Analysis of the Fiscal Impacts Associated with Exempting Federal Military Retiree's Pensions from the Arkansas State Personal Income Tax

Gregory L. Hamilton, Ph.D.
Senior Research Economist
Research Group
glhamilton@ualr.edu
Work: 501-569-8571
Cell: 501-454-0640

Institute for Economic Advancement
University of Arkansas at Little Rock
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Abstract

There are fiscal consequences when a state lowers or exempts military retirees' federal retirement pensions (payments) from state personal income taxes. Tax exemptions also affect the locational decision of military retirees. For a military retiree, federal taxes remain the same wherever they locate, but what the retiree owes in state taxes is effected by their decision to stay put or to migrate. A state that provides preferential tax treatment to military retirees becomes a more attractive place for retirees wanting to reduce their tax burden. Attracting military retirees is also appealing to a state. Military retirees bring a permanent source of income with them and they are usually older. They require less state and local government services because their children are likely older and they have their own medical insurance provider. In addition they are skilled workers with many transferable skills and often are seeking a second career. By attracting military retirees, a state gains in terms of workforce development and an external source of income. These gains may be large enough to offset the negative fiscal effect associated with a preferential tax treatment and lost tax revenues. Given a favorable magnitude, an influx of military retirees as a consequence of a preferential tax treatment may improve the overall state budgetary position in the long term.

Will an income tax policy that exempts military retirees' pension income from the state income tax be beneficial to the state in the long run? To answer this question the study simulated the fiscal impacts of this tax policy using a REMI model of Arkansas and then cross checked the analysis using a fiscal impact model derived from an Implan model of Arkansas. Although the magnitudes of the findings differed, both approaches were able to identify benefits and costs flows that demonstrated a positive impact on the state budget from the income tax exemption and induce migration of military retirees within the time frame of the study. The primary reason for the differences was the underlying assumptions of modeling techniques employed for several key economic and demographic variables. These key variables included the appropriate effective income tax rate, the military retirees' levels of migration, the spouse and retirees' labor force participation characteristics, and the post retirement earnings of the military retirees and their spouses

The REMI analysis was dynamic focusing on migration of military retirees and their spouses. Their earnings where based on state average earnings. The simulation focused on identifying the time frames when the fiscal benefits of military retirees (taxes paid) exceeded the costs of the income tax exemption for different migration levels and effective income tax rates. For example, a simulation found that at an annual level of migration of 250 retired military service personnel and 205 spouses, at a 4.4% effective income tax rate the state would breakeven in terms of the fiscal effects in the 12^{th} year after the tax exemption implementation. For this particular scenario, the analysis found that it was necessary for the number of military retirees to increase by 13% over the 12 years period after the exemption.

The Implan modeling technique focused on the potential earnings of the military retirees and at different levels of migration and effective income tax rates. Earnings estimates were based on the educational attainment levels of the military retiree and the average state wage for the spouse. Their combined annual family income was estimated at approximately $90,000. At this level of family income and an effective income tax rate of 2.57%, for a migration level of 182 military retirees and their spouses the tax policy had a beneficial effect on the state's budget in the 7^{th} year after the tax exemption implementation. The simulation found that in case of family purchase power the number of military retirees needed to increase by 6.0%.

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There are fiscal consequences when a state lowers or exempts military retirees' federal retirement pensions (payments) from state personal income taxes. Tax exemptions also affect the locational decision of military retirees. For a military retiree, federal taxes remain the same wherever they locate, but what the retiree owes in state taxes is effected by their decision to stay put or to migrate. A state that provides preferential tax treatment to military retirees becomes a more attractive place for retirees wanting to reduce their tax burden. Attracting military retirees is also appealing to a state. Military retirees bring a permanent source of income with them and they are usually older. They require less state and local government services because their children are likely older and they have their own medical insurance provider. In addition they are skilled workers with many transferable skills and often are seeking a second career. By attracting military retirees, a state gains in terms of workforce development and an external source of income. These gains may be large enough to offset the negative fiscal effect associated with a preferential tax treatment and lost tax revenues. Given a favorable magnitude, an influx of military retirees as a consequence of a preferential tax treatment may improve the overall state budgetary position in the long term.

This report summarizes the findings from a simulation and analysis of the fiscal budgetary effects of a tax policy that exempts military retirees' pensions from Arkansas' state income tax. The simulation used a REMI model of the Arkansas economy that provided realistic year-by-year estimates of the total regional effects of this tax policy change. Simulation using the REMI of Arkansas generated economic data to estimate major budgetary impacts associated with exempting military retirees' pensions from the state income tax, and the likely economic and budgetary consequences of the migration of military retirees and their spouses to Arkansas.

The study analyzed the costs and benefits of the tax policy that exempts retired military service personnel (RMSP) from the state's personal income tax. The cost of the policy is foregone tax revenues that could have been paid to the state by the military retirees. As a consequence of the reduction in state tax revenues, a shortfall is created in the state budget that is assumed to be offset by reduction in state spending across the spectrum of state programs. The economic effects of these tax and expenditure changes on the state economy are partially offset by the additional disposable income received by RMSP. As military retirees spend this additional income additional tax revenues are generated from the transactions compensating in part for initial loss of income tax revenues. The overall net change in state tax revenues is a measure of the tax impact of the policy.

The benefits of this tax policy come from the additional economic activity of new RMSP residents attracted to the state. The implementation of this tax policy will cause the state to become relatively more attractive to RMSP increasing the likelihood that they will relocate to Arkansas. RMSP relocation to Arkansas benefit the state. Military retirees bring a new stable source of funding from outside the state to support economic activity within the state. In addition, there is a workforce development potential associated with the occupational skills and experience levels of the RMSP and their spouses. The spending associated with the new RMSP residents and their families creates new economic activity in the

state. With this new economic activity, tax revenues will be generated as well as additional government expenses associated with provision of government services.

This study's fundamental research question addressed whether the new tax revenues created from the activities related to military retirees migrating to Arkansas are sufficient to compensate for the foregone tax revenues from exempting current military retirees and additional government spending associated with the new residents. In other words, whether the benefits of the program are sufficient to offset the cost of the program over the long run. In order to answer this question, the study identifies the benefits, costs, and their timing so that the fiscal impacts of exempting military retirees from Arkansas state income tax on the state budget can be assessed.

This report proceeds by first reviewing the relevant economic and demographic characteristic of RMSP living in the Arkansas and the surrounding states. The next section addresses the estimation of the foregone tax revenues that could be expected with the phase in of this policy. The third section of the report discusses how the REMI model of Arkansas was used to simulate the economic effects implementing the tax and the expected fiscal effects of the policy. The fourth section of the report addresses the benefits of the policy. This section discusses the estimation of RMSP and spousal incomes. Simulation findings of hypothetical migration levels are analyzed and as well as their fiscal impact simulations. The final section of the paper cross checks the findings using an Implan model of Arkansas to examine the timing of the fiscal impacts associated with the purchasing power of the retirees' family income who relocate to Arkansas.

Regional Comparisons

Table 1 shows selected state tax exemptions for Veterans. Arkansas is among the 17 states that currently do not provide some specific type of income tax relief to RMSPs.[1] From a regional perspective, the states adjacent to Arkansas provide an income tax relief exemption for their RMSP, or as in the case of Texas and Tennessee, lack a state income tax. In terms of property exemption, Arkansas is one of the 22 states that has a limited/conditional property exemption for all veterans, and is among the 20 states providing this exception to disable veterans.

