



Director  
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## **The Potential Economic Impacts from the Three Percent Surtax on Incomes over \$200,000**

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### **Executive summary:**

The Office of Policy and Management (OPM), in consultation with the Office of Tax Policy, has analyzed the potential economic impacts of the recent law passed by referendum creating a three percent surtax on incomes over \$200,000 for additional education funding. OPM staff looked at several different scenarios using the REMI PI+ modeling software maintained by the office.

The results of the analysis indicate that the new surtax, as written, will have a negative impact on Maine's economy, including reductions in employment, population, gross domestic product (GDP), and income relative to the baseline economic forecast.

OPM staff estimate that in the first year of the new policy:

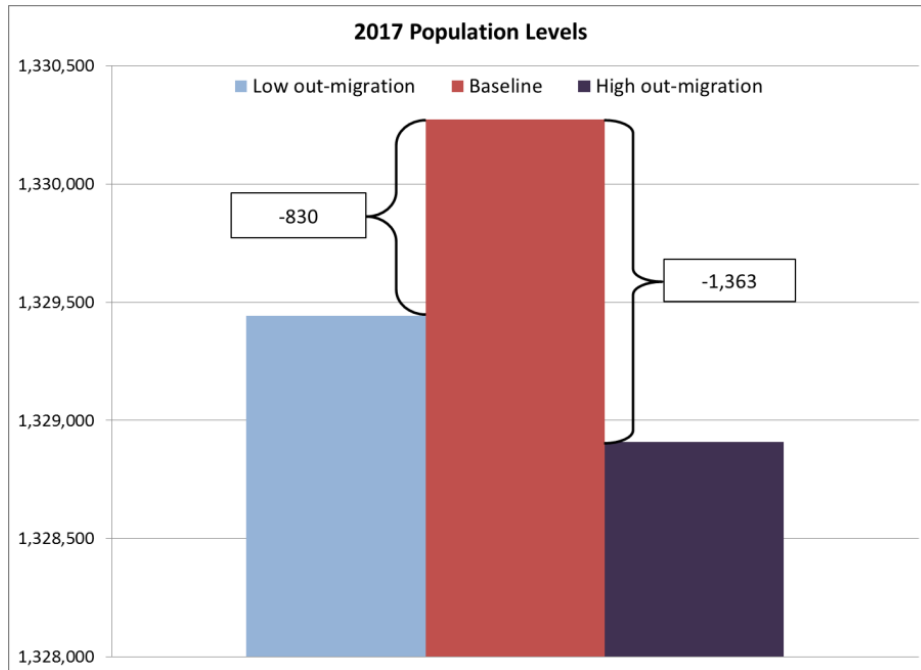
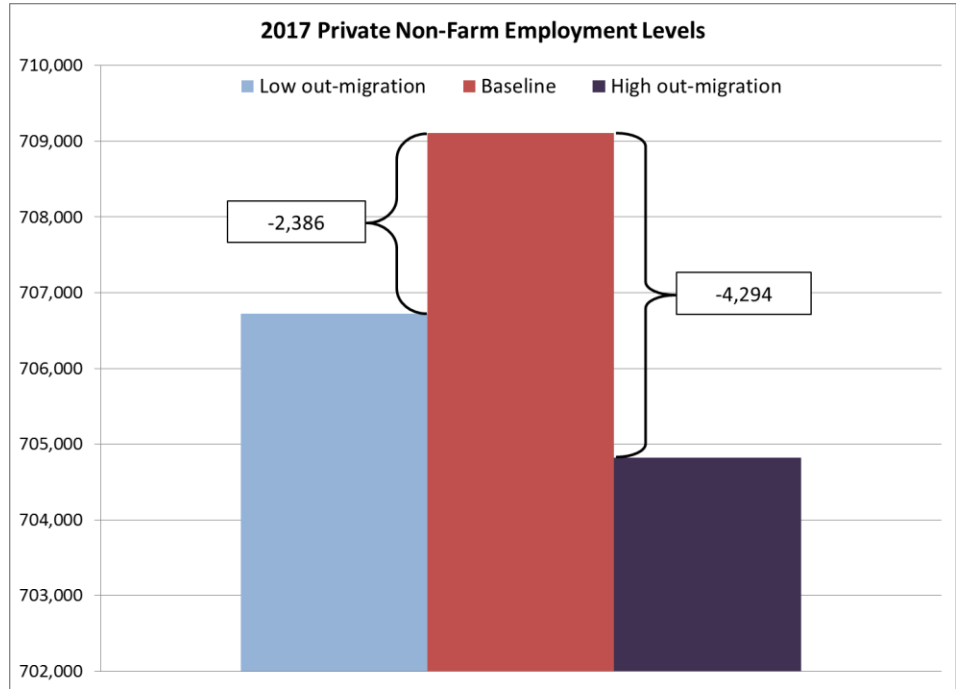
- Private sector employment will be negatively impacted by 2,400 - 4,300
- Real disposable incomes will be negatively impacted by \$400 - \$600 million
- Maine's population will be negatively impacted by 800 - 1,400
- GDP will be negatively impacted by \$40 - \$160 million

