overall economic performance. A balanced understanding of the costs and benefits of immigration reform is crucial to this process. We believe that it is both critical and possible to develop a bipartisan approach to immigration reform and hope that this analysis is helpful to achieving this goal.
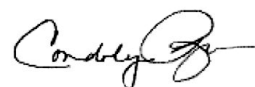
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Introduction

At the heart of the ongoing immigration reform debate is the question of the anticipated costs and benefits of reform. Assessing the impact of various reform proposals on economic growth, wages, and federal and state budgets is critical to making an informed judgment as to whether enactment of reform is in the best interests of the country.

A number of studies have modeled the costs and benefits of immigration reform. In June 2013, the Congressional Budget Office (CBO) released budgetary and macroeconomic analyses of the Border Security, Economic Opportunity, and Immigration Modernization Act (S. 744). CBO updated its budgetary estimates following Senate passage of the bill. CBO found that if enacted into law, S.744 would have an overall positive impact by reducing the budget deficit and contributing to economic growth.[1] Other studies have been narrower in focus. For example, The Heritage Foundation's May 2013 study found that legalizing the current unauthorized population would cost taxpayers several trillion dollars over 50 years but did not examine tax revenues or economic growth.[2] Conversely, the Center for American Progress's March 2013 study found that legalization would grow the economy and increase tax revenue but did not examine the impact on government spending.[3]

As the U.S. House of Representatives works to develop its own reform proposals, the Bipartisan Policy Center (BPC) set out to produce a comprehensive and balanced assessment of immigration reform's economic and budgetary impacts. To assist in this effort, BPC engaged the research firm Macroeconomic Advisers, LLC (MA).

The first step in any modeling exercise is to develop a "reference case" against which alternative scenarios, or "sensitivity analyses," can be compared. This assessment chose to utilize S.744 as the "reference case," because it is the most recent reform package to have moved through either chamber of Congress.

All economic modeling requires assumptions about what will happen in the future. To provide robust insights, this study employs five alternate scenarios that reveal the significance of different assumptions and policy changes. The first four scenarios change key assumptions in the reference case, while the fifth presents an alternative:

- Scenario 1 adjusts the future level of unauthorized immigration.

- Scenario 2 adjusts the utilization level of three visa categories.

- Scenario 3 transfers some family-based green cards to the employment-based categories.

- Scenario 4 changes how much unauthorized immigrants' wages would rise after they receive legal status.

- Scenario 5 is not based on the reference case. This scenario assumes all current unauthorized immigrants leave the country, eliminates all future unauthorized immigration, and makes no other changes to the immigration system.

Overall, the study demonstrates that immigration reform can produce powerful economic benefits. By adding new, younger workers to the economy, immigration reform can augment the size and strength of the future labor force, resulting in a number of economic benefits. Under the reference case, immigration reform would:

- **Spur economic growth**. Immigration reform would cause the U.S. economy to grow an additional 4.8 percent over a 20-year period, including 2.8 percent in the first decade (as measured by gross domestic product, or GDP). Annual average growth would be 0.24 percent higher, peaking at 0.35 percent in FY2019–FY2023.

- **Reduce federal deficits**. Cumulative deficits would fall by nearly $1.2 trillion over a 20-year period. About $180 billion of this reduction would occur in the first decade, and $990 billion in the second decade.

- **Jump-start the housing recovery**. Immigration reform would dramatically increase demand for housing units. This would increase residential construction spending by an average of $68 billion per year over the 20-year period.

- **Expand the labor force**. By 2033, the labor force would be 8.3 million people larger, an increase of 4.4 percent compared with the baseline.

- **Offset aging of the workforce**. After accounting for fertility, mortality, and emigration, immigration reform would add 13.7 million people to the population by FY2033. Just 6 percent of these people would be age 65 or older. By comparison, the Census Bureau projects that 20 percent of U.S. residents will be 65 or older in 2030.

- **Increase long-term wages**. Wages would initially fall due to the large influx of workers, but rise in the long-term. Real wages in FY2023 would be about 0.2 percent below the baseline, but would be 0.5 percent higher than the baseline in FY2033.

The alternate scenarios demonstrate that on balance, immigration reform can benefit the economy. Additionally, the scenarios shed light on the relative impact of various policy choices. Key findings from the sensitivity analysis include:

- Regardless of the means, removing all present and future unauthorized immigrants would harm the economy. An "attrition through enforcement" policy that removed all unauthorized workers would hurt the housing market, increase the deficit, and reduce GDP by about 5.7 percent over the next 20 years. Overall real wages would initially rise as a short-term reaction to the loss of workers, but would decline in the second decade due to dynamic factors such as the loss of GDP growth.

- The size of the wage bump that unauthorized immigrants would receive after gaining legal status has little macroeconomic impact. Compared with the base scenario, 20-

year GDP growth only changed by about 0.2 percent when the extent of the wage increase was varied.

- Compared with the reference case, shifting immigrants from the family-based to employment-based immigration categories increased GDP and wages by about 0.2 percent and added about $100 billion in deficit reduction over the 20-year period.

- Immigration reform that does not successfully prevent future unauthorized immigration in combination with broader reforms would not be as effective in reducing the deficit and would result in lower wages than immigration reform with effective enforcement.

These and other study results offer compelling evidence that immigration reform will provide a net economic benefit to the United States. The choice of the reference case and alternative scenarios is intended to provide insight into the economic significance of various assumptions and policy levers. In some cases, the results of the modeling indicate opportunities to improve the economic performance of the reference case as well as policy areas that would benefit from further analysis. The resulting policy decisions are beyond the scope of this staff paper.

The following section presents the results in more detail, while Appendix A presents the methodology and Appendix B fully describes the alternate scenarios.

Summary of Results

Background

For each factor analyzed, this section begins by describing the results of the reference case followed by key results for each of the five alternate scenarios. Each scenario changed a key assumption, thus altering the inputs to the macroeconomic model. Summarized briefly, the scenarios were:

- **Reference case**. The closest approximation of the Senate-passed framework.

- **Scenario 1: Efficacy of enforcement**. The reference case assumes a 75 percent reduction in future unauthorized immigration. In this alternate scenario, future unauthorized immigration falls by only 25 percent. In order to isolate this effect, levels of temporary and permanent immigration were held constant despite the increased supply of unauthorized labor.

- **Scenario 2: Variable cap utilization**. The reference case assumes that high demand would exist for most temporary worker visas and merit points-based visas. Scenario 2 assumes that demand would be much lower than the reference case (a net decrease of 1.7 million by FY2033).

- **Scenario 3: Employment/family balance**. This scenario contains a large shift toward employment-based immigration. After the first two years, all family-based and merit points-based immigrants count toward the employment-based categories. Immediate relative immigration remains the same as the reference case.

- **Scenario 4: Wage effects**. After gaining legal status, currently unauthorized immigrants could see their wages rise. The reference case assumes a 6.5 percent total increase due to gaining legal status. Scenario 4a assumes a 0 percent increase, while Scenario 4b assumes a 12 percent increase.

- **Scenario 5: Attrition through enforcement**. This scenario assumes that all unauthorized immigrants leave the country over the next ten years and that all future unauthorized immigration is prevented. It makes no other changes to the current immigration system and none of its assumptions are based on the reference case.

All results are relative to the current law baseline, or current projections if no change was made to the nation's immigration system. In other words, all results are estimates of the amount of change that immigration reform would cause.

Immigration, Population, and the Labor Force

NUMBER OF IMMIGRANTS

Reference Case. Immigration, population, and labor force estimates describe the extra people who would enter, live, or work in the country under each scenario. In the reference case, immigration reform would increase total immigration by an additional 9.5 million between FY2014 and FY2023, and by an additional 4.3 million over the following ten years (Figure 1).

Two main factors contribute to this result: changes to the legal immigration system and reductions in unauthorized immigration. Legal permanent immigration was projected to rise by 19.5 million over the 20-year period while future unauthorized immigration was projected to fall by 5.7 million. This decline in unauthorized immigration only represents people who would be deterred from entering illegally or overstaying their visa, and does not reflect the legalization provisions. Current unauthorized immigrants who would receive legal status are already in the country and are part of the baseline.

Figure 1. Cumulative increase in immigration, reference case.
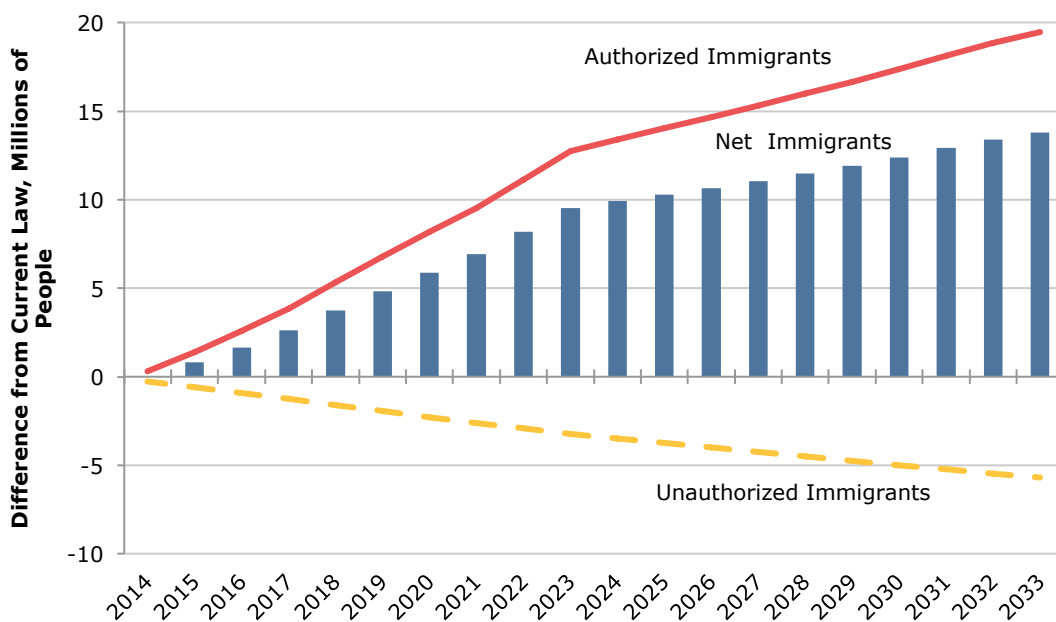
The reference case projects that net immigrant inflows would increase by about 20,000 in FY2014, by about one million per year in FY2015–FY2023, and by about 400,000 per year in FY2024–FY2033 (Figure 2). As with the cumulative totals above, these annual figures are the result of an increase in legal immigration and a decline in unauthorized immigration.

Immigration levels are especially high between FY2015 and FY2023 because 6.4 million people would enter through the clearing of the "backlog" of individuals waiting outside of the country to receive their visas. Employment-based visas and an increase in the

temporary worker population are the other key factors that increase net immigration in the first ten years. In the second decade, three main provisions drive the increase in legal immigration: the increased availability of employment-based visas, a new category of points-based merit visas, and the admission of immediate relatives of the additional immigrants who had entered during the first decade.