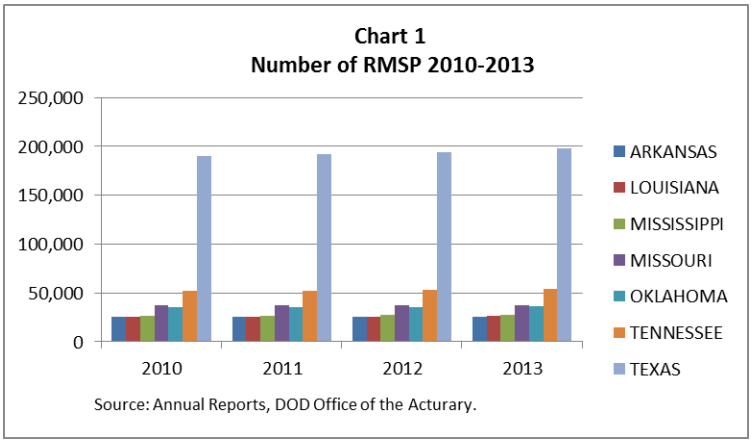
Chart 1 and Chart 2 compare the populations of RMSP in the states contingent to Arkansas. The Department of Defense (DOD) Office of the Actuary produces an annual statistical report focusing on the military retirement system.[2] Data for Chart 1 and Chart 2 were taken from these reports to compare the relative sizes of the RMSP population in the contingent states to Arkansas. Chart 1 shows the count of RMSP residents by state. Texas' RMSP population dominates the other states populations being almost as large as their combined total. As to the state with the smallest RMSP population, Arkansas and Louisiana exchanged this position in 2012 with Arkansas now being the smaller of the two. Chart 2 shows the annual growth rates in the number of RMSP for the 2011-2013 period. Texas and Tennessee stand out as having the fastest growing RMSP populations. Arkansas' RMSP annual growth rate declined over this period along with Mississippi. Overall, the region's RMSP population grew at an average annual rate of 1.1% and at a cumulative rate over the 2010-2013 period of 3.3%. In Arkansas by contrast, the RMSP population grew by 0.3% during the 2010-2013 period and at an average annual rate of .1%.

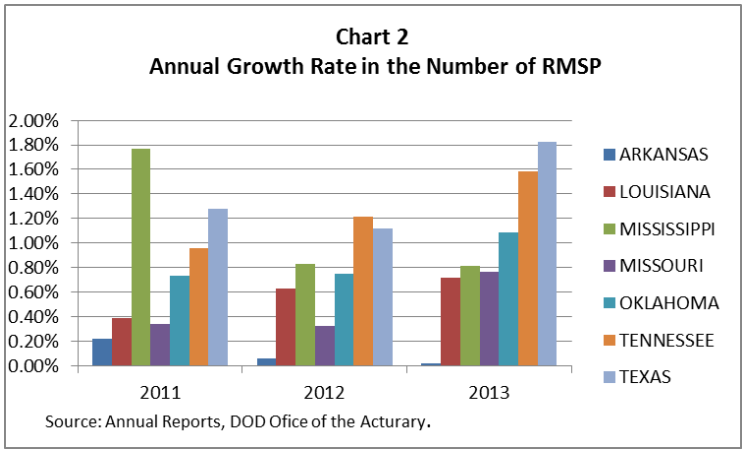
[1] The income exemption varies across states. Some states allow a specific amount to be exempt, a percentage, or the full amount of retirement pay. (State Report Card for Families, Veterans, and Retirees. Military Officers Association of America, November 2014). Arkansas allows a $6,000 deduction for qualified employment related pension plans including the federal RMSP pensions.

[2] DOD, Office of the Actuary, Statistical Report on the Military Retirement System Fiscal Year (Years 2010 to 2014).

Table 1: Selected State Tax Exemption Status for Veterans*** 2014			
State	Exemption	Veterans	Disabled Veterans
ALABAMA	Yes	limited/conditional	Yes
ALASKA	Yes	limited/conditional	Yes
ARIZONA	No	No	No
ARKANSAS	No	limited/conditional	limited/conditional
CALIFORNIA	No	No	limited/conditional
COLORADO	limited/conditional	limited/conditional	limited/conditional
CONNECTICUT	limited/conditional	limited/conditional	Yes
DELAWARE	No	limited/conditional	No
FLORIDA	Yes	No	Yes
GEORGIA	limited/conditional	No	Yes
HAWAII	Yes	limited/conditional	Yes
IDAHO	limited/conditional	No	No
ILLINOIS	Yes	limited/conditional	Yes
INDIANA	No	No	limited/conditional
IOWA	Yes	Yes	Yes
KANSAS	Yes	No	No
KENTUCKY	limited/conditional	limited/conditional	limited/conditional
LOUISIANA	Yes	limited/conditional	limited/conditional
MAINE	No	limited/conditional	Yes
MARYLAND	No	No	Yes
MASSACHUSETTS	Yes	limited/conditional	Yes
MICHIGAN	Yes	limited/conditional	Yes
MINNESOTA	No	No	Yes
MISSISSIPPI	Yes	limited/conditional	limited/conditional
MISSOURI	Yes	No	limited/conditional
MONTANA	No	limited/conditional	limited/conditional
NEBRASKA	No	limited/conditional	Yes
NEVADA	Yes	Yes	Yes
NEW HAMPSHIRE	Yes	Yes	Yes
NEW JERSEY	Yes	Yes	Yes
NEW MEXICO	No	Yes	Yes
NEW YORK	Yes	Yes	limited/conditional
NORTH CAROLINA	limited/conditional	No	limited/conditional
NORTH DAKOTA	No	No	Yes
OHIO	Yes	No	limited/conditional
OKLAHOMA	Yes	No	Yes
OREGON	limited/conditional	No	limited/conditional
PENNSYLVANIA	Yes	No	limited/conditional
RHODE ISLAND	No	Yes	Yes
SOUTH CAROLINA	No	limited/conditional	limited/conditional
SOUTH DAKOTA	Yes	limited/conditional	Yes
TENNESSEE	Yes	No	limited/conditional
TEXAS	Yes	limited/conditional	Yes
UTAH	No	limited/conditional	Yes
VERMONT	No	No	limited/conditional
VIRGINIA	No	limited/conditional	Yes
WASHINGTON	Yes	No	No
WEST VIRGINIA	limited/conditional	limited/conditional	limited/conditional
WISCONSIN	Yes	No	limited/conditional
WYOMING	Yes	Yes	limited/conditional

***Source: State Report Card. Military Officers Association of America, November 2014. Amiable online January 15, 2015 at http://www.moaa.org/statereport/





The Annual National Pool of Newly Retired Military Retirees and Educational Attainment

The benefits of this income tax policy are primarily determined by the number of military retirees who relocate to Arkansas, their success at starting second careers, and their annual family income. The Annual DOD Statistical Report tracks the number of retirees who retired annually from the active military. The last five years of data are reproduced in Table 2. The annual pool of retiring military is more than 50% larger than the population of retirees in Arkansas. As will be demonstrated by the simulations, the annual pool of new retirees is more than adequate to supply Arkansas with a sufficient number of new retirees to offset the costs associated with the income tax exemption provided they have sufficient family incomes.

Table 2: Annual Number of Military Retirees (Excluding Reserves)					
# Retired that year	2009	2010	2011	2012	2013
Non Disability (DOD Paid)	31,431	29,802	34,345	32,564	30,847
Disabled Retirees	6700	6478	6548	6909	10731
Total	38,131	36,280	40,893	39,473	41,578
DOD Office of the Actuary, Statistical Report on Military Retirement System, various years					

Table 3 shows an estimate of the educational attainment levels of military retirees. The basis of the estimates is the education attainment level of active duty officers and enlisted personnel serving in the military in 2013. The education attainment percentages are multiplied by the selected number of retirees by rank to arrive at the estimated educational attainment for the military retirees.

Comparatively, military officers have obtained higher educational levels than the 25 year and over population of Arkansas. For enlisted personnel the opposite is true. The educational level of Arkansas 25 year and over population exceeds that of enlisted active duty personnel. This finding suggests that the effect on Arkansas educational attainment level from military retiree's relocation to Arkansas will depend on the relative mix of officers and enlisted.