The analysis required identifying reasonable assumptions around personal tax and production cost increases as well as expenditure changes by local governments. OPM worked with the Office of Tax Policy to develop these assumptions. After reviewing multiple scenarios, OPM produced two that seemed to provide the most reasonable combination of assumptions. Each scenario was compared to a baseline (i.e. no policy change) scenario built into the modeling software. The baseline itself was modified to match the employment and population growth from the November 1, 2016, Consensus Economic Forecasting Commission report.

Both of these scenarios assume that some of the approximately 16,000 affected taxpayers (either individuals or families) make income changes – by sheltering a portion of their income – that will result in an 11 percent reduction of revenues received by the state. Additionally, both scenarios assume that all of the out-of-state taxpayer liability and 20 percent of the in-state taxpayer liability are borne by businesses and represent an increased production cost rather than an increase in personal taxes. The scenarios also assume that one-third of the tax increase would have been invested or spent out of state, reducing the effects on in-state consumption. On the expenditure side, both scenarios assume that 75 percent of the revenues are spent by local governments on K-12 education expenses and the remaining 25 percent are spent by local governments on other expenses. Where the two scenarios differ is in the assumption around the out-migration of the affected taxpayers. One scenario uses a low out-migration assumption (781 high income taxpayers) while the other uses a high out-migration assumption (1,255 high income taxpayers). These migration assumptions are used to determine the additional income lost because the out-migrants are high income taxpayers rather than average taxpayers.