Figure 2. Annual increase in immigration, reference case.
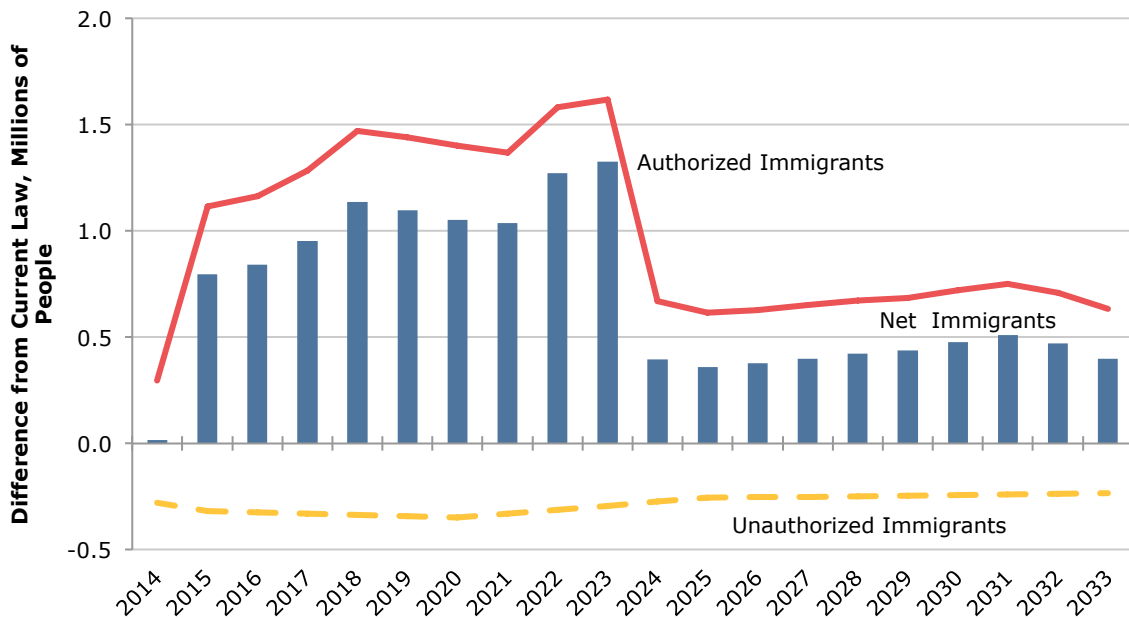
Alternative Scenarios. Compared with the reference case, three of the alternative scenarios resulted in changed future immigration levels. Scenario 1 (effectiveness of enforcement) assumed higher levels of future unauthorized immigration, which caused total immigration to rise by about 3.8 million over 20 years (Figure 3). Scenario 2 (variable cap utilization) assumed lower demand for temporary workers and points-based merit visas, reducing immigration by about 1.7 million. In Scenario 5 (attrition through enforcement), eliminating all present and future unauthorized immigration would reduce net immigration by 19.1 million people. Appendix B provides a more detailed summary of each scenario's estimated immigration levels.

Figure 3. Cumulative change in immigration levels by scenario.

Legend: FY2014-23, FY2024-33, FY2014-33

Difference from Current Law, Millions of People

Scenario	FY2014-23	FY2024-33	FY2014-33
Reference case	9.5	4.3	13.8
1: Effectiveness of enforcement	11.7	5.9	17.6
2: Variable caps	9.0	3.1	12.1
3: Family / employment balance	9.5	4.3	13.8
4: Wage effects	9.5	4.3	13.8
5: Attrition through enforcement	-15.8	-3.3	-19.1
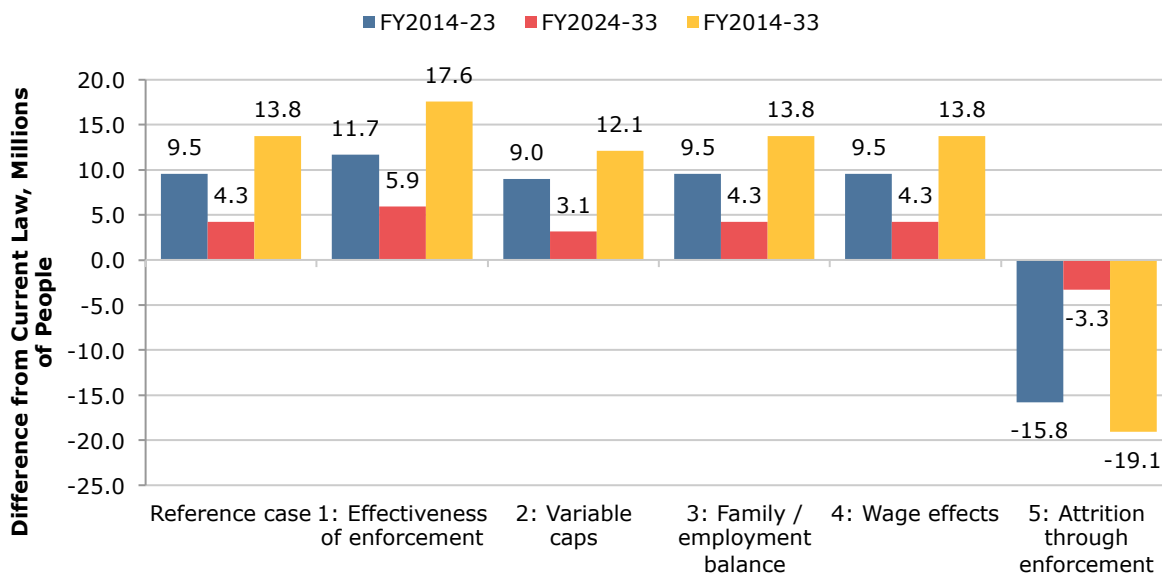
POPULATION AND DEMOGRAPHICS

Reference Case. Each scenario included assumptions about incoming immigrants' ages, genders, and national origins to convert immigration levels into population projections. These projections accounted for fertility, mortality, and emigration.

Newly arrived immigrants tend to be relatively young, meaning that immigration reform would make the overall U.S. population younger. Under the reference case, immigration reform would add 9.3 million people to the U.S. population by FY2023, and just 2 percent of these people would be 65 or older (Figure 4). By FY2033, 13.7 million additional people would be in the United States and only 6 percent would be 65 or older. The age distribution of the new residents grows older between FY2023 and FY2033 for two reasons: (1) immigrants who entered earlier have time to age, and (2) between those years there is an increase in the number of immediate relative immigrants, who tend to be older than employment-based or other family-based immigrants.[4]

These new members of the population would be very young compared with the rest of the U.S. population. In 2012, 14 percent of U.S. residents were 65 or older, and 65 percent were between 16 and 64.[5] According to the Census Bureau's projections, under current law, 20 percent of U.S. residents will be 65 or older in 2030.[6]

With respect to gender, there are more females than males added to the population under the reference case. In FY2033, it is expected that the additional members of the population would be 51.9 percent female, and 53.2 percent in FY2033. Two factors cause the reference case to tilt toward females. First, legal immigration rises, and legal immigrants are statistically more likely to be female.[7] Second, unauthorized immigration falls, and unauthorized immigrants are more likely to be male.[8]

Figure 4. Impact on U.S. population by age, reference case.
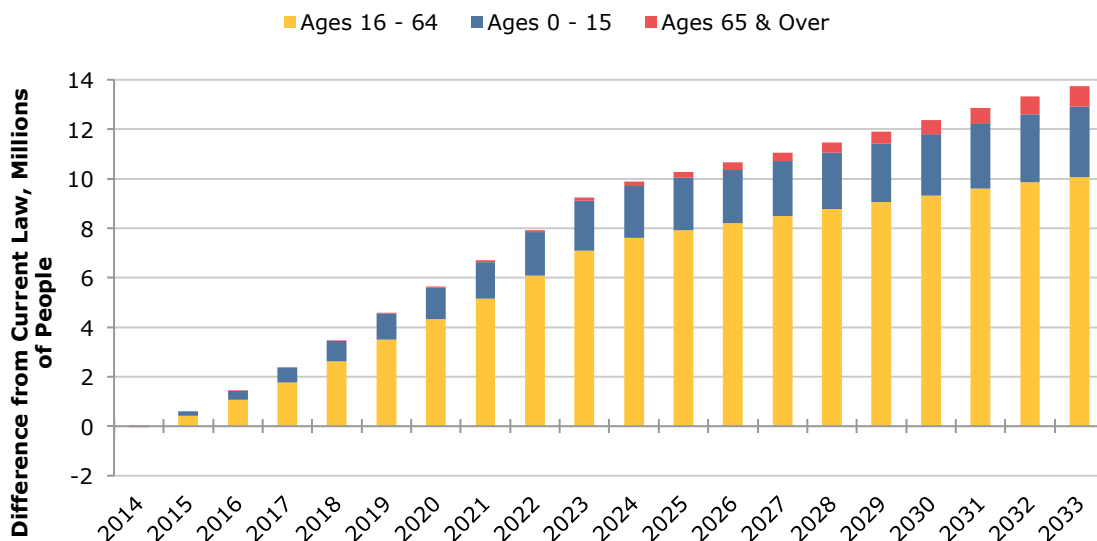
Figure 5. Impact on U.S. population by gender, reference case.
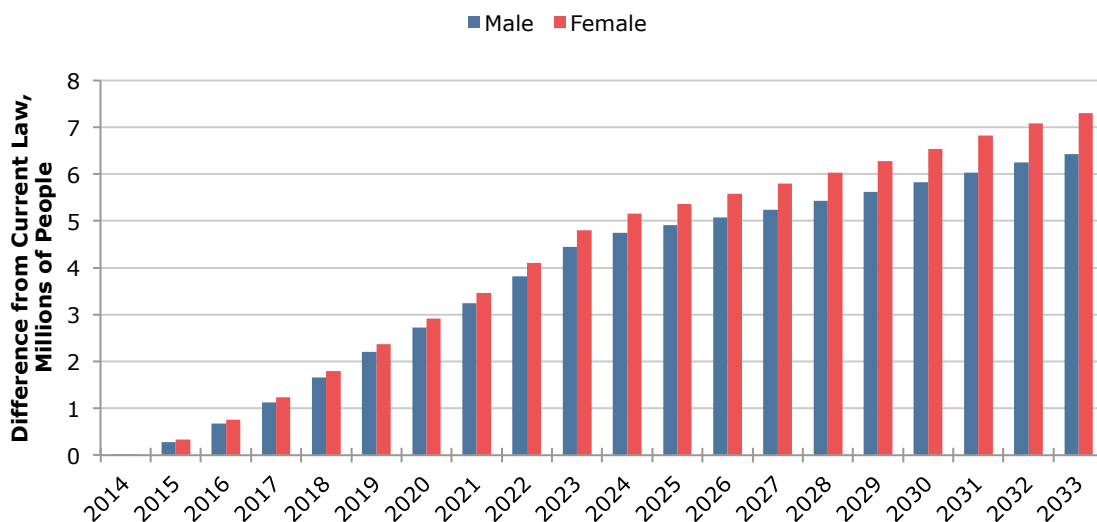
Alternative Scenarios. The alternate scenarios generally project age distributions that are similar to the reference case (Figure 6). Scenario 3 had the lowest share of retirement-age people entering the country, with just 5.4 percent of the new members of the population being 65 or older (0.6 percent below the reference case). This scenario more heavily emphasized employment-based immigrants, who tend to be younger than family-based immigrants.