Table 3: ED Attanment for Active Duty 2013							
	Activie Duty Percentage		# Military Retirees				Arkansas
ED Att Highest Degree	Officer	Enlisted	Officer (O3-O10)	Enlisted (E4-E9)	Total	%	%
N	238,864	1,131,465	7,359	22,279	29,638		1,936,554
<HS	0.0%	0.3%	-	67	67	0%	16.30%
HS	7.7%	92.5%	567	20,608	21,175	72%	35.10%
AS+Some College	42.8%	5.7%	3,150	1,270	4,420	15%	28.50%
BA_BS	40.3%	0.8%	2,966	178	3,144	11%	13.30%
Adv Deg	9.1%	0.6%	670	134	803	3%	6.80%
Total	99.9%	99.9%	7,352	22,257	29,608	100%	100%
Sources: 2013 Demogrphic Profile of the Military Commuinity,							
Office of the Deputy Assistant Secretary Defense, DOD, 2013. p39.							
DOD Office of the Actuary, Statistical Report on Miltitary Retirement System, 2014.							
U.S. Census Bureau, American Fact Finder, Educational Attainment 2009-2013 ACS.							

Data

The primary data source for this study was federal payments to RMSP available from the Annual Statistic Reports on the Retirement System.[3] These reports provide counts on the number of RMSP in Arkansas and the Department of Defense (DOD) monthly payments to RMSP by two age groups. Table 4 summarizes this data for the 2009-2013 period. As shown in the data the number of RMSP in Arkansas has not varied significantly over the 2009-2013 period. The RMSP's percentage breakdowns of retirees paid by the DOD have also remained relatively constant. The split between the number of RMSP 65+ or under 65 favors the older group, and this split has increased over the 2009- 2013 period. This split reached approximately a 60%-40% proportion in 2013. This is likely due to two interrelated factors.

[3] Ibid.

Table 4: Numuber of Retired Military Personnel					
Year	2009	2010	2011	2012	2013
Total Number of Retired	25,745	25,430	25,770	25,785	25,790
# Retirees Under 65	12,331	11,979	12,193	11,841	11,525
# Retirees 65+	13,414	13,451	13,577	13,944	14,265
# Retiree Paid by DOD	24,164	24,351	24,157	24,120	24,095
# Retirees Under 65	11,296	11,440	11,140	10,751	10,428
# Retirees 65+	12,868	12,911	13,017	13,369	13,667
Percentage					
# Retirees Under 65	47.9%	47.1%	47.3%	45.9%	44.7%
# Retirees 65+	52.1%	52.9%	52.7%	54.1%	55.3%
# Retiree Paid by DOD	93.9%	95.8%	93.7%	93.5%	93.4%
# Retirees Under 65	43.9%	45.0%	43.2%	41.7%	40.4%
# Retirees 65+	56.1%	55.0%	56.8%	58.3%	59.6%
DOD Payment to Retirees (Military Pension)					
Year	2009	2010	2011	2012	2013
# Retiree Paid by DOD	24,164	24,351	24,157	24,120	24,095
Monthly PMT (000)	$44,072	$49,033	$44,020	$45,392	$45,861
Monthly Pmt 65+ (000)	24,573	24,548	24,622	25,953	26,832
Annual Payment Per Retiree					
Paid by DOD	$21,886	$24,163	$21,867	$22,583	$22,840
65+ Paid by DOD	$21,983	$21,900	$21,762	$22,335	$22,572
Sources: Statistical Report on the Retirement System, DOD Department of the Actuary, Years					

There are an increasing number of Vietnam Era military retirees reaching 65 in Arkansas that ages the population. While the number of military retirees in Arkansas less than 65 years of age has declined due to some leaving the state and others not migrating to the state.

The aging of the RMSP is a significant factor in the determination of the cost of the tax exemption. At the time this tax policy becomes effective, the federal share of RMSP's pension incomes will become exempt from state income tax and the associated foregone income tax revenue becomes an opportunity cost to the state of this policy. The magnitude of the cost depends on the RMSP population at the time the policy becomes effective. Over time this RMSP cohort would decline in line with the mortality rate of the cohort and as RMSP leave the state if any. Thus, the costs of this tax policy would decline over time as the amount of foregone income tax revenues declines in line with the declining numbers in this RMSP cohort. Eventually, the cost of this tax exemption policy in terms of foregone tax revenues vanishes as the RMSP cohort vanishes.[4]

[4] In both estimation and simulation, there was no account made for this declining cost associated with the foregone income tax revenues. Based on the current life tables provided by the Institute for Economic Advancement, life expectancy of an Arkansan who is currently in the 85+ cohort is 6.9 years or at an age of approximately 92. Most military retirees are over 40 years of age. If we assume these retirees reach the 85+ cohort and do not live past 92, which they probability will not, in 52 years there will be very few military retirees in

Estimation of Foregone Income Tax Revenues

The following accounting scheme was developed to estimate the foregone personal income tax revenues due to a tax exempt status for RMSP.

Procedure to Estimate Foregone Personnel Income Tax Revenues
Military Retiree Annual Income - Standard Deduction ($2,000) -Retiree Income Exemption ($6,000) = Adjusted Total Income (ATI)
Income Exempted from Income Tax (IEIT) IEIT= ATI * Exemption Rate
Taxable Income (TI) TI = ATI-IEIT
Foregone Annual Income Tax Revenue (FITR) FITR = IEIT * Effective Tax Rate

Using this accounting scheme and latest statistics from the DOE Annual Statistical Report we developed estimates of the foregone tax revenues associated with the implementation of income tax exemption for RMSP pensions. The estimates are shown in Table 5.

In the calculation the total monthly and annual DOD payments to RMSP were converted to average monthly and annual payments on a per person basis. A RMSP adjusted annual pension was computed by subtracting the standard deduction and the state retiree exemption. Applying the tax policy's annual exemption rate (100%) the amount of pension income exempt from state income tax was estimated. Applying a state's effective tax rate (4.4%) to this amount provided the estimate of the foregone tax revenues per RMSP. Thus, this tax policy with these parameters would cause the state to forego $644 in tax revenues per eligible RMSP on average. The total lost tax revenue estimate is $15,521,132. From the RMSP perspective, individual RMSP would receive $644 in additional disposable income.

The key assumptions underlying this estimation are:

1. The number of RMSP is fixed at the 2013 level. The simulation presumes this number of RMSP remains constant over the study period (2015-2029). There is neither cost-of-living adjustments to the pensions over the period nor reductions. The standard deduction and retiree exemptions do not change.

Arkansas that were residents when the exemption became effective. Thus by 2067, the costs of the foregone tax revenues associated with the income tax exemption should be close to zero.

Table 5: Estimation of Foregone Tax Revenes	2013
# Retired (RMSP)	25,790
# Paid by DOD	24,095
Payment by DOD	
Monthly Income ($1,000)	$45,861
Annual Income ($1,000)	$550,332
Averge Monthly DOD Payment to RMSP	$1,903
Average Annual Payment to RMSP	$22,840
Taxable Pension Income After Exemption	
RMSP Annual Penison Income (RPI)	$22,840
Standard Deduction	$2,200
Retiree Exemption	$6,000
RMSP Adjusted Annual Penision Income (ARPI)	$14,640
Exemption Rate	100%
Pension Income Exempt from Income Tax (RPIET)	$14,640
Taxable Pension Income (TRPI) = ARPI- RPIET	$0.00
Estimation of Foregone Income Tax Reveune	
Effective Tax Rate (ETR)	4.4%
RMSP Foregone Tax Revenue (=ETRxRPIET)	$644
States Total Foregone Income Tax Revenue	$15,521,132

2. Foregone state tax revenues from the federal pension of new RMSP are not considered as part of the cost of this tax exemption policy. Future migrants are not part of the RMSP cohort when the tax policy becomes effective.