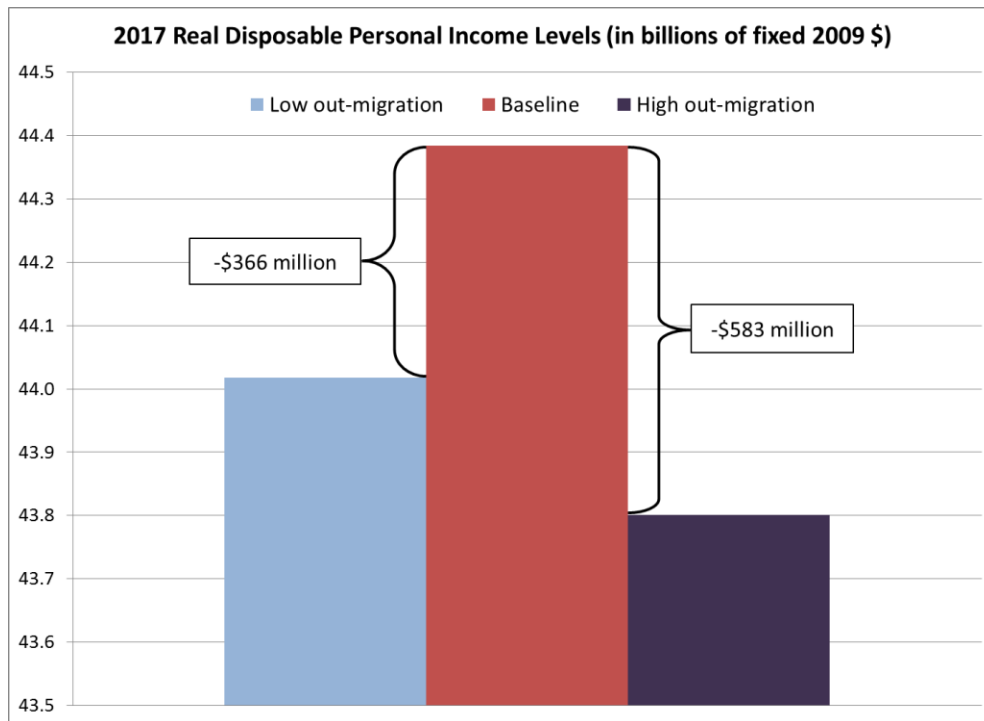
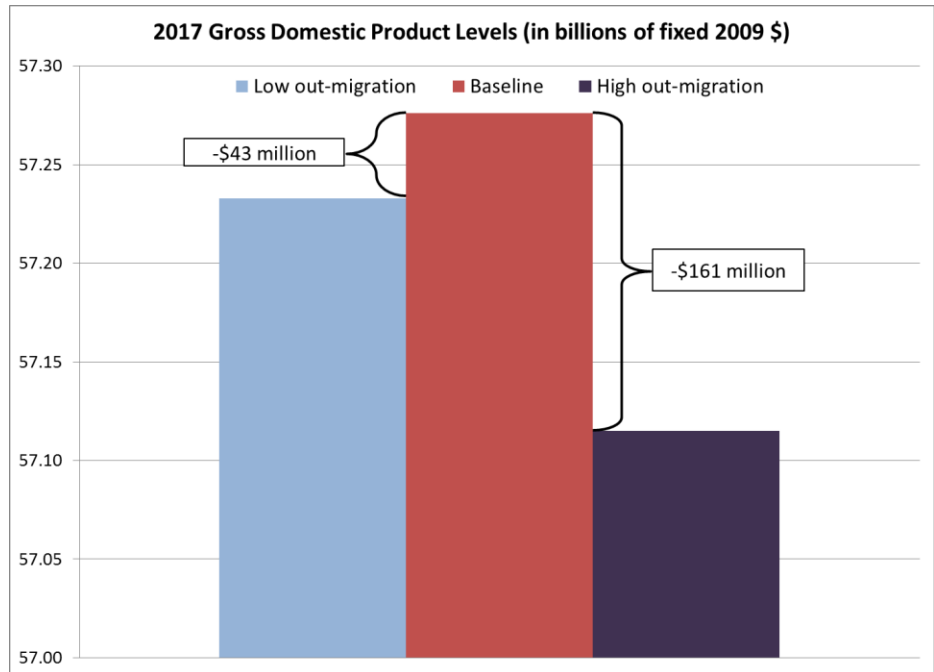
Both of the scenarios result in negative economic effects relative to the baseline forecast over the next few years. Note that these differences do not necessarily imply a year over year decline, although in many cases they do. The relative losses indicate that the economy is worse off than it would have been if the policy had not been enacted. Several key indicators are shown in the following charts, including employment, population, GDP, and income.

Private non-farm employment loss ranges from nearly 2,400 (0.3%) to nearly 4,300 (0.6%) compared to the 2017 baseline. Note that employment includes both full-time and part-time employment and so is higher than the figures typically reported by the Maine Department of Labor.



Population levels in 2017 range from 830 (0.1%) to 1,363 (0.1%) below baseline.

For this analysis, gross domestic product (GDP) is measured in billions of fixed 2009 dollars. The low out-migration scenario is \$43 million (0.1%) below the baseline in 2017 while the high out-migration scenario is \$161 million (0.3%) below baseline.



Disposable personal income is also measured in billions of fixed 2009 dollars. In 2017, the loss ranges from \$366 million (0.8%) to \$583 million (1.3%) below baseline.