Gender distributions were also very similar across the alternate scenarios (Figure 7). Under Scenarios 1 and 3, the additional members of the population were 51.9 percent female in

FY2033, or 1.3 percent lower than the reference case. Under Scenario 2, new entrants to the population were slightly more likely to be female than in the reference case.

Scenario 5 shows that eliminating all unauthorized immigrants would make the U.S. population older. Just 5.3 percent of the "missing" members of the population would be 65 or older, and almost three-quarters of these individuals would be between ages 16 and 64. Because unauthorized immigrants are more likely to be male than the general population, just 47.3 percent of the population reduction under Scenario 5 would be female.[9]

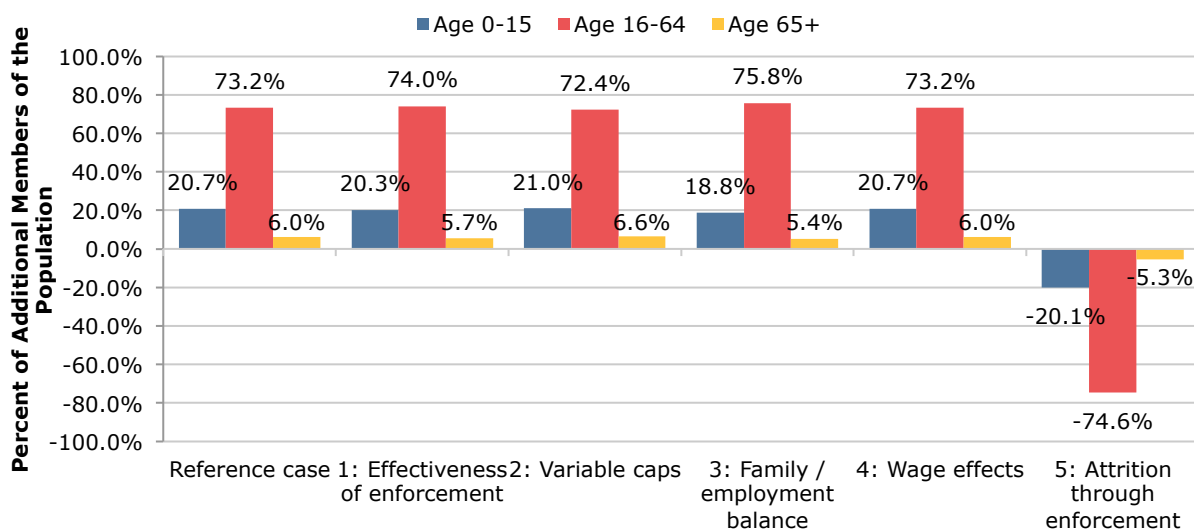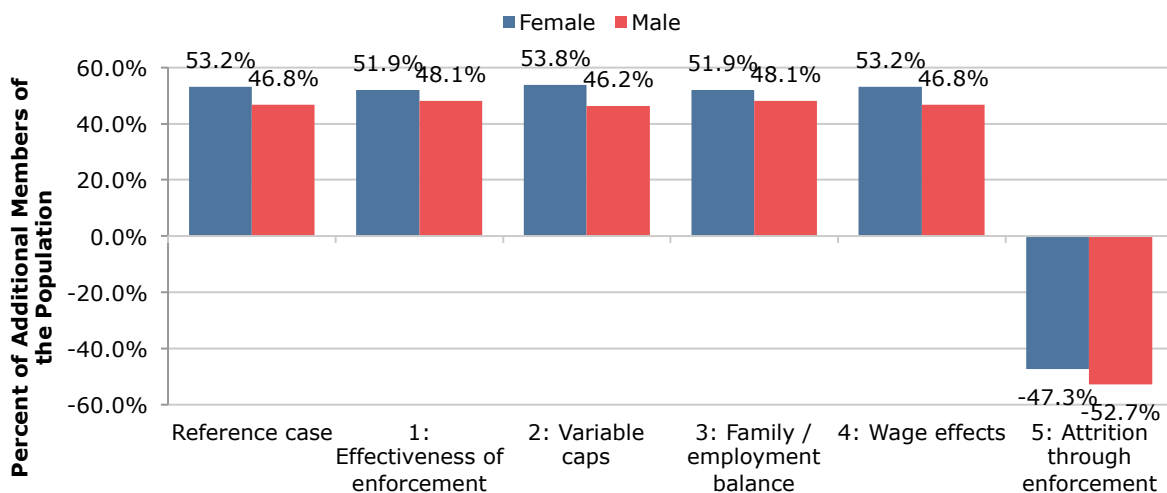**Figure 6. Age distribution of new population entrants by scenario, FY2033.**

Figure 7. Gender distribution of new population entrants by scenario, FY2033.

LABOR FORCE

Reference Case. Adding millions of relatively young people to the population has significant implications for the U.S. labor force. Under the reference case, the U.S. labor force is projected to be 3.1 percent larger by FY2023 and 4.4 percent larger by FY2033 (Figure 8). Immigration reform would increase the size of the labor force for two reasons: more people would enter the population, and those people would be younger than the overall population and therefore more likely to work.[10] By FY2033, about 92 percent of the increase in labor force size would be due to the increased number of people, and the remaining 8 percent would be due to the age distribution of those people.

Figure 8. Impact on labor force size, reference case.
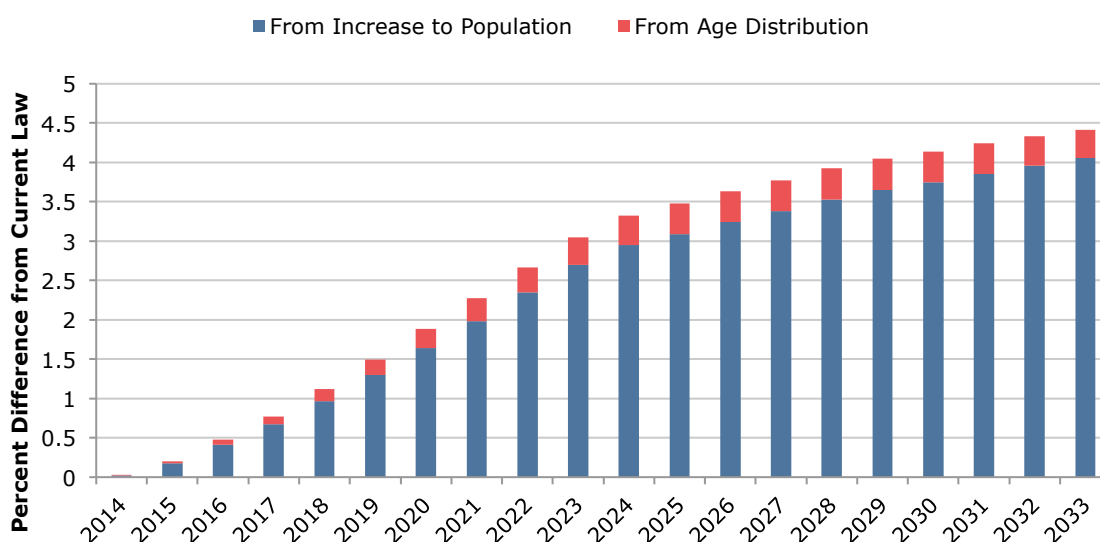
Alternate Scenarios. The scenarios that added the most immigrants also added the most people to the labor force (Figure 9). Scenario 1, which had more future unauthorized immigration than the reference case, increased the size of the labor force by 5.7 percent over 20 years. Scenario 3, which tilted more toward younger employment-based immigrants, saw a slightly larger increase in the labor force than the reference case. Scenario 2, whose 20-year immigration levels were about 1.7 million lower than the reference case, had a proportionally smaller increase in the size of the labor force. Scenario 4's labor force did not significantly differ from the reference case.

In Scenario 5, removing present and future unauthorized immigrants caused a steep decline in the size of the labor force, particularly as the current unauthorized population leaves in the first decade. Over the 20-year period, "attrition through enforcement" results in a 6.4 percent decline in the size of the labor force. The large majority of this decline comes in the first decade, when the current population of unauthorized immigrants is assumed to leave the country.

Figure 9. Change to labor-force size by scenario.
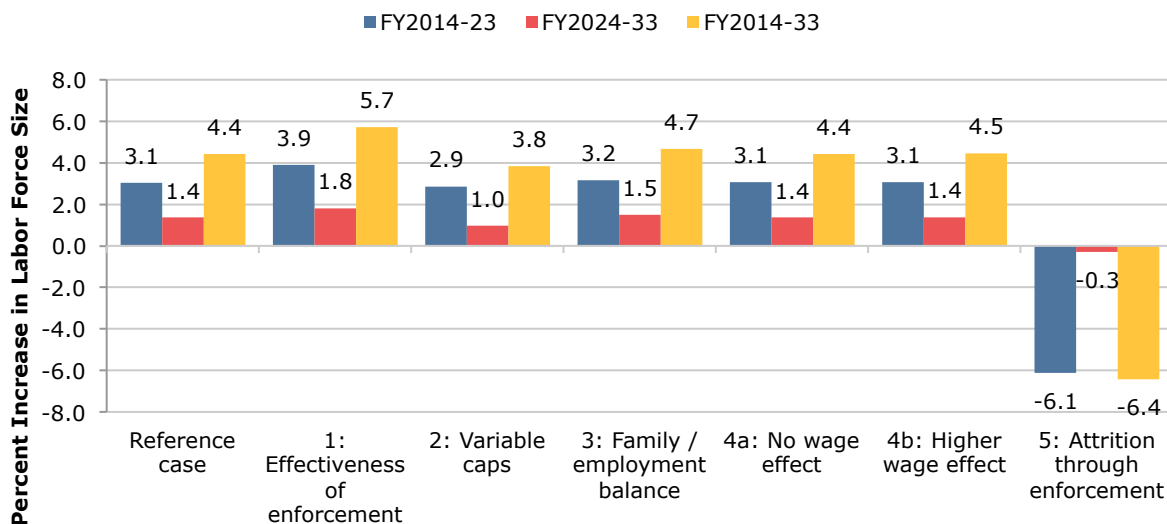
Economic and Fiscal Impacts

OVERALL ECONOMY

Reference Case. Increasing the size of the population and labor force has a significant impact on the size of the economy, as measured by GDP. Additional consumers increase the demand for goods and services, and the larger number of workers enables the economy to produce more of those same goods and services.

The results show that the U.S. economy grows more rapidly under the reference case (Figure 10). Specifically, GDP would be 2.8 percent higher by FY2023 and 4.8 percent higher by FY2033 than it would be without reform. Annual average economic growth would be 0.24 percent higher between FY2014 and FY2033 under the reference case than without reform. Annual increases in economic growth fluctuate over time, with a peak of 0.35 percent higher annual growth from FY2019–FY2023.