3. The state's effective income tax rate is assumed to be 4.4% in the initial analysis. The 4.4% effective rate comes from an earlier analysis of this tax policy by the Department of Finance and Administration. The choice of appropriate effective state income tax rate is a significant consideration. On the one hand, it is the per dollar rate at which RMSP annual adjusted pension income is taxed while on the other hand, it is the rate at which migrants nonpension family income is taxed. Table 6 demonstrates the variation in the estimate of foregone tax revenues as the effective tax rate is varied. For the $352,750,000 (=$14,460 x 24,095) pension income exempt from income tax, a 1% reduction in the effective tax rate reduces foregone tax revenues by $3,527,530 annually. Thus, at a 3.4% effective tax rate, estimated foregone tax revenues would be $11,933,602 annually rather than the $15,521,132 at a 4.4% effective tax rate.

Table 6: Revenue Forgone from Military Retirees' Pension Income by Effective Income Tax Rate	
Effective Income Tax Rate	Tax Revenue from Pension Income of $352,750,000
1.0%	$3,527,530
2.00%	$7,055,060
2.25%	$7,936,943
2.40%	$8,466,072
2.50%	$8,818,825
2.75%	$9,700,708
3.00%	$10,582,590
3.25%	$11,464,473
3.40%	$11,993,602
3.50%	$12,346,355
3.75%	$13,228,238
4.00%	$14,110,120
4.25%	$14,992,003
4.40%	$15,521,132
4.50%	$15,873,885
4.75%	$16,755,768
5.00%	$17,637,650
6.90%	$24,339,957

Simulation Analysis and Findings

The RMSP income tax exemption simulation used a REMI model of Arkansas that provided realistic year-by-year estimates of the total regional effects of this tax policy change. The following description of the REMI Model is taken from a brochure produced by Regional Economic Models, Inc.[5]

> The REMI model is a dynamic forecasting and policy analysis tool that can be referred to as an econometric model, an input-output model, or even a computable general equilibrium model. In fact, REMI integrates several modeling approaches, incorporating the strengths of each methodology while overcoming its limitations. REMI models contain detailed industries. At its core, the REMI model incorporates the complete interindustry relationships found in input-output models. REMI models are dynamic; they demonstrate economic changes over time, allowing firms and individuals to change their behavior in response to changing economic conditions. These responses are based in part on general equilibrium economic theory. REMI models are sometimes referred to as "econometric models," due to the underlying equations and response estimations using advanced statistical techniques. The spatial dimension of the economy is represented by the underlying "New Economic Geography" structure of the REMI model. This incorporates the productivity and competitiveness benefits due to the concentration, or agglomeration, of economic activity in cities and metropolitan areas, and to the clustering of industries.

The REMI model of Arkansas divides the state into 5-regions each with 70-industry sectors per region. In this study we will only report the state level results, but they are aggregated from the regional impacts.

Simulation Analysis with a 4.4% Effective Income Tax Rate

In this analysis we phase in fully the exemption in the first year 2015 and continue to analyze its effect over a 15 year period (2015-2029). We simulated the economic consequences of this income tax policy by reducing personal taxes received by the state by an amount equal the annual estimate of foregone tax revenue. The reductions were allocated across the regions of the state according to the region's share of state disposable income. Since the loss of personal income tax revenue reduces the flow of funds to general revenues, the Arkansas balanced budget requirement necessitated an equivalent reduction in state government spending. Hence, state government spending was reduced by region according to the region's proportion of the total state government spending. Table 7 contains the revenue and spending data that were inputted into the REMI Model using an effective income tax rate of 4.4%. Notice that in the Table the overall totals balance, but the individual regions do not. The balance of tax receipts and spending is only required at the state aggregate level not a regional level.

Table 8 shows the impacts on the economy due to the tax policy. As anticipated, a balanced budget reduction in both personal income taxes paid and government spending reduces the level of aggregate demand in the economy lowering the levels of economic activity. Chart 3 illustrates these effects separately and their combined effect on the state GDP. The tax reduction stimulates the economy though

[5] Regional Economic Models, Inc. Amherst, MA 01002.

Table 7: Simulation Inputs for Tax Exemption Annual Budgetary Impacts (2015-2029) ($000)						
	Southeast	Central	Southwest	Northeast	Northwest	Total
Personal Taxes	-$1,041	-$5,656	-$1,447	-$2,200	-$5,177	-$15,521
State Government Spending	-$1,087	-$5,015	-$1,590	-$2,436	-$5,393	-$15,521

the additional income provided to the RMSP households creating additional tax revenues. On the other hand, the reduction in government spending slows the economy reducing economic activity and state gross domestic product (GDP). By combining the two effects, it can be seen that the government effect dominates the tax effect resulting in a net reduction in state GDP. The simulation demonstrates that over a 15 year period the reduction in economic activity will approach $15 million, which is approximately equal the estimate of the annual foregone tax revenues. The slowdown in economic activity is also reflected by declines in output, personal income, value added, and employment. Disposable income increases because the income tax exemption enables RMSP to retain more of their pension incomes which translates to increases in their consumption expenditures. Population increases slightly but insignificantly. The changing level of economic activity will induce further state and local budgetary impacts as both tax revenues and government spending change in response to economic conditions. Thus, in this case the simulation a reduction in the effective tax rate of 1.83% (=4.4% -2.57%) reduced the annual fiscal overhang of this tax exemption by .982 million annually.