## **Overview of the law:**

On November 8, 2016, Maine voters approved referendum Question 2, placing into law the Fund to Advance Public Kindergarten to Grade 12 Education. This law supplements the General Fund appropriation for general purpose aid to schools to reach the 55 percent target already in law. These funds may be used to pay for “direct support for student learning” that includes salary and benefit costs for public school teachers and specialists. The fund is paid for through a three percent surcharge imposed on the incomes of taxpayers in excess of \$200,000.

The Office of Policy and Management (OPM) was asked to analyze the economic impacts of this law. OPM used the REMI PI+ model as the analytical software package to conduct the economic impact analysis. OPM staff consulted with the Office of Tax Policy to gather data needed as inputs to the model.

## **Assumptions:**

Identifying reasonable assumptions is both the most important and the most challenging part of any economic impact analysis. OPM worked with the Office of Tax Policy as well as staff at REMI to determine what assumptions needed to be made.

The analysis began with an estimate from the Office of Tax Policy that the surtax would generate \$124 million in revenue from residents with an additional \$25 million from out-of-state taxpayers. From there, OPM and the Office of Tax Policy estimated that nearly all of the out-of-state taxpayers are business owners and that it would be reasonable for purposes of this analysis to assume that all of the out-of-state tax burden would be borne by businesses. Additionally, 20 percent of the in-state tax burden is assumed to be borne by businesses. OPM arrived at 20 percent by calculating the share of total adjusted gross income (AGI) for all returns above \$200,000 that was attributable to partnership/s-corp or business or profession net income.

The Office of Tax Policy also estimates that high-income taxpayers could reduce their taxable income in response to the surtax through various means, reducing the total revenues between 11 percent and 27 percent. An 11 percent offset would result in revenues of around \$110 million in-state and \$22 million out-of-state while a 27 percent offset would result in revenues of around \$90 million in-state and \$18 million out-of-state.

Since the model assumes that the impact is felt by the average taxpayer but the tax targets high-income taxpayers, a further adjustment is needed to account for the fact that most of the economic migration-driven employment loss will be high-income taxpayers. OPM, in consultation with the Office of Tax Policy, estimates that the difference between average income for the average taxpayer and for taxpayers impacted by the surtax is around \$410,000. This difference was applied to a model-generated estimate of the number of taxpayers moving out of the state due to the surtax. This was calculated by plugging into the REMI model the 2017 personal tax impact and using the resulting number of net economic migrants as the low out-migration scenario and the loss of residence adjusted employment as the high out-migration scenario. This results in an additional reduction in personal income of \$360-\$579 million without any offset, \$321-\$516 million with an 11 percent behavior offset, and \$263-\$423 with a 27 percent behavior offset.

On the expenditure side, the increased revenues could go towards some combination of reducing local property taxes, increasing local government K-12 education spending, or increasing other local government spending.

### **Baseline:**

There were two modifications made to the REMI PI+ standard regional control. The population forecast for 2017-2021 was replaced with the population forecast developed for the November 1, 2016, Consensus Economic Forecasting Commission meeting, based on the 2014-2034 population projections by the Office of Policy and Management. Similarly, the employment forecast for 2017-2021 was replaced with the employment growth forecast from the November 1, 2016, Consensus Economic Forecasting Commission report.

### **Inputs:**

There were seven different inputs used in the model.

- **Personal taxes:** this reflects the increase in income taxes paid by non-business residents. 2017 was the starting year and the total personal tax increase was adjusted for 2018-2021 using the November 1, 2016, Consensus Economic Forecasting Commission forecast of total personal income growth.
- **Production cost:** this reflects the increase in income taxes paid by non-residents and in-state businesses. The assumption is that all of the non-resident income taxes and 20 percent of the resident income taxes are paid by proprietors and thus represent an increased production cost to the respective businesses. The total amount was adjusted for 2018-2021 using the same personal income growth forecast as the personal taxes. The production cost was split across 61 different industries, excluding some industries for which the increase is likely not applicable (private households; membership associations and organizations; museums, historical sites, zoos, and parks; social assistance; and private educational services).
- **Consumption reallocation:** this reflects the marginal propensity to consume and assumes that one-third of income is invested or spent out of state and thus reduces the in-state impact.
- **Local government spending:** this reflects additional spending by the local government in all expenditure areas.
- **Government expenditures on K-12 education:** this reflects additional spending by the local government specifically on K-12 education expenditures.
- **Property tax:** this reflects reductions in property taxes due to additional local revenues from the income tax increase (both resident and non-resident portions).
- **Personal income:** this reflects the additional loss in personal income resulting from the fact that the tax targets taxpayers with income of \$200,000 or more.