Figure 10. Impact on annual and cumulative GDP growth, reference case.
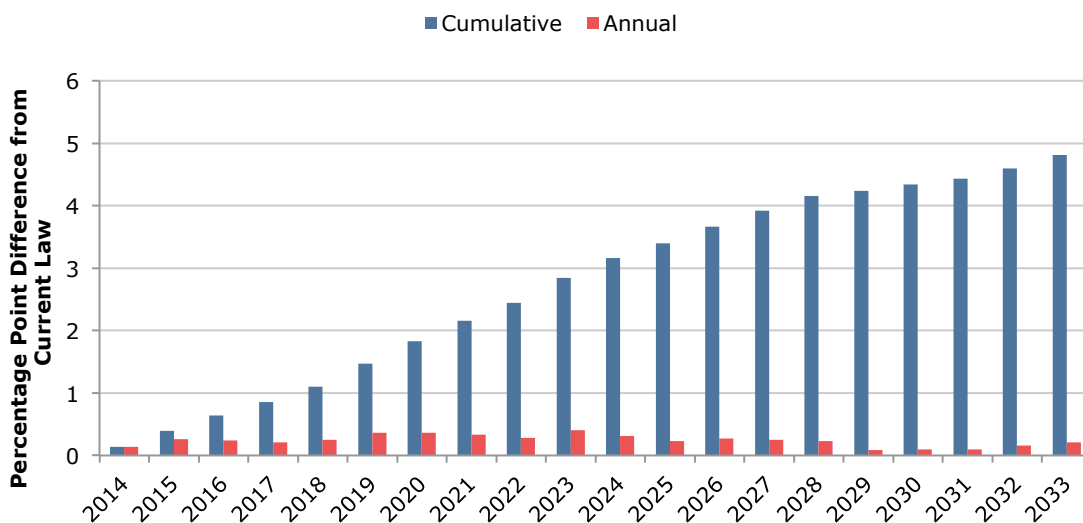
Alternative Scenarios. The alternative scenarios produced similar economic growth to the reference case (Figure 11). Among the first four scenarios, growth was lowest in Scenario 2, which had the smallest increase in new immigrant workers. Growth was highest in Scenario 1, which assumed a smaller reduction in future unauthorized immigration than the reference case (i.e., more future unauthorized immigrants). Scenario 3, which increased employment-based immigration at the expense of family-based immigration, had 5 percent additional GDP growth over 20 years (about 0.2 percent higher than the reference case).

The size of the wage bump that unauthorized immigrants would gain after receiving legal status is a frequent subject of controversy, but in this analysis, varying the size of the wage bump had little impact on macroeconomic outcomes. For example, when it was assumed that legalized immigrants would not experience any wage increase, the 20-year increase in GDP was 0.18 percent lower than the reference case. When it was assumed that legalized immigrants would experience a 12 percent wage bump, GDP was 0.22 percent higher than the reference case.

Unlike the reference case or first four scenarios, Scenario 5 showed a large negative impact on economic growth. Even though unauthorized immigrants tend to earn low wages, they still contribute significantly to the size of the economy. If all unauthorized immigrants left the country by FY2024 and none came in the future, the economy would be approximately 5.7 percent smaller than the baseline by FY2033. Between FY2014 and FY2023, average annual growth would decline by nearly 0.5 percent.

Figure 11. Impact on GDP growth by scenario.

Legend: ■ FY2014-23 ■ FY2024-33 ■ FY2014-33

Scenario	FY2014-23	FY2024-33	FY2014-33
Reference case	2.8	2.0	4.8
1: Effectiveness of enforcement	3.3	2.2	5.5
2: Variable caps	2.7	1.5	4.3
3: Family / employment balance	2.9	2.1	5.0
4a: No wage effect	2.7	2.0	4.6
4b: Higher wage effect	3.1	2.0	5.0
5: Attrition through enforcement	-4.9	-0.7	-5.7
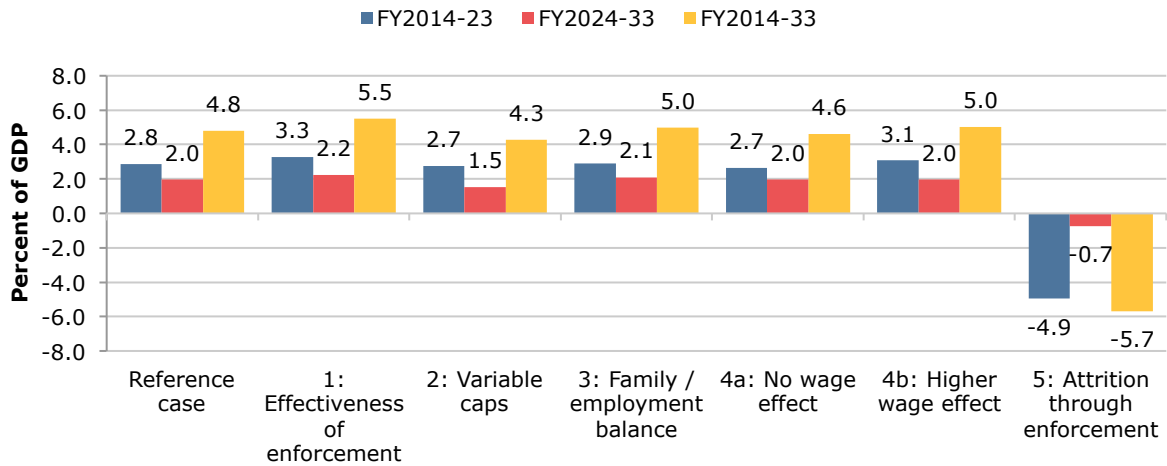
HOUSING

Reference Case. The analysis examined immigration reform's impact on the housing market. Demand for housing units increases as new immigrants enter the economy and form households, accelerating the current housing recovery and fueling growth in this sector of the economy (Figure 12). Under the reference case, average spending on residential construction increased by about $68 billion per year, with a peak of more than $110 billion per year in FY2022–FY2025. The first decade's annual average was about $56 billion per year higher, and the second decade's was about $81 billion.

Figure 12. Annual increase in residential construction spending, reference case.
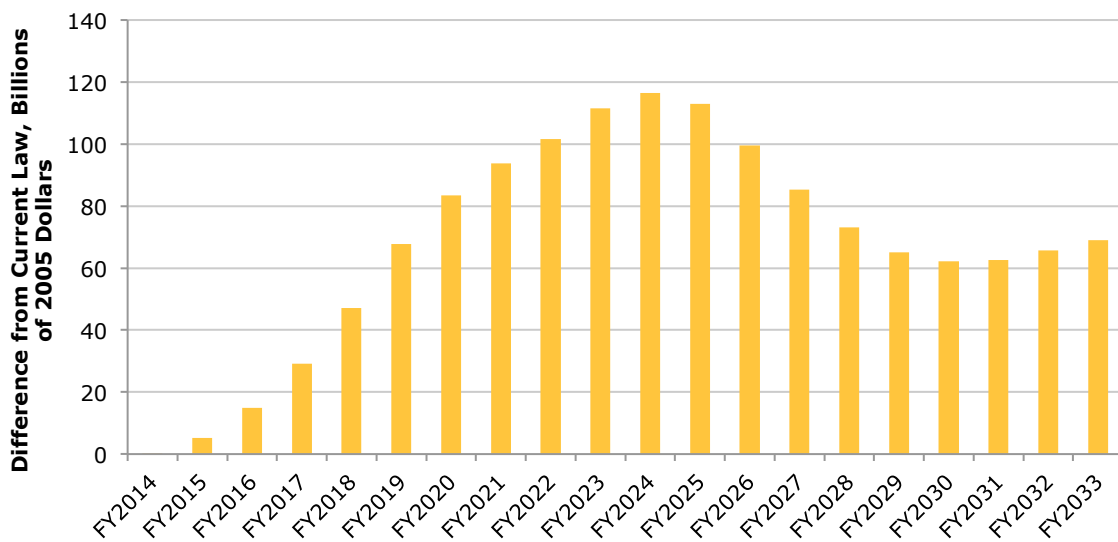
Alternative Scenarios. Projected increases in residential construction spending were closely related to the number of new immigrants entering the country. Under Scenario 1's larger net increase in immigration, annual construction spending was more than $19 billion per year higher than the reference case. The slightly lower immigration levels in Scenario 2 resulted in lower housing demand than the reference case. In Scenario 3, moving immigrants from the family to employment categories resulted in more than $2 billion per year in additional construction spending. Scenario 4 had minimal impact.

Under the "attrition through enforcement" scenario, residential construction spending declined by more than $100 billion per year compared with the baseline, and by more than $175 billion per year compared with the reference case. This is because the removal of all present and future unauthorized immigrants caused a significant decline in the U.S. population. The departure of current unauthorized immigrants would leave many dwellings vacant, and the reduction in future population growth would reduce the need to build additional housing units.

Figure 13. Annual average change in residential construction spending by scenario.
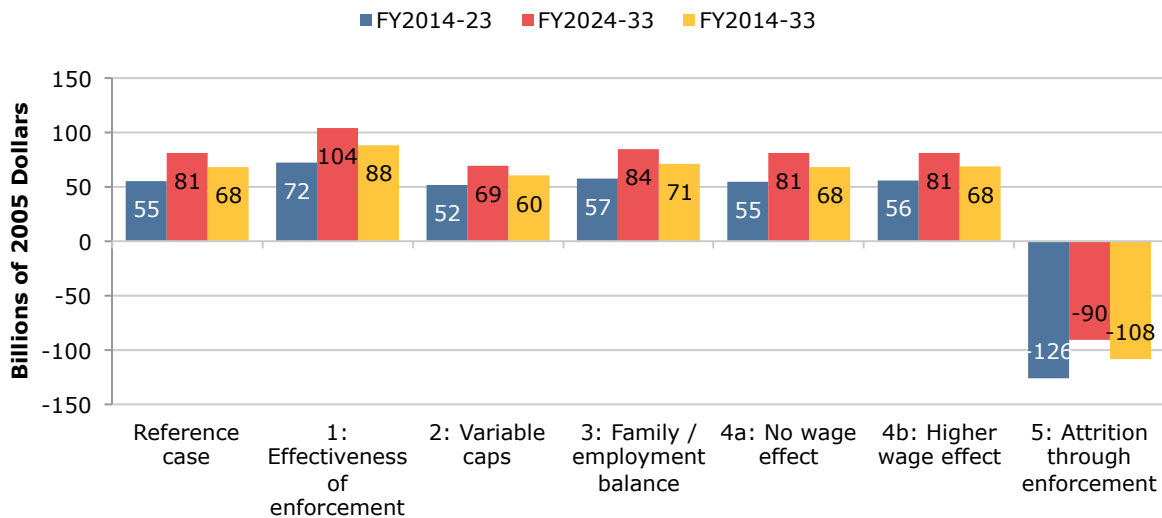
WAGES

Reference Case. The wage-effect results reflect different factors, sometimes reinforcing and sometimes offsetting. All results presented here reflect the effect on overall wages and are not broken down into subgroups. Under the reference case, economy-wide real wages would decline by a total of 0.2 percent by FY2023, but would rise by 0.5 percent by FY2033 (Figure 14).