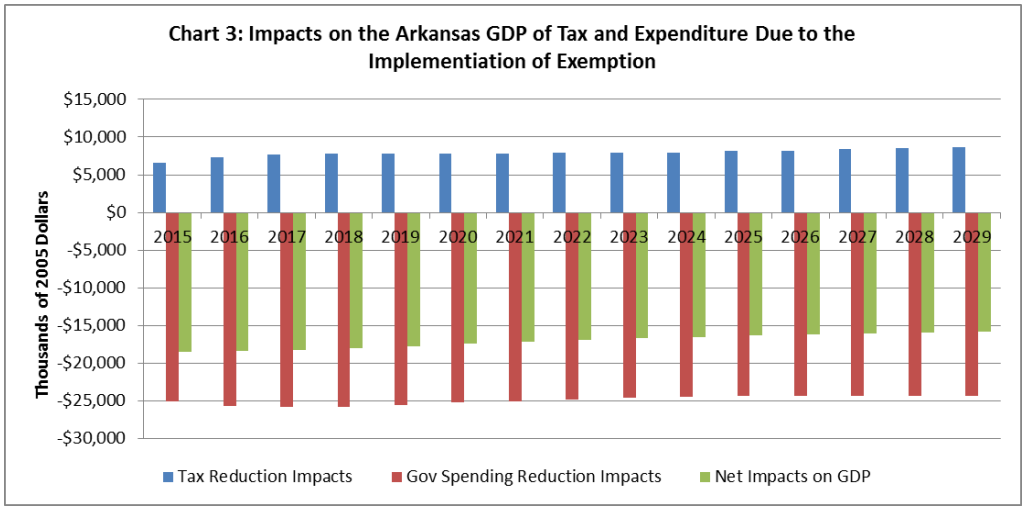


Table 8: Economics Impacts Assocated with the Military Retiree Income Tax Exemption (4.4% Effective Rate Baseline)																
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Output ($000)	(2005) Dollars	(29,663.1)	(29,541.0)	(29,296.9)	(28,930.7)	(28,442.4)	(27,908.3)	(27,450.6)	(26,977.5)	(26,550.3)	(26,184.1)	(25,848.4)	(25,543.2)	(25,329.6)	(25,116.0)	(25,024.4)
Gross Domestic Product ($000)	(2005) Dollars	(18,447.9)	(18,371.6)	(18,219.0)	(18,043.5)	(17,776.5)	(17,456.1)	(17,211.9)	(16,937.3)	(16,723.6)	(16,510.0)	(16,281.1)	(16,143.8)	(16,006.5)	(15,914.9)	(15,808.1)
Value Added ($000)	(2005) Dollars	(18,447.9)	(18,394.5)	(18,249.5)	(18,035.9)	(17,776.5)	(17,471.3)	(17,196.7)	(16,952.5)	(16,708.4)	(16,510.0)	(16,311.7)	(16,143.8)	(16,021.7)	(15,899.7)	(15,808.1)
Personal Income ($000)	Current Dollars	(15,312.2)	(16,838.1)	(18,089.3)	(19,104.0)	(19,912.7)	(20,584.1)	(21,163.9)	(21,713.3)	(22,186.3)	(22,689.8)	(23,147.6)	(23,605.4)	(24,124.2)	(24,612.4)	(25,146.5)
Disposable Personal Income ($000)	Current Dollars	3,150.9	2,174.4	1,426.7	900.3	557.0	335.7	183.1	91.6	76.3	45.8	61.0	76.3	76.3	76.3	76.3
Real Disposable Personal Income ($000)	(2005) Dollars	3,143.3	2,456.7	1,998.9	1,686.1	1,480.1	1,335.1	1,213.1	1,152.0	1,136.8	1,098.6	1,159.7	1,159.7	1,136.8	1,113.9	1,098.6
Total Employment	Jobs	-372	-368	-362	-355	-346	-338	-329	-321	-313	-307	-300	-294	-289	-284	-280
Private Non-Farm Employment	Jobs	-40	-37	-32	-27	-21	-15	-10	-4	1	5	9	12	14	17	18
Population	Jobs	1	2	3	4	5	8	10	12	15	18	21	25	27	30	32

Table 11: Economics Impacts Assocated with the Military Retiree Income Tax Exemption (2.57% Effective Rate Baseline)																
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Output ($000)	(2005) Dollars	(17,318.7)	(17,273.0)	(17,105.1)	(16,891.5)	(16,601.6)	(16,281.1)	(16,037.0)	(15,762.3)	(15,533.5)	(15,319.8)	(15,136.7)	(14,953.6)	(14,831.5)	(14,679.0)	(14,617.9)
Gross Domestic Product ($000)	(2005) Dollars	(10,780.3)	(10,742.2)	(10,627.8)	(10,520.9)	(10,376.0)	(10,162.4)	(10,070.8)	(9,903.0)	(9,765.6)	(9,674.1)	(9,536.7)	(9,445.2)	(9,368.9)	(9,307.9)	(9,231.6)
Value Added ($000)	(2005) Dollars	(10,765.1)	(10,749.8)	(10,650.6)	(10,528.6)	(10,376.0)	(10,192.9)	(10,040.3)	(9,903.0)	(9,765.6)	(9,658.8)	(9,536.7)	(9,445.2)	(9,368.9)	(9,292.6)	(9,231.6)
Personal Income ($000)	Current Dollars	(8,941.7)	(9,849.6)	(10,543.8)	(11,169.4)	(11,627.2)	(12,008.7)	(12,359.6)	(12,680.1)	(12,970.0)	(13,275.2)	(13,534.6)	(13,809.2)	(14,083.9)	(14,328.0)	(14,679.0)
Disposable Personal Income ($000)	Current Dollars	1,838.7	1,258.9	846.9	526.4	328.1	213.6	106.8	61.0	45.8	-	30.5	30.5	61.0	76.3	61.0
Real Disposable Personal Income ($000)	(2005) Dollars	1,838.7	1,442.0	1,174.9	1,014.7	892.6	892.6	762.9	694.3	610.4	587.5	618.0	595.1	625.6	648.5	595.1
Total Employment	Jobs	-218	-215	-211	-207	-202	-197	-192	-187	-183	-179	-175	-172	-169	-166	-163
Private Non-Farm Employment	Jobs	-23	-21	-19	-16	-12	-9	-5	-2	0	3	5	7	8	10	11
Population	Jobs	0	1	2	3	3	4	6	7	9	11	13	15	16	19	20

Fiscal Impact Analysis

The fiscal impact analysis traces the consequences of the tax exemption on the state's fiscal budget. This analysis used changes in economic activity derived from the REMI simulation and estimates of effective tax rates to develop estimates of sales, income, and corporate income tax as well as the induced changes in government spending. In particular, the annual changes in personal consumption expenditure of households were used to estimate sale tax changes; changes in personal income were used to estimate income tax changes; and changes in industry output were used as the basis of the corporate income tax estimates. Estimates of changing levels of state government spending used the REMI model's estimated annual changes. Table 9 shows the annual fiscal impacts of the budgetary changes estimated using the data obtained from the simulation.

The table's findings incorporate the tax revenue changes including the foregone tax revenue associated with the original RMSP cohort. The sales, income, and corporate income taxes are estimated using their simulated deviations from their baseline forecast. The total taxes are the combined tax revenue consequences from implementing this retirees' income tax exemption. The estimated changes in government spending are also measured as deviation from their baseline forecast. The budget effect measures the combined overall budgetary impact of this tax policy. For this simulation, the economic consequences of the annual income tax exemptions are annual budget deficits over the 2015-2029 period. On average, the simulation shows an average annual budget deficit of $2.379 million from implementing this tax exemption for RMSP without any offsetting migration of RMSP.

Table 9
Fiscal Impacts of Implementation of the Tax Exemption for Retired Military Personnel With No Migration 2014-2029
($Million Constant 2005 dollars)

Annual	Foregone Tax Revenues	Sales Tax	Income Tax	Corp Tax	Total Tax (TX)	Gov Exp (G)	Budget Effect (TX-G)
2015	-$15.521	-$0.409	-$0.773	-$0.033	-$16.735	-$14.721	-$2.014
2016	-$15.521	-$0.460	-$0.848	-$0.029	-$16.858	-$14.740	-$2.117
2017	-$15.521	-$0.500	-$0.905	-$0.022	-$16.948	-$14.747	-$2.201
2018	-$15.521	-$0.531	-$0.944	-$0.014	-$17.010	-$14.742	-$2.268
2019	-$15.521	-$0.554	-$0.972	-$0.005	-$17.052	-$14.736	-$2.316
2020	-$15.521	-$0.571	-$0.991	$0.002	-$17.081	-$14.729	-$2.353
2021	-$15.521	-$0.587	-$1.010	$0.010	-$17.109	-$14.722	-$2.387
2022	-$15.521	-$0.601	-$1.023	$0.016	-$17.129	-$14.716	-$2.413
2023	-$15.521	-$0.615	-$1.034	$0.021	-$17.149	-$14.709	-$2.439
2024	-$15.521	-$0.628	-$1.051	$0.026	-$17.174	-$14.705	-$2.469
2025	-$15.521	-$0.640	-$1.059	$0.029	-$17.190	-$14.700	-$2.491
2026	-$15.521	-$0.652	-$1.070	$0.033	-$17.210	-$14.697	-$2.513
2027	-$15.521	-$0.664	-$1.081	$0.034	-$17.232	-$14.695	-$2.537
2028	-$15.521	-$0.678	-$1.100	$0.036	-$17.262	-$14.693	-$2.570
2029	-$15.521	-$0.692	-$1.121	$0.037	-$17.296	-$14.691	-$2.605
Average	-$15.521	-$0.585	-$0.999	$0.009	-$17.096	-$14.716	-$2.379

Simulation Analysis with a 2.57% Effective Income Tax Rate

As already noted variation in the effective income tax rate has a significant consequences on the fiscal impacts of this income tax policy. In this section of the report, 2.57% effective tax is assumed for the State of Arkansas instead of a 4.4% rate as in the previous section. This new effective rate is used to analyze the foregone tax revenues and fiscal impacts of phasing in the tax exemption for military retirees. Table 10 contains the revenue and spending data that were inputted from the REMI model using the new effective rate.