### **Scenarios:**

Ten different scenarios were initially run to gauge the range of impacts from the three percent surtax, with two additional scenarios run after assessing what the most likely responses to the surtax and increased revenues would be.

The twelve scenarios and the adjustments that were made to each variable are outlined in the following table.

Adjustments to Variables for 2017												
All amounts in millions	Scenarios											
	1	2	3	4	5	6	7	8	9	10	11	12
Personal taxes	\$99	\$99	\$99	\$99	\$99	\$72	\$72	\$72	\$72	\$72	\$88	\$88
Production cost	\$50	\$50	\$50	\$50	\$50	\$36	\$36	\$36	\$36	\$36	\$44	\$44
Property taxes	-\$149	-\$74	-\$74			-\$109	-\$54	-\$54				
Local government spending		\$74		\$149			\$54		\$109		\$33	\$33
K-12 education spending			\$74		\$149			\$54		\$109	\$99	\$99
Consumption reallocation	\$49	\$49	\$49	\$49	\$49	\$36	\$36	\$36	\$36	\$36	\$44	\$44
Additional income reduction	-\$360	-\$360	-\$360	-\$360	-\$360	-\$263	-\$263	-\$263	-\$263	-\$263	-\$321	-\$516

Personal taxes were increased by the full \$99 million for scenarios 1-5, \$72 million for the scenarios with a 27 percent offset (6-10), or \$88 million for the scenarios with an 11 percent offset (11-12).

Production costs were increased by the full \$50 million for scenarios 1-5, \$36 million for the scenarios with a 27 percent offset (6-10), or \$44 million for the scenarios with an 11 percent offset (11-12).

Property taxes were reduced by 100 percent of the personal taxes plus productions costs for scenarios 1 and 6; by 50 percent of the personal taxes plus production costs for scenarios 2, 3, 7, and 8; and left unadjusted for scenarios 4, 5, and 9-12.

Local government spending was increased by 100 percent of the personal taxes plus production costs amount for scenarios 4 and 9, increased by 50 percent of the personal taxes plus production costs amount for scenarios 2 and 7, increased by 25 percent of the personal taxes plus production costs amount for scenarios 11 and 12, and left unadjusted for scenarios 1, 3, 5, 6, 8, and 10.

K-12 education spending was increased by 100 percent of the personal taxes plus production costs amount for scenarios 5 and 10, increased by 50 percent of the personal taxes plus production costs amount for scenarios 3 and 8, increased by 75 percent of the personal taxes plus production costs amount for scenarios 11 and 12, and left unadjusted for scenarios 1, 2, 4, 6, 7, and 9.

The consumption reallocation was set at 33 percent of the personal taxes plus production costs amount for all scenarios.

The additional income reduction was calculated at \$360 million for the scenarios without an offset (1-5) using the low out-migration assumption, \$263 million for the scenarios with a 27 percent offset (6-10) using the low out-migration assumption, \$321 million for scenario 11 with an 11 percent offset and a low out-migration assumption, and \$516 million for scenario 12 with an 11 percent offset and a high out-migration assumption.

## **Results:**

### Scenario 1:

Scenario 1 assumes that there is no behavioral offset with low out-migration and all of the additional tax revenue goes to reduce property taxes. Residence adjusted employment is 3,842 below the baseline in 2017 (-0.46% compared to baseline); population is 1,250 below the baseline (-0.09%); and the labor force is 1,208 below the baseline (-0.18%). GDP is \$220 million below the baseline in 2017 (-0.38%) and real disposable personal income is \$439 million below the baseline (-0.99%).