In all scenarios, three primary factors contribute to the wage effects:

(1) *Changes in who immigrates*. Under the reference case, 8.3 million additional workers would enter the country by FY2033. As explained in Appendix A, these workers are assumed to have an average annual wage of about $44,000 (2012 dollars) over the 20-year period. This average captures workers of all skill levels, from less-skilled guest workers to highly skilled STEM (science, technology, engineering, and math) workers. Additionally, the future population of unauthorized workers, most of whom are less-skilled workers, is reduced by about four million. These workers would have earned about $24,000 annually. All scenarios contain a reduction in future low-wage unauthorized immigration, and all scenarios but Scenario 5 include an influx of workers with relatively higher average wages. This drives wages upward relative to the baseline.

(2) *Legalization of unauthorized workers*. As mentioned above, the reference case assumes that presently unauthorized workers would experience a 6.5 percent wage increase as a result of gaining legal status. This has a small positive impact on overall average wages in the economy.

(3) *Dynamic economic effects*. The economic model accounts for a variety of dynamic economic effects. The most significant effect is a basic principle of economics: when the supply of a good goes up, the price goes down. This principle applies to workers as well. When a large influx of workers enters the labor force, short-term wages fall in response to the supply increase. By contrast, when a large group of workers leaves the economy, the labor market becomes "tighter" and causes average wages to rise in the short term. In addition to this essential factor, MA's model accounts for a wide variety of dynamic effects, including inflation and the impact of the deficit on savings and investment.

**Figure 14. Wage effects of immigration reform, reference case.**
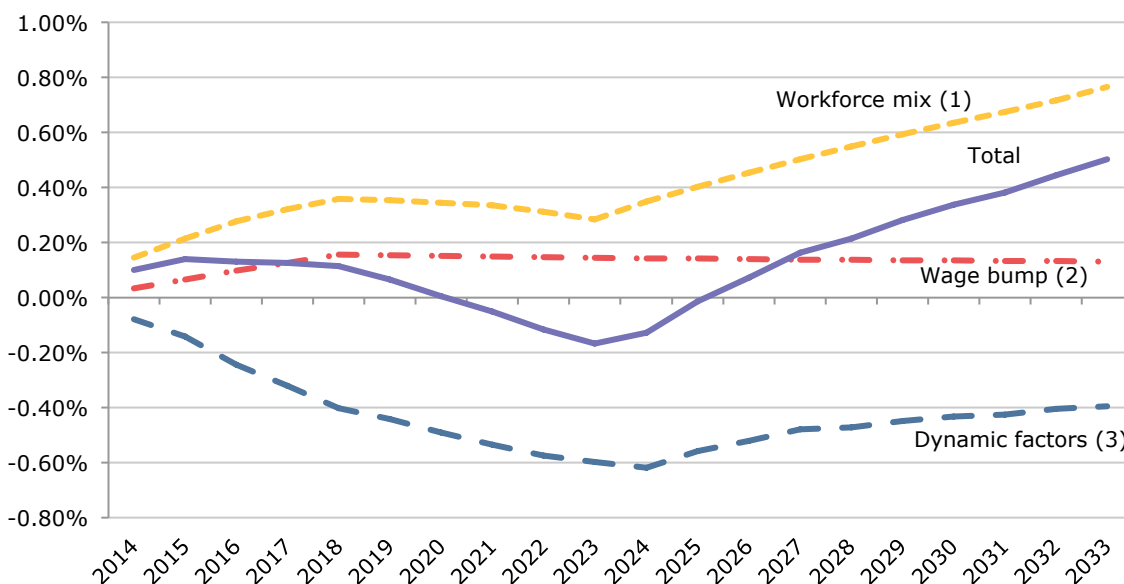
Alternative Scenarios. Compared with the reference case, the impact on wages varies somewhat significantly in the alternate scenarios. The variance reflects the three factors described above. In Scenario 1, for example, average wages would be about 0.2 percent lower in FY2033 compared with 0.5 percent *higher* in the reference case. This is because Scenario 1 assumes that more unauthorized immigrants will enter the country. The additional low-wage workers reduce the average wage of immigrants (factor #1), and the larger number of workers places more downward pressure on wages (factor #3).

Scenario 2 had a larger positive impact on wages than the reference case. In that scenario, fewer immigrants enter the country, causing less downward pressure from the influx of workers. In Scenario 4, eliminating the wage bump for legalized workers reduces wages by nearly 0.3 percent compared with the reference case, but still results in higher long-term wages than the no-reform baseline. Conversely, assuming a larger wage bump would increase the impact on overall wages.

The wage effects of Scenario 5 follow a different pattern. Under Scenario 5, wages rise in the first decade, peaking at 1.4 percent higher than the baseline in FY2023. Wages then fall in the second decade, settling in at 0.9 percent above the baseline in FY2033. The initial increase occurs because millions of low-wage workers would leave the economy, causing a short-term scarcity of labor (factor #3). The lack of future unauthorized workers continues to put upward pressure on wages in FY2024–FY2033, but this is outweighed by other dynamics. For example, as described above, Scenario 5 would have a large negative impact on future economic growth. The slowdown in economic growth would reduce the need for labor over the long-term, effectively eliminating the initial scarcity of labor.

## Figure 15. Wage effects of immigration reform by scenario.
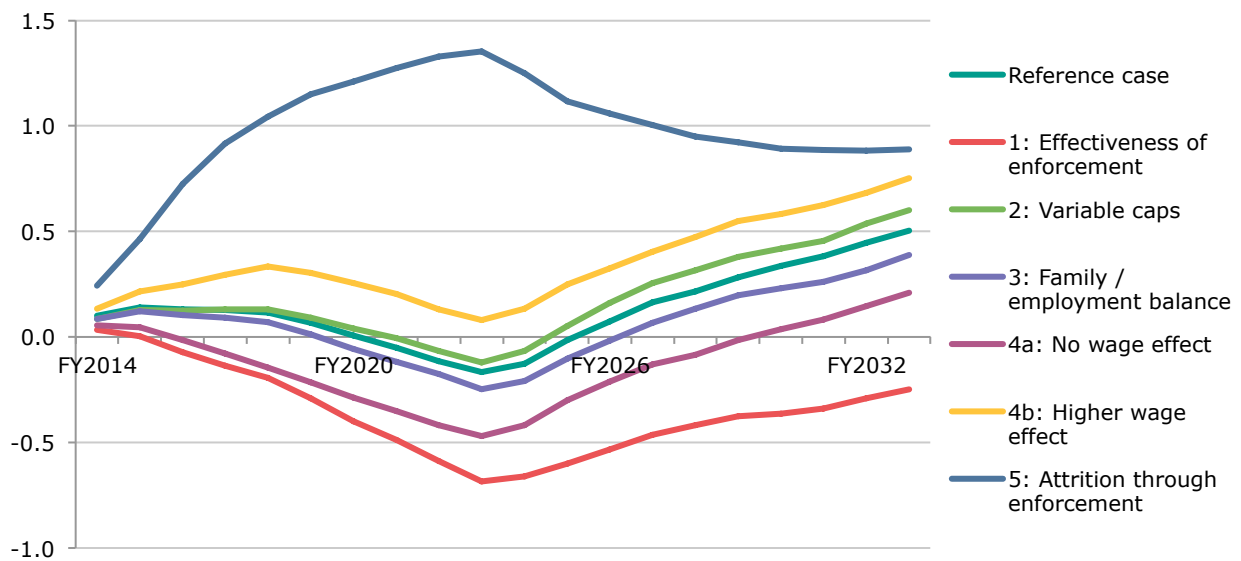
FISCAL IMPACT

Reference Case. By increasing economic growth and adding a significant influx of younger people to the population, the reference case reforms would result in lower federal deficits (Figure 16). Cumulative deficit reduction was equal to $180 billion in the first decade and $990 billion in the second decade. The 20-year total deficit reduction was $1.17 trillion, equal to an annual average reduction of $60 billion.

Over time, immigration reform would continually expand the population of young new workers. This would cause deficit reduction to increase over time. The annual deficit in FY2023 was projected to be about $40 billion lower due to immigration reform, and about $160 billion lower in FY2033.

Figure 16. Cumulative impact on federal deficit, reference case.
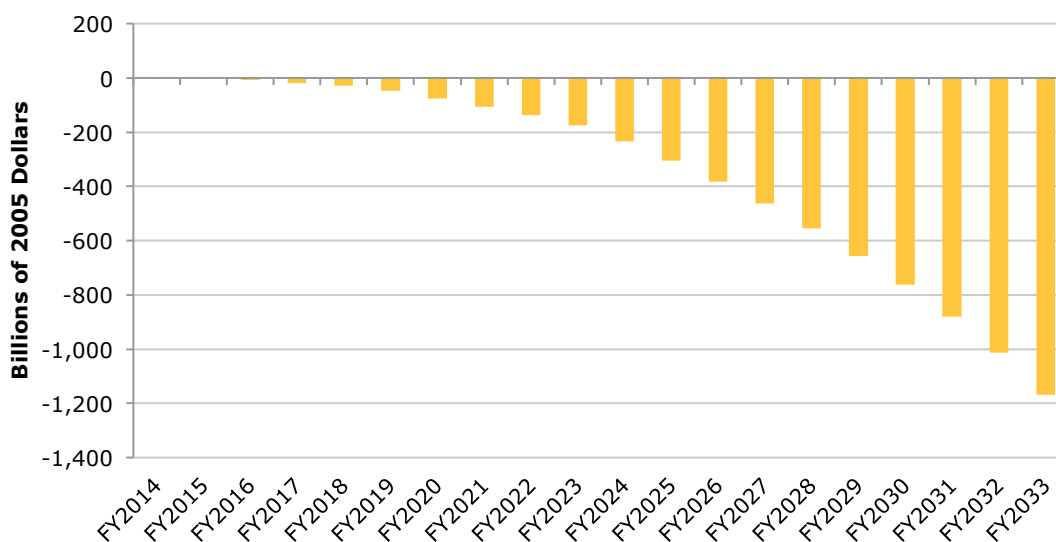
Alternative Scenarios. Each of the first four scenarios followed the same general pattern as the reference case: modest deficit reduction in the first decade followed by significantly higher deficit reduction in the second decade. Scenario 2 showed a lower deficit reduction than the reference case because it projected the smallest increase in immigration. Because employment-based immigrants earn higher wages than family-based immigrants, Scenario 3 increased 20-year deficit reduction by about $1.27 trillion, or $5 billion per year more than the reference case. In Scenario 4, eliminating the wage bump for legalized immigrants decreased deficit reduction compared with the reference case (i.e., slightly increased the deficit), and increasing the wage bump resulted in more deficit reduction.