Table 10: Simulation Inputs for of Tax Exemption Effective Income Tax Rae 2.57% Annual Budgetary Impacts (2015-2029) ($000)						
	Southeast	Central	Southwest	Northeast	Northwest	Total
Personal Taxes	-$607.936	-$3,303.756	-$845.189	-$1,285.246	-$3,023.625	-$9,066
State Government Spending	-$635.007	-$2,929.485	-$928.496	-$1,422.664	-$3,150.101	-$9,066

Table 11(page 12) shows the impacts on the economy due to the tax policy. Chart 4 illustrates these effects of the reduction in both personal income taxes paid and government spending separately and their combined effect on the state GDP. As before, a tax reduction stimulates the economy and the reduction in government spending slows the economy, reducing economic activity. By combining the two effects it can be seen that the government spending effect dominates the tax effect resulting in a net reduction in the GDP of the state. The simulation demonstrates that over a 15 year period the reduction in economic activity will approach $10 million annually. Thus, the reduction in the effective income tax rate by 1.83% reduces the anticipated decline in GDP of the state by approximately $5 million annually.

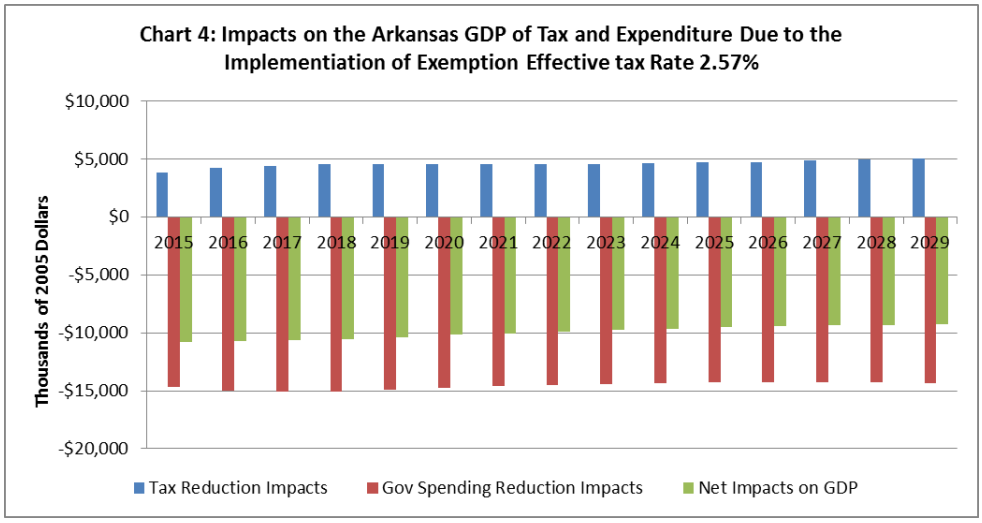


Table 11A shows the fiscal impacts associated with the lower effective tax rate using the data obtained from the REMI simulation. The findings incorporate a foregone tax revenue estimate. At a 2.57% effective tax rate, foregone tax revenues were estimated at $9,065,752 annually. This is a reduction in foregone tax revenues of approximately $6.456 million annually because of a lower effective income tax rate. The total taxes are the combined tax revenue consequences from implementing this military retirees' income tax exemption. The budget effect measures the combined overall budgetary impact of this tax policy as also measured as deviation from their baseline forecast. Again this simulation found that the economic consequences of the annual income tax exemptions are annual budget deficits over the 2015-2029 period. On average the simulation shows an annual budget deficit of $1.397 million from

implementing this tax exemption for RMSP without any offsetting migration of RMSP. Thus, in this simulation a reduction in the effective tax rate of 1.83% (=4.4% -2.57%) reduced the annual fiscal overhang of this tax exemption by .982 million annually.

Table 11A: Fiscal Impacts of Implementation of the Tax Exemption for Retired Military Personnel With No Migration 2015-2029: Effective Tax Rate 2.57%

($Million Constant 2005 dollars)

Annual	Foregone Tax Revenues	Sales Tax	Income Tax	Corp Tax	Total Tax (TX)	Gov Exp (G)	Budget Effect (TX-G)
2015	-$9.066	-$0.239	-$0.452	-$0.019	-$9.775	-$8.599	-$1.176
2016	-$9.066	-$0.269	-$0.497	-$0.017	-$9.849	-$8.611	-$1.238
2017	-$9.066	-$0.292	-$0.530	-$0.013	-$9.901	-$8.613	-$1.288
2018	-$9.066	-$0.311	-$0.553	-$0.009	-$9.938	-$8.610	-$1.327
2019	-$9.066	-$0.324	-$0.570	-$0.004	-$9.963	-$8.608	-$1.355
2020	-$9.066	-$0.334	-$0.579	$0.001	-$9.978	-$8.604	-$1.375
2021	-$9.066	-$0.344	-$0.592	$0.005	-$9.997	-$8.599	-$1.397
2022	-$9.066	-$0.353	-$0.604	$0.008	-$10.014	-$8.597	-$1.416
2023	-$9.066	-$0.361	-$0.614	$0.012	-$10.029	-$8.594	-$1.436
2024	-$9.066	-$0.369	-$0.624	$0.014	-$10.045	-$8.591	-$1.454
2025	-$9.066	-$0.376	-$0.630	$0.016	-$10.056	-$8.588	-$1.468
2026	-$9.066	-$0.383	-$0.636	$0.018	-$10.068	-$8.587	-$1.480
2027	-$9.066	-$0.391	-$0.645	$0.019	-$10.082	-$8.586	-$1.496
2028	-$9.066	-$0.399	-$0.653	$0.020	-$10.098	-$8.585	-$1.513
2029	-$9.066	-$0.407	-$0.664	$0.021	-$10.116	-$8.585	-$1.531
Average	-$9.066	-$0.343	-$0.589	$0.005	-$9.994	-$8.597	-$1.397

Policy Induced Migration of RMSP: Simulation

The above simulation highlights the consequence of implementation of an income tax exemption in an economy that is essentially closed to migration. Economies are not closed, they are dynamic, and people migrate for many reasons. A New Mexico's study of a similar income tax policy for RMSP found that RMSP migration is necessary for the fiscal effects of this income tax policy to contribute to the economy's performance.[6] When RMSP migrate to the state, they will be a source of tax revenues and they will demand additional government spending. They will have an expansionary impact on the state's flow of economic activity. The number of RMSP migrants needed to offset the contradiction effects of exempting current RMSP residents is a critical factor in determining the benefits to the state for this income tax policy.

Once the RMSP exemption becomes fully implemented it becomes a part of the structure of the economy. RMSP that are attracted to the state because of the tax exemption policy effect the economy in a manner similar to a policy induced change. That is, new RMSP migrants cause the economy to deviate from its baseline forecast that incorporates the retirees' income tax exemption. To simulate this change, a new baseline forecast was created for the REMI model. This baseline forecast used the results from a simulation of the phase in. The simulation of the RMSP migration to the state was then based on a baseline forecast that incorporates the military retirees' income tax exemption. RMSP migration to Arkansas is then a policy induced change to measure against a baseline that incorporates the RMSP income tax exemption. Several simulations were run using different migration rates and effective tax rates in order to assess the economic consequences of new RMSP locating in Arkansas, and to identify the level of RMSP migration that offsets the foregone tax revenues.

Family Income Characteristic of RMSP

A RMSP family profile for a military retiree was developed for this simulation. In particular, the profile focused on the income earnings of the RMSP and spouses. In Table 12 the criteria characteristic that were assumed to reflect an average RMSP family who migrates to Arkansas are shown. In general the value of these characteristics are derived from the RMSP characteristics of the national population and when possible for Arkansas.

Table 12 Characteristic RMSP and Spouse Used in Simulation		
% of RMSP Married		82%
% of Spouses in Labor Force		65%
RMSP Unemployment Rate		0.0%
Spousal Unemployment Rate (Arkansas annual average 2010-2013)		7.7%
# RMSP Paid by DOD		24095
Annual PMT DOD to RMSP ($000)	$	550,332
Earnings per RMSP (education attainment estimate)	$	48,734
Earnings per Spouse (Akansas Average Wage)	$	36,691
Fed Income Tax Rate (Joint Middle Quintile)		12.6%
DOD, 2013 Demographics Profile of Military Community.		