### Scenario 2:

Scenario 2 assumes that there is no behavioral offset with low out-migration and the additional tax revenue is split evenly between a reduction in property taxes and an increase in local government spending. Residence adjusted employment is 2,388 below the baseline in 2017 (-0.29% compared to baseline); population is 1,087 below the baseline (-0.08%); and the labor force is 1,044 below the baseline (-0.15%). GDP is \$137 million below the baseline in 2017 (-0.24%) and real disposable personal income is \$422 million below the baseline (-0.95%).

### Scenario 3:

Scenario 3 assumes that there is no behavioral offset with low out-migration and the additional tax revenue is split evenly between a reduction in property taxes and an increase in local K-12 education spending. Residence adjusted employment is 2,411 below the baseline in 2017 (-0.29% compared to baseline); population is 1,089 below the baseline (-0.08%); and the labor force is 1,047 below the baseline (-0.15%). GDP is \$133 million below the baseline in 2017 (-0.23%) and real disposable personal income is \$425 million below the baseline (-0.96%).

### Scenario 4:

Scenario 4 assumes that there is no behavioral offset with low out-migration and all of the additional tax revenue goes to increased local government spending. Residence adjusted employment is 1,037 below the baseline in 2017 (-0.13% compared to baseline); population is 1,027 below the baseline (-0.08%); and the labor force is 974 below the baseline (-0.14%). GDP is \$59 million below the baseline in 2017 (-0.10%) and real disposable personal income is \$422 million below the baseline (-0.95%).

### Scenario 5:

Scenario 5 assumes that there is no behavioral offset with low out-migration and all of the additional tax revenue goes to increased local K-12 education spending. Residence adjusted employment is 988 below the baseline in 2017 (-0.12% compared to baseline); population is 932 below the baseline (-0.07%); and the labor force is 888 below the baseline (-0.13%). GDP is \$46 million below the baseline in 2017 (-0.08%) and real disposable personal income is \$411 million (-0.93%) below the baseline.

### Scenario 6:

Scenario 6 assumes a 27% behavioral offset with low out-migration and that all of the additional tax revenue goes to reduce property taxes. Residence adjusted employment is 2,803 below the baseline in 2017 (-0.34% compared to baseline); population is 911 below the baseline (-0.07%); and the labor force is 880 below the baseline (-0.13%). GDP is \$161 million below the baseline in 2017 (-0.28%) and real disposable personal income is \$320 million below the baseline (-0.72%).

#### Scenario 7:

Scenario 7 assumes a 27% behavioral offset with low out-migration and that the additional tax revenue is split evenly between a reduction in property taxes and an increase in local government spending. Residence adjusted employment is 1,742 below the baseline in 2017 (-0.21% compared to baseline); population is 792 below the baseline (-0.06%); and the labor force is 761 (-0.11%) below the baseline. GDP is \$100 million below the baseline in 2017 (-0.17%) and real disposable personal income is \$308 million below the baseline (-0.69%).

#### Scenario 8:

Scenario 8 assumes a 27% behavioral offset with low out-migration and that the additional tax revenue is split evenly between a reduction in property taxes and an increase in local K-12 education spending. Residence adjusted employment is 1,759 below the baseline in 2017 (-0.21% compared to baseline); population is 794 below the baseline (-0.06%); and the labor force is 763 (-0.11%) below the baseline. GDP is \$97 million below the baseline in 2017 (-0.17%) and real disposable personal income is \$310 million below the baseline (-0.70%).

#### Scenario 9:

Scenario 9 assumes a 27% behavioral offset with low out-migration and that all of the additional tax revenue goes to increased local government spending. Residence adjusted employment is 681 below the baseline in 2017 (-0.08% compared to baseline); population is 674 below the baseline (-0.05%); and the labor force is 642 below the baseline (-0.09%). GDP is \$39 million (-0.07%) below the baseline in 2017 and real disposable personal income is \$296 million below the baseline (-0.67%).