Removing all present and future unauthorized immigrants (Scenario 5) would significantly increase the budget deficit. Under "attrition through enforcement," the deficit would increase by about $800 billion over 20 years. Although unauthorized immigrants are frequently stereotyped as working under the table, estimates by the Social Security Administration, CBO, and others suggest that at least 50 percent of these individuals pay

federal taxes, using invalid documents to gain employment through the same channels as "documented" legal workers.[11] The loss of this tax revenue, coupled with this population's relatively low use of social services, explains the deficit increase.

Figure 17. Cumulative impact on deficit by scenario.
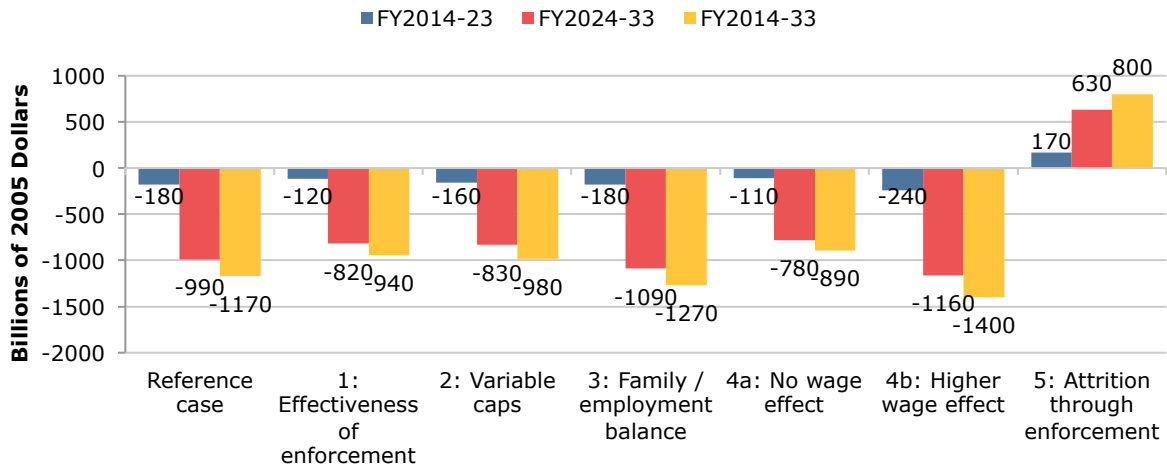
Comparison to CBO. In the summer of 2013, the CBO released three documents that estimated S.744's budget impact: a June 18 cost estimate, a June 18 economic analysis, and a July 3 final cost estimate.[12] For three reasons, none of these estimates are directly comparable to this analysis. First, only the July 3 cost estimate contains final spending levels. Second, only the June 18 economic analysis includes all dynamic economic factors. Third, key assumptions differ, such as the wage bump due to legalization and the future reduction in unauthorized immigration.

For these reasons, the closest comparison is CBO's July 3 final cost estimate, combined with CBO's June 18 estimate of additional deficit reduction due to the use and scoring of dynamic economic factors. The July 3 estimate projected $135 billion in deficit reduction over FY2014–FY2023 and an additional $685 billion over FY2024–FY2033. The June 18 economic analysis found that a full accounting of economic factors would produce an additional $300 billion in deficit reduction in the second decade, bringing the FY2024–FY2033 total to about $1 trillion.

Conclusion

Effective immigration reform can be a powerful instrument of economic revitalization. By increasing the overall population and particularly the number of working-age labor force participants, reform can help expand the economy, contribute to higher overall average wages, generate more consumer spending, and spur new demand for residential housing construction. By supporting stronger economic growth, immigration reform can also reduce the federal budget deficit substantially.

Under the reference case, the study estimates that immigration reform would expand the U.S. labor force by 8.4 million people and cause the economy to grow an additional 4.8 percent over the next 20 years. Wages would initially fall due to the influx of labor, but would rise a total of 0.5 percent by the end of the 20-year period. During this period, immigration reform would also increase residential housing construction by $68 billion annually and provide an immediate boost to a housing market that has yet to fully recover. Finally, reform would lead to about $1.2 trillion in cumulative reduction in the federal budget deficit.

A major benefit of immigration reform is that it can inject vitality into the nation's workforce. Under the reference case, just 0.8 million (6 percent) of the 13.7 million people that immigration reform would add to the U.S. population would be aged 65 or older. The addition of millions of new, younger workers would increase the ratio of workers to retirees and help our country respond to the fiscal challenges associated with an aging population.

This study tested the reference case against five alternative scenarios that change key assumptions. Although the results differ among the five scenarios, four showed that immigration reform can increase economic growth, accelerate demand for housing, and reduce the federal budget deficit. The fifth scenario reflects a highly restrictive approach, assuming all unauthorized immigrants leave the country within ten years, all future unauthorized immigration is prevented, and no further changes are made to our legal immigration system. This scenario reduces GDP growth by almost 6 percent over the next two decades.

In conclusion, it is important to note that this analysis is not an endorsement of the Senate bill or any other policy proposal. The study does not examine other aspects of immigration reform including demographic or national security concerns, nor does it look at the cultural benefits that immigrants bring to our communities. Clearly, these issues are important considerations for immigration reform proposals.

This study provides evidence that immigration reform will contribute to our nation's future economic prosperity. The alternate scenarios further demonstrate the strength of this conclusion, as well as the fact that the benefits of reform are not dependent on any

particular policy proposal. Importantly, the analysis also presents opportunities to improve upon the economic performance of the Senate-passed legislation. Policymakers will need to consider the balance of both economic and broader social impacts when crafting future reforms to the U.S. immigration system.

Appendix A: Methodology

IMMIGRATION FLOWS

The study uses the Senate-passed S.744 as a reference case. Measuring the bill's macroeconomic impact required a thorough accounting of its changes to the immigration system. Three major factors affect the bill's impact on total immigration: (1) changes to legal permanent resident (LPR or green card) visas, (2) changes to temporary "guest worker" programs, and (3) an assumed reduction in unauthorized immigration. BPC has separately published a category-by-category summary of S.744's major changes to visa categories.[13]

1. Legal permanent immigration. Family-based immigration (F visas) would be reorganized under S.744. The F-2A category, which admits green-card holders' spouses and children under the age of 21, becomes uncapped. The remaining categories are modified in two steps: a new cap for the first 18 months and another new cap for all subsequent years. After 18 months, the F-4 category for brothers and sisters of citizens is eliminated, and the minimum number of F visas per year falls from 226,000 to 161,000. This minimum number of visas is often called the "effective cap." However, S.744 maintains the current overall cap of 480,000 for F visas.[14]

Employment-based immigration (EB visas) would also be reorganized. The following categories would no longer be subject to a numerical cap: the current EB-1 category (Priority Workers);[15] individuals with a U.S. doctorate or foreign equivalent; individuals who hold an advanced degree in a STEM field and who have a job offer; and certain physicians. The cap for the remaining categories (EB-2 through EB-5) would remain at 140,000, but spouses and children would no longer count against this cap. Between 2003 and 2012, spouses and children received 54 percent of EB visas. The study assumes that this ratio would stay the same under S.744. In effect, this more than doubled the number of EB visas available. The bill also creates a new EB-6 category for immigrant entrepreneurs.

Projected F and EB immigration levels were reasonable approximations that drew on the best publicly available data. Categories that currently have high demand and large backlogs were assumed to use all available visas in future years. The two major newly uncapped categories (F-2A and EB-1) have relatively low demand under current law and were presumed to have a minimal impact on immigration levels. For the other newly uncapped employment categories (doctorates, STEM advanced degrees, and physicians), underlying data included annual inflows of foreign physicians, the number of PhDs and master's degrees earned by temporary residents, and current stay rates of foreign PhD earners.[16] The balance between EB and F immigration levels is a frequent subject of debate. In the

sensitivity analysis, Scenario 3 examines how economic outcomes would change if S.744 more heavily emphasized EB immigration.

Between FY2015 and FY2021, the "Merit Track Two" provision is used to clear out the existing backlog of immigrants waiting abroad for an EB or F visa. At last count, a total of 4.4 million immigrants were in the backlog, 4.3 million of whom were in the family categories.[17] In FY2022–FY2023, Merit Track Two would also clear a "secondary backlog" of family immigrants who apply during the first years after the legislation takes effect. CBO estimated that two million individuals would enter under this secondary backlog.[18] In a separate provision, the bill "recaptures" EB and F visas that went unused between FY1992 and FY2013 by adding them to the FY2015 cap. Based on available data from FY1992–FY2011, the projections assumed this would add a total of 650,000 visas, about 60 percent of which were EB visas.[19]

Additional provisions also impact legal permanent immigration. The current Diversity Visa program would be eliminated and replaced by "Merit Track One," a points-based category with a flexible cap of 120,000 to 250,000 immigrants per year. In the second decade, immediate relative (IR) immigration increases as the net new immigrants gain citizenship and subsequently sponsor spouses, children, and parents through the uncapped IR categories. Based on the best available data on the observed relationship between the number of IR visas and total immigration, the study projected that each immigrant would sponsor 0.2 immediate relatives and that these relatives would begin arriving nine years after the sponsoring immigrant.[20] It is important to note that the IR sponsorship ratio does not account for family members who accompany a primary visa petitioner upon receipt of their visa. This number only reflects immediate relatives brought in from abroad who follow immigrants after their initial arrival or are petitioned for by U.S. citizens. Relatives who accompany the primary sponsor under the terms of an EB or F visa are accounted for in the projected EB and F flows.

To assess the impact of immigration increases on the overall size of the U.S. population, the study combined estimates of the age, gender, and national origins of incoming immigrants with assumptions about fertility, mortality, and emigration. MA carried out these calculations based on Census Bureau methodology.

   2. Guest workers. The Senate bill, like previously proposed reforms, would significantly increase the availability of guest workers by raising the cap on skilled H-1B workers and creating new W visa categories for both agricultural (W-3 and W-4) and nonagricultural (W-1) workers. Further, the bill would eliminate the current H-2A agricultural worker program, expand the E-3 visa, and create new E-4, E-5, and E-6 visas.[21] After six years, it was assumed that guest workers would either return to their home country or would adjust to permanent resident status as part of the projected Merit Track One or EB flows.

Under S.744, H-1B and W visas would have numerical limits, or caps, that could change from year to year. In the reference case, the study assumes high levels of utilization in the

H-1B, W-1, and Merit Track One categories. In the sensitivity analysis, Scenario 2 accounts for the possibility that demand for these visas would be much lower. For W-3 and W-4 visas, the cap would be set at the secretary of agriculture's discretion; all of the study's scenarios assumed a conservative 1 percent annual increase for both agricultural worker categories.

3. Unauthorized immigrants. In order to estimate the macroeconomic impact of immigration reform, it is necessary to make assumptions about how reform would impact future unauthorized immigration. Data and evidence on this question are scarce. Although the depth of its analysis was unclear, CBO's assumptions in this area attracted significant attention.

The reference case assumed a large reduction in unauthorized immigration for two reasons. First, because the country should strive for successful immigration reform, an analysis of reform with successful border security and interior enforcement provisions is more useful. Second, because unauthorized immigrants contribute to GDP, assuming a smaller reduction in unauthorized immigration would exaggerate the economic benefits of successful reform.