[6] Popp, Anthony and Starbuck, C. Meghan (2009), The Economic Impact of Exempting Retired Military Service Payments from New Mexico Personal Income Tax. Office of Policy Analysis, New Mexico State University, January 25, 2009.

Simulation of Migration of RMSP and Spouses Effective Income Tax Rate of 4.4%

The REMI model is so restrictive in its flexibility to simulate the economic impacts associated with migration. In particular, personal income is an endogenous variable determined by the interaction of variables and activities within the model. Because of limitation, it was necessary to use the REMI's default personnel income values instead using estimates of the migrates income. REMI default values are based on the average personal income levels within the state. However, we were able to use estimates of the pension income and incorporated these estimates as additional consumption expenditures of the migrants over and above their default income levels. Table 13 shows the average pension income for a RMSP.

Table 13: Pension Income RMSP	
# Paid by DOD	24,095
Total Annual PMT by DOD	$ 550,332,000
Annual Payment to RMSP	$22,840
Annual After Fed Tax Pension	$19,962
DOD. Annual Report, Office of the Acturary.	

Several additional assumptions were made in order to simulate the economic impacts associated with new RMSP families to the state. These assumptions include:

1. It was assumed that 82% of the RMSP have a spouse. We did not account for children.
2. REMI default values were used to determine income levels, labor force participation rate, and employment levels.
3. The REMI Model's estimates of the displacement of local workers were incorporated into the analysis.

In this REMI simulation, different annual levels of RMSP migration were assumed to continue over the 15 year period starting in 2015 and ending in 2029. The numbers of spouses were computed to arrive at the total number of adult migrants. It was assumed that these migrants would locate in the regions of the state that currently have increasing population counts. These are the Central, Northwest, and Northeast REMI regions of the state. Migrants were distributed across these regions in line with nonfarm employment to reflect employment opportunities. Another input in the simulation was the consumption expenditures associated with the pension income with the level distributed into the three regions. Since the findings are at a state level the distribution of both the migrants and their consumption expenditures are of minor significance.

Three simulations were run using three levels of annual migration 100, 250 and 500 RSMP. After adjusting for the number of spouses, the annual levels of migration were 182, 455, and 910. As in the previous simulation, the REMI model was used to generate the data to analyze the fiscal impacts. For each annual level of migration, annual fiscal impacts were calculated as measured by the deviation of the various taxes from their baseline tax base forecast. Table 14 shows the findings from this fiscal impact analysis and Chart 5 illustrates the fiscal impacts.

Table 14: Simulation Results: Fiscal Effects Different Levels of Migration 4.4%							
Scenario	Baseline	RMSP =100	Spouse = 82	RMSP =250	Spouse = 205	RMSP =500	Spouse = 410
Year	Annual Budget Position (No Migration)	Annual Budget Positon with Migration	Total Budget= Baseilne + Scenario	Annual Budget Positon with Migration	Total Budget= Baseilne + Scenario	Annual Budget Position	Total Budget= Baseilne + Scenario
2015	$ (2,013,926)	$ 88,585	$ (1,925,341)	$ 238,232	$(1,775,694)	$ 484,524	$ (1,529,402)
2016	$ (2,117,037)	$ 154,844	$ (1,962,193)	$ 399,965	$(1,717,071)	$ 816,817	$ (1,300,220)
2017	$ (2,201,224)	$ 213,286	$ (1,987,937)	$ 548,708	$(1,652,516)	$ 1,112,732	$ (1,088,492)
2018	$ (2,267,600)	$ 272,960	$ (1,994,641)	$ 699,519	$(1,568,082)	$ 1,415,954	$ (851,646)
2019	$ (2,315,810)	$ 335,126	$ (1,980,684)	$ 851,881	$(1,463,930)	$ 1,728,813	$ (586,997)
2020	$ (2,352,509)	$ 405,059	$ (1,947,450)	$ 1,018,291	$(1,334,218)	$ 2,058,979	$ (293,529)
2021	$ (2,386,506)	$ 478,890	$ (1,907,616)	$ 1,200,867	$(1,185,640)	$ 2,415,135	$ 28,628
2022	$ (2,412,505)	$ 559,304	$ (1,853,201)	$ 1,403,152	$(1,009,352)	$ 2,814,327	$ 401,823
2023	$ (2,439,092)	$ 641,852	$ (1,797,240)	$ 1,615,276	$ (823,816)	$ 3,236,089	$ 796,997
2024	$ (2,468,678)	$ 733,471	$ (1,735,207)	$ 1,838,342	$ (630,335)	$ 3,681,429	$ 1,212,751
2025	$ (2,490,535)	$ 828,164	$ (1,662,371)	$ 2,075,461	$ (415,074)	$ 4,155,680	$ 1,665,145
2026	$ (2,513,265)	$ 930,749	$ (1,582,515)	$ 2,322,960	$ (190,305)	$ 4,653,033	$ 2,139,769
2027	$ (2,536,656)	$ 1,035,482	$ (1,501,174)	$ 2,595,183	$ 58,528	$ 5,192,534	$ 2,655,878
2028	$ (2,569,686)	$ 1,152,714	$ (1,416,972)	$ 2,890,793	$ 321,107	$ 5,781,816	$ 3,212,130
2029	$ (2,604,657)	$ 1,269,938	$ (1,334,719)	$ 3,193,041	$ 588,384	$ 6,392,050	$ 3,787,394

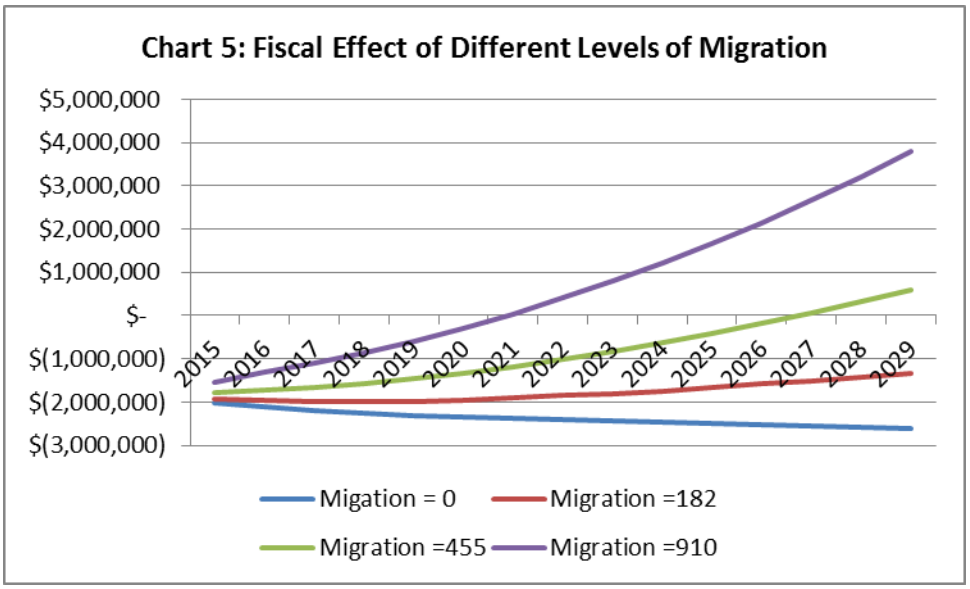


Table 14 shows the fiscal effects of the three different levels of migration. Each column shows different annual budget positions for each level of migration. As shown by the budget position in these columns, migration had a positive effect on the state budget by creating a surplus compared to the baseline forecast. This is not the end of the story because we have to account for the deficit budget associated with the implementation of the exemption. The baseline column contains the simulation estimates of the fiscal impacts associated with implementing this exemption. By adding the baseline budget values to each scenario's budget values the total budget impacts are estimated. Chart 5 is a plot of these values. Two of the three migration levels had fiscal impacts that achieved a state budget surplus in the timeframe of the

simulation. An annual migration level of 500 RMSP per year will push the budget into a surplus by 2021. While an annual increase of 250 RMSP pushes the budget into a surplus by 2027. Even 100 RMSP per year will push the budget into the surplus eventually but not in the time frame of the simulation.