#### Scenario 10:

Scenario 10 assumes a 27% behavioral offset with low out-migration and that all of the additional tax revenue goes to increased local K-12 education spending. Residence adjusted employment is 721 below the baseline in 2017 (-0.09% compared to baseline); population is 679 below the baseline (-0.05%); and the labor force is 647 below the baseline (-0.09%). GDP is \$34 million below the baseline in 2017 (-0.06%) and real disposable personal income is \$300 million (-0.68%) below the baseline.

#### Scenario 11:

Scenario 11 assumes an 11 percent behavioral offset with low out-migration and a split with 25 percent of the additional tax revenue going to increased local government spending and 75 percent of the additional tax revenue going to increased local K-12 education spending. Residence adjusted employment is 875 below the baseline in 2017 (-0.11% compared to baseline); population is 830 below the baseline (-0.06%); and the labor force is 791 (-0.12%) below the baseline. GDP is \$43 million below the baseline in 2017 (-0.08%) and real disposable personal income is \$365 million (-0.82%) below the baseline.

#### Scenario 12:

Scenario 12 assumes an 11 percent behavioral offset with high out-migration and a split with 25 percent of the additional tax revenue going to increased local government spending and 75 percent of the additional tax revenue going to increased local K-12 education spending. Residence adjusted employment is 2,839 below the baseline in 2017 (-0.34% compared to baseline); population is 1,363 below the baseline (-0.10%); and the labor force is 1,322 (-0.19%) below the baseline. GDP is \$161 million below the baseline in 2017 (-0.28%) and real disposable personal income is \$583 million below the baseline (-1.31%).



**Comparisons:**

All twelve scenarios have residence adjusted employment levels below the baseline in 2017. By 2021, only five scenarios have residence adjusted employment levels above the baseline scenario – the four scenarios where all of the additional revenue goes towards additional spending (4, 5, 9, and 10) along with the low outmigration scenario (11). The additional spending by local governments, whether for K-12 education or other uses, results in jobs added to the economy. Some may be local government jobs, while others may be private sector jobs resulting from purchasing made by the local government (for example, construction companies may hire more workers if some of the spending goes towards building new school facilities).

Residence Adjusted Employment levels					
Scenario	Year				
	2017	2018	2019	2020	2021
baseline	829,343	831,030	831,353	831,858	832,043
1	825,501	827,420	828,206	829,432	830,289
2	826,955	828,841	829,603	830,814	831,670
3	826,932	828,825	829,577	830,770	831,607
4	828,306	830,180	830,948	832,175	833,058
5	828,355	830,219	830,936	832,097	832,913
6	826,540	828,395	829,059	830,090	830,763
7	827,601	829,432	830,079	831,098	831,770
8	827,584	829,420	830,059	831,066	831,725
9	828,662	830,470	831,099	832,107	832,779
10	828,622	830,438	831,051	832,034	832,678
11	828,468	830,310	830,987	832,086	832,832
12	826,504	826,407	826,053	826,702	827,494

Private Non-Farm Employment levels					
Scenario	Year				
	2017	2018	2019	2020	2021
baseline	709,113	711,037	711,993	712,973	713,744
1	705,416	707,615	709,067	710,773	712,204
2	705,838	707,986	709,396	711,068	712,474
3	705,962	708,118	709,525	711,191	712,588
4	706,174	708,294	709,694	711,366	712,775
5	706,500	708,611	709,973	711,597	712,962
6	706,415	708,539	709,860	711,369	712,619
7	706,723	708,809	710,099	711,585	712,817
8	706,813	708,906	710,194	711,674	712,900
9	707,031	709,080	710,340	711,801	713,015
10	707,206	709,265	710,520	711,970	713,172
11	706,727	708,813	710,131	711,690	712,987
12	704,819	705,045	705,407	706,579	707,964

Private non-farm employment levels for all twelve scenarios are lower than the baseline in 2017 and stay below the baseline through 2021. This indicates that the additional employment boost that comes from the local government and K-12 spending is focused in the public sector.