To approximate the future level of unauthorized immigration, the study bases its projections on the Social Security Administration's estimate of "other immigration," which captures unauthorized border crossers and temporary visa holders who do not leave the country or adjust to permanent resident status.[22] Under the reference case, future unauthorized immigration is reduced by 75 percent. However, Scenario 1 contains a 25 percent reduction, reflecting how immigration reform's economic impacts might change with less effective enforcement. It is important to note that in order to isolate the impact of this change, Scenario 1's legal immigration levels (both temporary and permanent) did not differ from the reference case.

ECONOMIC FACTORS

1. Wages. The study required wage estimates for three key groups: the net new immigrants entering the economy, the deterred unauthorized immigrants who would no longer come in the future, and the newly legalized population of formerly unauthorized immigrants. Figure 18 summarizes these wage assumptions. For each deterred unauthorized immigrant, a worker earning about $24,000 was removed from the economy (relative to the baseline scenario). This wage was based on the Pew Research Center's 2009 estimate of unauthorized immigrant wages, converted to 2012 dollars.[23]

Because each year's net legal immigrant flow varied in composition, the study required a methodology that could adjust the incoming immigrant wage by type of immigrant. To this end, the study broke each year's net legal immigrant flow into six distinct groups. The first five of those groups were H-1B guest workers, less-skilled guest workers, STEM graduate degree holders, non-STEM doctorate holders, and physicians.[24] The sixth group was by far the largest: immigrants entering under the current EB, F, IR, and Diversity categories. The study used two key data sources to estimate wages for the sixth group: the occupational distribution of immigrants under each category from the Yearbook of Immigration Statistics,

and the noncitizen wage for each occupational group from the Current Population Survey. For each of the EB, F, IR, and Diversity categories, a single per-worker wage was derived using the occupational noncitizen wages, weighted by the share of immigrants in those occupations. Although noncitizen wages may understate true earnings due to that category's inclusion of guest workers and unauthorized immigrants, the study made a conservative assumption.

In the reference case and first four scenarios, Merit Track Two's emphasis on family-based immigration lowers the average wages for newly admitted immigrants during FY2015–FY2023. In FY2014 and FY2024–FY2033, when each scenario's immigrant flow was more heavily weighted toward employment-based immigrants, wages were significantly higher but still lower than the average worker in the economy (including immigrants and non-immigrants).

Figure 18. Assumed wage levels in 2012 dollars.
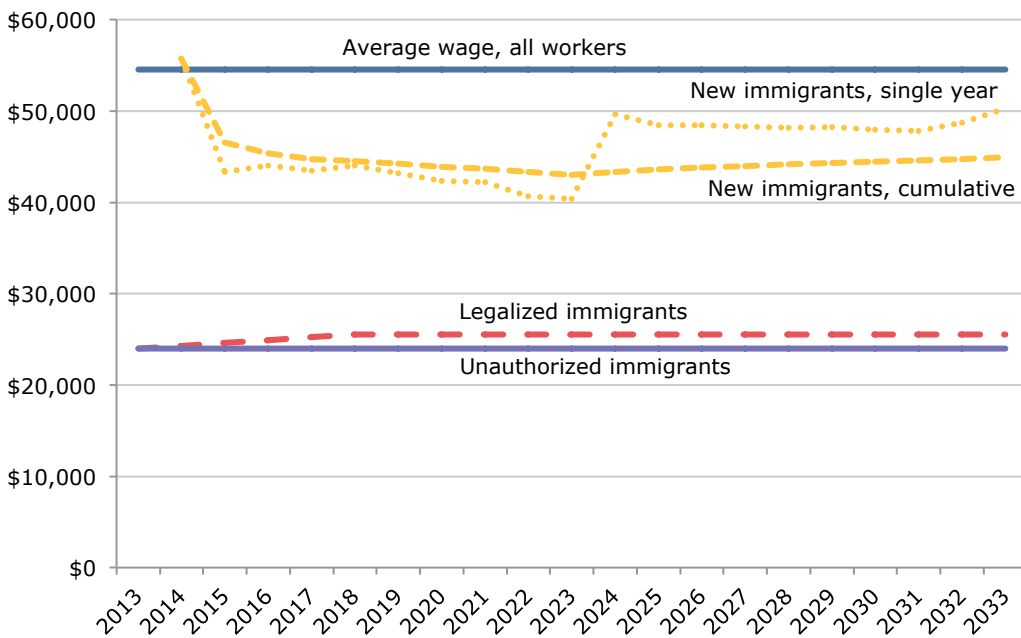
2. Legalization. Projecting the economic and budgetary effects of legalization required two key assumptions: the number of immigrants gaining legal status and legalization's impact on their wages. Because little basis existed to project how unauthorized immigrants would move through the legalization process, the study approximated the assumptions based on the description in CBO's June 18 cost analysis. One significant change was made to these assumptions. CBO estimated that about 420,000 of the 1.5 million individuals who entered the country as children would become LPRs or citizens by FY2033. The study assumed that 75 percent (about 1.1 million) of these individuals would become LPRs or citizens by FY2033, matching CBO's rate for other unauthorized immigrants outside the agricultural blue-card program. Compared with CBO,

this choice increased the number of legalized immigrants that can access government services.

Based on a review of the literature, newly legalized immigrants were credited with a wage increase of 6.5 percent, phased in evenly over the first five years of legal status.[25] Although this increase may appear low to some observers, it was chosen for two main reasons. First, the best evidence available supported it.[26] Second, this study took a conservative approach to ensure that it did not overestimate the positive impacts of reform. To account for the controversy and uncertainty around this question, Scenario 4 contained two alternate assumptions: a 0 percent wage increase (consistent with the assumptions of some skeptics) and a 12 percent wage increase (matching CBO's estimate).

Although legitimate arguments can be made that wage increases would be higher, many who argue this point misinterpret a 1996 Department of Labor (DOL) report on findings from the Legalized Population Survey.[27] The survey found that in the five years after the 1986 legalization, legalized immigrants experienced a 15.06 percent wage increase. Applying this figure to future legalizations is inappropriate because DOL made no attempt to control for any other factors or to show that the increase was linked directly to the effects of legalization. In fact, DOL's comparison group of U.S. workers experienced a nearly identical 15.03 percent wage increase. Additionally, the survey included just 1.6 million of the 2.7 million legalized immigrants and excluded all agricultural workers.

   3. Budget analysis. MA's model estimated changes to federal revenues and federal spending. On the spending side, the new additions to the population were separated into 21 cohorts: one cohort for each of the 20 years in the study, and another cohort for the unauthorized population. The population characteristics of each cohort—namely age, gender, and wage level—were then matched against eligibility rules for each major federal benefit program, including tax revenues. This yielded counts of the number of people eligible to receive each benefit. All scenarios adopted CBO's estimated level of discretionary spending under S.744. On the revenue side, assumed tax receipts for the unauthorized population were adjusted downward to account for this population's low tax rate and tax compliance. It should be noted that in any study that relies on the characteristics of unauthorized immigrants, the limited availability of data makes precision difficult. Readers should interpret Scenario 5's directional impacts with confidence, but should not direct undue focus at individual values.

   4. Other factors. Differences between the MA and CBO models affected macroeconomic projections. Most significantly, CBO's macroeconomic study assumed a 1 percent increase in total factor productivity because the "the increase in immigration—particularly of highly skilled immigrants—would tend to generate additional technological advancements." By contrast, this study did not include such a productivity increase. Copying CBO's assumption in this case would have improved the economic and fiscal results. Similar to CBO, MA's model assumes that the Federal Reserve would maintain the unemployment rate along the baseline path, with the economy reaching full employment around FY2017.

Appendix B: Alternative Scenarios

The study analyzed six main immigration reform scenarios. The reference case is based on policy choices made in the Senate bill. The first four scenarios change key assumptions utilized in the reference case, and the fifth assumes a different immigration reform approach that is not at all based on the reference case. Below, Table B-1 compares the reference case with each scenario's alternate assumptions.

Table B-1. Alternate assumptions compared with the reference case.

SCENARIO	REFERENCE CASE	ALTERNATE ASSUMPTION
1: Efficacy of enforcement	Immigration reform reduces future unauthorized immigration by 75 percent.	Immigration reform reduces future unauthorized immigration by 25 percent.
2: Variable caps	Caps for three programs increase quickly: - H-1B: Cap increases by 15,000–20,000 per year until reaching the maximum of 180,000 in FY2018. - W-1: Cap increases by 10,000 per year until reaching the maximum of 200,000 in FY2031. - Merit Track One: Cap increases 4.5 percent per year and reaches the maximum in FY2035.	Caps for three programs increase slowly: - H-1B: Cap increases by 5,000 every other year and never reaches the maximum. - W-1: Cap increases by 1 percent per year and never reaches the maximum. - Merit Track One: Cap increases 1 percent per year and never reaches the maximum.
3: Family/ employment balance	For the purposes of determining immigrant characteristics, half of Merit Track One immigrants count as family and half count as employment. The estimated number of F visas and EB visas reflects S.744.	All Merit Track One immigrants count toward employment. All F visas are shifted to employment after the first two years (161,000 per year).* This scenario does not change IR visas or the current F-2A visa, which S.744 moves to the IR categories.
4: Wage effects	Unauthorized immigrants receive a 6.5 percent wage bump in the five years following enactment.	Scenario 4a: 0 percent wage bump. Scenario 4b: 12 percent wage bump.
5: Attrition through enforcement	Unauthorized immigrants receive legal status. Future unauthorized immigration falls 75 percent. The legal immigration system is changed in line with S.744.	All current unauthorized immigrants leave the country over the first ten years after enactment. All future unauthorized immigration is prevented. Legal immigration continues unchanged at baseline levels.

* This cutoff was chosen because S.744 reorganizes family-based visas in two stages, the second of which would take effect 18 months after enactment.

Three of the alternate scenarios changed the total number of immigrants entering the country, and one scenario changed the type of immigrants without altering the overall number. Table B-2 below summarizes each scenario's impact on immigration levels by major category. The bold highlighted rows represent the reference case, and the plain text rows indicate cases where the alternate scenarios differ from the reference case. Additionally, Scenario 5 only changed the number of unauthorized immigrants and did not modify any other category.

Note that unlike the detailed population figures presented in Table 2 of the CBO's initial S.744 cost estimate, these figures are not population estimates. They have not been adjusted for fertility, mortality, or emigration. For the temporary worker categories, it is important to emphasize that these figures are net changes, not gross flows. This means that these figures count the number of additional workers who enter under increased caps, but subtract these additional workers when they leave or adjust their status. Thus, it may be more useful to think of the temporary worker figures as an increase in the total number allowed to be in the country at any one time.

Table B-2. Net change to immigration by scenario, millions of people.