Population levels					
Scenario	Year				
	2017	2018	2019	2020	2021
baseline	1,330,273	1,330,558	1,332,944	1,331,128	1,331,413
1	1,329,022	1,328,591	1,330,459	1,328,360	1,328,516
2	1,329,185	1,328,868	1,330,829	1,328,804	1,329,024
3	1,329,183	1,328,866	1,330,826	1,328,796	1,329,009
4	1,329,246	1,328,970	1,330,970	1,328,981	1,329,235
5	1,329,341	1,329,136	1,331,184	1,329,222	1,329,489
6	1,329,362	1,329,124	1,331,133	1,329,110	1,329,301
7	1,329,480	1,329,326	1,331,403	1,329,434	1,329,672
8	1,329,479	1,329,325	1,331,400	1,329,429	1,329,660
9	1,329,599	1,329,527	1,331,672	1,329,758	1,330,042
10	1,329,593	1,329,521	1,331,661	1,329,739	1,330,010
11	1,329,443	1,329,290	1,331,375	1,329,431	1,329,700
12	1,328,910	1,327,918	1,329,132	1,326,383	1,325,981

Population levels also remain below the baseline in all twelve scenarios throughout the 2017-2021 period.

In 2017, all of the scenarios have gross domestic product (GDP) levels below the baseline. Similar to residence adjusted employment, five scenarios have GDP levels above the baseline by 2021 – the same four scenarios with all of the additional revenue going towards new spending (4, 5, 9, and 10) plus the low out-migration scenario (11).

GDP levels (millions of fixed (2009) dollars)					
Scenario	Year				
	2017	2018	2019	2020	2021
baseline	57,276	58,212	59,186	60,101	60,993
1	57,056	58,004	59,004	59,964	60,897
2	57,139	58,085	59,083	60,041	60,974
3	57,143	58,090	59,087	60,045	60,976
4	57,217	58,162	59,161	60,120	61,054
5	57,230	58,174	59,170	60,125	61,055
6	57,116	58,061	59,053	60,001	60,923
7	57,176	58,119	59,111	60,058	60,979
8	57,179	58,123	59,114	60,060	60,981
9	57,237	58,178	59,169	60,114	61,035
10	57,242	58,185	59,174	60,119	61,038
11	57,233	58,176	59,169	60,121	61,046
12	57,115	57,939	58,864	59,783	60,706

Total Personal Income levels					
Scenario	Year				
	2017	2018	2019	2020	2021
baseline	59,936	62,426	65,189	67,703	70,313
1	59,416	61,957	64,762	67,339	70,005
2	59,490	62,038	64,847	67,430	70,101
3	59,486	62,034	64,843	67,424	70,094
4	59,560	62,113	64,929	67,518	70,196
5	59,557	62,110	64,923	67,509	70,183
6	59,557	62,084	64,878	67,438	70,088
7	59,611	62,142	64,940	67,504	70,158
8	59,608	62,140	64,937	67,500	70,153
9	59,665	62,201	65,002	67,570	70,228
10	59,659	62,195	64,996	67,562	70,218
11	59,600	62,146	64,954	67,533	70,199
12	59,324	61,599	64,247	66,721	69,334

Total personal income in the twelve scenarios stays below the baseline from 2017-2021, as does real disposable personal income (following chart). Despite some scenarios seeing increased employment and GDP from the additional local government and K-12 spending, the gains aren't enough to offset the loss of personal income from high-income taxpayers moving out of state.

Real Disposable Personal Income levels					
Scenario	Year				
	2017	2018	2019	2020	2021
baseline	44,384	45,282	46,219	46,880	47,551
1	43,945	44,906	45,884	46,599	47,314
2	43,961	44,922	45,901	46,618	47,332
3	43,959	44,920	45,899	46,614	47,328
4	43,962	44,924	45,903	46,621	47,337
5	43,972	44,934	45,913	46,629	47,343
6	44,064	45,007	45,975	46,675	47,378
7	44,075	45,019	45,987	46,689	47,391
8	44,074	45,018	45,985	46,686	47,388
9	44,087	45,032	46,000	46,702	47,405
10	44,083	45,028	45,996	46,697	47,399
11	44,018	44,973	45,947	46,658	47,367
12	43,801	44,556	45,427	46,079	46,766