	FY2014–FY2023	FY2024–FY2033	Total
Temporary workers & derivatives	**2.8**	**0.8**	**3.6**
Scenario 2	2.3	0.4	2.6
Family & Immediate Relative	**0.7**	**2.3**	**3.0**
Scenario 3	-0.6	0.7	0.1
Employment	**2.4**	**2.1**	**4.6**
Scenario 3	3.7	3.8	7.5
Merit Track One & Diversity	**0.4**	**1.5**	**1.9**
Scenario 2	0.4	0.9	1.2
Merit Track Two	**6.4**	**0.0**	**6.4**
Unauthorized	**-3.2**	**-2.5**	**-5.7**
Scenario 1	-1.1	-0.8	-1.9
Scenario 5	-15.8	-3.3	-19.1
Total	**9.5**	**4.3**	**13.8**
Scenario 1	11.7	5.9	17.6
Scenario 2	9.0	3.1	12.1
Scenario 5	-15.8	-3.3	-19.1

Endnotes

[1] Congressional Budget Office (2013a). "Cost Estimate: S. 744 Border Security, Economic Opportunity, and Immigration Modernization Act." Washington, DC: Congressional Budget Office. Page 3. Accessed June 27, 2013. Available at: http://www.cbo.gov/sites/default/files/cbofiles/attachments/s744.pdf. Congressional Budget Office (2013b). "The Economic Impact of S. 744, the Border Security, Economic Opportunity, and Immigration Modernization Act." Washington, DC: Congressional Budget Office. Accessed June 27, 2013. Available at: http://www.cbo.gov/publication/44346.

[2] Robert Rector and Jason Richwine (2013). "The Fiscal Cost of Unlawful Immigrants and Amnesty to the U.S. Taxpayer." Washington, DC: Heritage Foundation. Accessed May 20, 2013. Available at: http://www.heritage.org/research/reports/2013/05/the-fiscal-cost-of-unlawful-immigrants-and-amnesty-to-the-us-taxpayer.

[3] Robert Lynch and Patrick Oakford (2013). "The Economic Effects of Granting Legal Status and Citizenship to Undocumented Immigrants." Washington, DC: Center for American Progress. Accessed October 1, 2013. Available at: http://www.americanprogress.org/issues/immigration/report/2013/03/20/57351/the-economic-effects-of-granting-legal-status-and-citizenship-to-undocumented-immigrants/.

[4] Based on compiled data from: Department of Homeland Security (2003–2012), *Yearbook of Immigration Statistics*, Legal Permanent Resident tables. For 2003–2004, see Table 7; for 2005–2012, see Table 9. *Note on immigration categories:* Immediate relative visas have no numerical limit and include spouses, parents, and unmarried under-21 children of U.S. citizens. Family-based visas include siblings of U.S. citizens, married and over-21 children of U.S. citizens, and spouses and under-21 children of green-card holders.

[5] U.S. Census Bureau (2012). "Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2012." Table ID: PEPSYASEXN. Available at: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2012_PEPSYASEXN&prodType=table.

[6] U.S. Census Bureau (2013). "2012 National Population Projections: Summary Tables." Calculated from Table 2, Middle Series. Available at: http://www.census.gov/population/projections/data/national/2012/summarytables.html.

[7] Department of Homeland Security (2003–2012). *Yearbook of Immigration Statistics*. Table 8 (2005-12), Table 6 (2003-04).

[8] Michael Hoefer, Nancy Rytina, and Bryan Baker (2012). "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2011." Washington, DC: Department of Homeland Security.

[9] Recall that population projections were adjusted for fertility, mortality, and emigration. This is why the lost residents are more likely to be female than the current unauthorized population.

[10] Bureau of Labor Statistics (2013). "Foreign-born Workers: Labor Force Characteristics—2012." Available at: http://www.bls.gov/news.release/pdf/forbrn.pdf.

[11] Congressional Budget Office (2007). "The Impact of Unauthorized Immigrants on the Budgets of State and Local Governments." Available at: http://www.cbo.gov/publication/41645.

[12] Congressional Budget Office (2013a). "Cost Estimate: S. 744 Border Security, Economic Opportunity, and Immigration Modernization Act." Washington, DC: Congressional Budget Office. Page 3. Accessed June 27, 2013. Available at: http://www.cbo.gov/sites/default/files/cbofiles/attachments/s744.pdf. Congressional Budget Office (2013b). "The Economic Impact of S. 744, the Border Security, Economic Opportunity, and Immigration Modernization Act." Washington, DC: Congressional Budget Office. Accessed June 27, 2013. Available at: http://www.cbo.gov/publication/44346. Congressional Budget Office (2013c). "Letter to the Honorable Patrick J. Leahy." Accessed July 5, 2013. Available at: http://www.cbo.gov/sites/default/files/cbofiles/attachments/s744aspassed.pdf.

[13] Bipartisan Policy Center (2013). "Major Visa Categories Changed by the Border Security, Economic Opportunity, and Immigration Modernization Act (S.744)." Available at: http://bipartisanpolicy.org/library/research/major-visa-categories-changed-border-security-economic-opportunity-and-immigration.

[14] The number of F visas granted each year is equal to 480,000 minus the number of IR visas. When that figure is less than the minimum number, the minimum number is allowed instead. The number of IR visas is usually high enough that the minimum cap comes into play. Between FY2003 and FY2012, the annual average number of IR visas was 469,287 (compiled from the *Yearbook of Immigration Statistics*). This is why the minimum is considered the "effective cap"—enough IR visas are given out that the number of F visas allowed usually equals the minimum.

[15] This category admits three types of immigrants: those with "extraordinary ability in sciences, arts, education, business, or athletics"; those who are "outstanding professors or researchers with at least three years of experience in teaching or research and who are recognized internationally"; and those who are "managers and executives subject to international transfers to the United States." See: Bipartisan Policy Center (2013). "Immigration 101." Available at: http://bipartisanpolicy.org/sites/default/files/Immigration%20101%20format.pdf.

[16] *Doctorate earners:* The study used National Science Foundation (NSF) data on degrees earned and stay rates, and projected historical growth rates onto the FY2014–FY2033 period. See: NSF (2011). "Science and Engineering Doctorates: 2011." Tables 18 and 53. Available at: http://www.nsf.gov/statistics/sed/2011/data_table.cfm. *Master's earners:* The study used NSF data on degrees earned and the classification of eligible institutions, projected historical growth rates onto the FY2014–FY2033 period, and assumed that half of these individuals would enter under the provision. See: NSF (2012). "Science and Engineering Indicators 2012." Appendix tables 2-1 and 2-26. Available at: http://www.nsf.gov/statistics/seind12/appendix.htm. *Physicians:* The study used current data on international medical graduates, assumed half would immigrate under this provision, and projected 1 percent annual growth. See: Association of American Medical Colleges (2008). "The Complexities of Physician Supply and Demand: Projections Through 2025." Available at: https://members.aamc.org/eweb/upload/The%20Complexities%20of%20Physician%20Supply.pdf.

[17] U.S. Department of State (2012). "Annual Report of Immigrant Visa Applicants in the Family-sponsored and Employment-based preferences Registered at the National Visa Center as of November 1, 2012." Available at: http://www.travel.state.gov/pdf/WaitingListItem.pdf.

[18] Congressional Budget Office (2013a). "Cost Estimate: S. 744 Border Security, Economic Opportunity, and Immigration Modernization Act." Washington, DC: Congressional Budget Office. Page 19. Accessed June 27, 2013. Available at: http://www.cbo.gov/sites/default/files/cbofiles/attachments/s744.pdf. Congressional Budget Office (2013b).

[19] Citizenship and Immigration Services Ombudsman (2010). *Annual Report 2010*. Available at: http://www.dhs.gov/xlibrary/assets/cisomb_2010_annual_report_to_congress.pdf. See also: Office of Immigration Statistics (2012). "U.S. Legal Permanent Residents: 2011." Available at: http://www.dhs.gov/xlibrary/assets/statistics/publications/lpr_fr_2011.pdf. See also: Office of Immigration Statistics (2013). "U.S. Legal Permanent Residents: 2012." Available at: http://www.dhs.gov/sites/default/files/publications/ois_lpr_fr_2012_2.pdf.

[20] The study team took a simple regression that measured the relationship between immediate relative immigration and all other types of immigration between 2003 and 2012. The result was taken as the number of immediate relatives that each immigrant sponsors. For underlying data see: Department of Homeland Security (2012). *Yearbook of Immigration Statistics 2012.* Legal Permanent Residents, Table 6. Available at: http://www.dhs.gov/yearbook-immigration-statistics-2012-legal-permanent-residents.

[21] For more information on these categories, see: Bipartisan Policy Center (2013). "Major Visa Categories Changed by the Border Security, Economic Opportunity, and Immigration Modernization Act (S.744)." Available at: http://bipartisanpolicy.org/library/research/major-visa-categories-changed-border-security-economic-opportunity-and-immigration.

[22] OASDI Board of Trustees (2013). "The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds." Available at: http://www.socialsecurity.gov/oact/tr/2013/tr2013.pdf.

[23] Jeffrey Passel & D'Vera Cohn (2009). "A Portrait of Unauthorized Immigrants in the United States." Washington, DC: Pew Research Center. Available at: http://www.pewhispanic.org/2009/04/14/a-portrait-of-unauthorized-immigrants-in-the-united-states/.

[24] U.S. Government Accountability Office (2011). "H-1B Visa Program: Reforms Are Needed to Minimize the Risks and Costs of Current Program. GAO-11-26. Available at: http://www.gao.gov/products/GAO-11-26. See also: Anthony P. Carnevale, Nicole Smith, & Michelle Melton. "STEM." Washington, DC: Georgetown Public Policy Institute. Available at: http://cew.georgetown.edu/stem/. See also: U.S. Census Bureau (2012). March 2012 Current Population Survey. PEARNVAL for non-citizen physicians and surgeons (29-1060). See also: Bureau of Labor Statistics (2013). "Occupational Employment and Wages—May 2012." Available at: http://www.bls.gov/news.release/pdf/ocwage.pdf. See also: U.S. Census Bureau, "Earnings in the past 12 months (in inflation-adjusted dollars)." 2011 American Community Survey 1-Year Estimates, Table ID S2001. Available at: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_S2001&prodType=table.

[25] The study team selected a value based on the most rigorous studies available. These had estimates ranging from 6 to 9 percent. See: Catalina Amuedo-Dorantes, Cynthia Bansak, and Steven Raphael (2007). "Gender Differences in the Labor Market: Impact of IRCA's Amnesty Provisions." *American Economic Review* 97(2): 412-16. See also: Francisco L. Rivera-Batiz. "Undocumented workers in the labor market: An analysis of the earnings of legal and illegal Mexican immigrants in the United States." *Journal of Population Economics* 12(1): 91-116. See also: Deborah Cobb-Clark & Sherrie A. Kossoudji (2000). "IRCA's impact on the Occupational Concentration and Mobility on Newly-Legalized Mexican Men." *Journal of Population Economics* 13(1): 81-98.

[26] Ibid.

[27] Shirley Smith, Roger Kramer, and Audrey Singer. (1996). "Characteristics and Labor Market Behavior of the Legalized Population Five Years Following Legalization." Washington, DC: Immigration Policy and Research Division, U.S. Department of Labor.