Some qualifications are in order. The baseline budget deficit increases over the study's time frame. In reality, one would anticipate this to actually decline as noted earlier in the discussion of the current RMSP resident cohort. The family income levels and employment of the migrants are based on the default values of the REMI model. Given the educational attainment levels of the RMSP and their work experience they are likely to earn more than the prevailing average wage. If RMSP have higher earnings their tax payments will also be higher. State tax revenues will be greater than estimated using the default income levels. The total budget will achieve a surplus sooner. Another point of connection is the effective tax rate. Without entering into the debate about the appropriateness of the 4.4% effective income tax rate, it is sufficient to note that lower rates reduce the baseline budget deficits shifting the curves up in Chart 5. However, lower tax rates reduce income tax collections for the state for a given amount of income. This flattens the curve since the annual budget surpluses are reduced. The net effect is a clockwise twist in the curve that may or may not lengthen the time until the budget achieves a surplus.

Simulation of Migration of RMSP and Spouse Effective Income Tax Rate of 2.57%

Continuing with the analysis of the consequences of changing the effective income tax rate, two simulations were created using annual migration 100 and 250 military retirees. After adjusting for the number of spouses, the annual levels of migration were 182 and 455. Table 15 shows the fiscal effects of the two different levels of migration that are comparable with the analysis in the previous section. The baseline column contains the simulation estimates of the fiscal impacts associated with implementing this exemption. By adding the baseline budget values to each scenario's budget values the total budget impacts are estimated. An annual migration level of 100 RMSP and 82 spouses is not sufficient magnitude to generate positive fiscal effects over the 15 years of this study. The annual tax revenues from the economic activities associated with the retirees family incomes and spending do not offset the annual budget deficits associated with the fiscal overhead created by the exemption. However, at an annual level of migration of 250 military retirees and 205 spouses there are sufficient tax revenues to offset this overhang. Ten years after the phase in of the exemption the total budget goes into a surplus.
Table EF combines the total budgets for two migration scenarios for the two different effective income tax rates. When comparing the fiscal impacts at different migration levels, neither tax rate generates a budget surplus at the 182 level of migration in the time frame of the study. However, at the 255 level of migration both tax rates generate surplus but at different times. The simulation projects a surplus for the lower tax rate in 2025 and as opposed to the higher effective rate in surplus in 2027.

Table 16 combines the total budgets for two migration scenarios for the two different effective income tax rates. When comparing the fiscal impacts at different migration levels, neither tax rate generates a budget surplus at the 182 level of migration in the time frame of the study. However, at the 255 level of migration both tax rates generate surplus but at different times. The simulation projects a surplus for the lower tax rate in 2025 and oppose to the higher effective rate in surplus in 2027.

Table 15: Simulation Results: Fiscal Effects Different Levels of Migration Effective Tax Rate 2.57%					
Scenario	Baseline	RMSP =100	Spouse = 82	RMSP =250	Spouse = 205
Year	Annual Budget Position (No Migration)	Annual Budget Positon with Migration	Total Budget= Baseilne + Scenario	Annual Budget Positon with Migration	Total Budget= Baseilne + Scenario
2015	$ (1,176,323)	$ 79,481	$ (1,096,843)	$ 212,356	$ (963,968)
2016	$ (1,237,802)	$ 118,150	$ (1,119,652)	$ 314,024	$ (923,778)
2017	$ (1,288,211)	$ 156,498	$ (1,131,712)	$ 408,747	$ (879,464)
2018	$ (1,327,440)	$ 198,149	$ (1,129,292)	$ 512,679	$ (814,761)
2019	$ (1,355,117)	$ 243,487	$ (1,111,630)	$ 626,442	$ (728,675)
2020	$ (1,374,503)	$ 290,760	$ (1,083,743)	$ 746,999	$ (627,503)
2021	$ (1,397,391)	$ 345,512	$ (1,051,879)	$ 887,183	$ (510,208)
2022	$ (1,416,206)	$ 411,525	$ (1,004,681)	$ 1,045,757	$ (370,449)
2023	$ (1,435,773)	$ 480,654	$ (955,119)	$ 1,215,174	$ (220,600)
2024	$ (1,454,006)	$ 548,990	$ (905,016)	$ 1,393,677	$ (60,329)
2025	$ (1,467,806)	$ 622,740	$ (845,065)	$ 1,582,287	$ 114,481
2026	$ (1,480,196)	$ 703,516	$ (776,680)	$ 1,785,764	$ 305,568
2027	$ (1,496,363)	$ 789,036	$ (707,327)	$ 2,001,090	$ 504,727
2028	$ (1,513,050)	$ 881,670	$ (631,380)	$ 2,234,161	$ 721,112
2029	$ (1,531,334)	$ 978,549	$ (552,784)	$ 2,478,726	$ 947,392

Table 16: Comparable Fiscal Impacts: Alternative Effective Income Tax Rates				
	Total Budget= Baseilne + Migration Scenario			
	Annual Migration Level 182		Annual Migration Level 455	
Year	2.75% Rate	4.4% Rate	2.75% Rate	4.4% Rate
2015	$ (1,096,843)	$ (1,925,341)	$ (963,968)	$(1,775,694)
2016	$ (1,119,652)	$ (1,962,193)	$ (923,778)	$(1,717,071)
2017	$ (1,131,712)	$ (1,987,937)	$ (879,464)	$(1,652,516)
2018	$ (1,129,292)	$ (1,994,641)	$ (814,761)	$(1,568,082)
2019	$ (1,111,630)	$ (1,980,684)	$ (728,675)	$(1,463,930)
2020	$ (1,083,743)	$ (1,947,450)	$ (627,503)	$(1,334,218)
2021	$ (1,051,879)	$ (1,907,616)	$ (510,208)	$(1,185,640)
2022	$ (1,004,681)	$ (1,853,201)	$ (370,449)	$(1,009,352)
2023	$ (955,119)	$ (1,797,240)	$ (220,600)	$ (823,816)
2024	$ (905,016)	$ (1,735,207)	$ (60,329)	$ (630,335)
2025	$ (845,065)	$ (1,662,371)	$ 114,481	$ (415,074)
2026	$ (776,680)	$ (1,582,515)	$ 305,568	$ (190,305)
2027	$ (707,327)	$ (1,501,174)	$ 504,727	$ 58,528
2028	$ (631,380)	$ (1,416,972)	$ 721,112	$ 321,107
2029	$ (552,784)	$ (1,334,719)	$ 947,392	$ 588,384

The conclusions from this comparison are that higher effective income tax rates generate a larger overhang from the tax exemption for a given level of migration. However, higher effective tax exempts more pension income creating additional disposable income in the military retiree's family income. Spending for these families rise in response to the additional income as well as tax revenues related to this spending. The simulations indicated that the smaller overhang associated with a smaller effective tax rate dominates the spending effects of the higher effective tax rate. Therefore, smaller effective income tax rates can be anticipated to generate total budget surpluses at earlier dates as compared to larger effective income tax rates.

Reality Cross Check: Implan Analysis of Family Purchases

The Implan Model is an alternative economic model capable of doing a fiscal impact analysis.[7] The Implan Model is a static model that does not have the dynamic properties of a REMI model nor the richness in economic and demographic variables. Yet in the long run the two models findings converge to similar long run equilibriums. For our purposes, the Implan model has the flexibility to use our estimates of RMSP and spouses to cross check the REMI simulation findings.

Table 17 demonstrates Implan's flexibility in specification of the income for a RMSP and spouse. Due to this flexibility we were able to use the labor force characteristics to estimate the likely number of employed spouses and their incomes. We found that for an average annual unemployment rate of 7.7% for Arkansas (the average for 2010-2013) and 100 RMSP migrants to Arkansas we could expect 49 spouses to be employed. We were able to estimate there after tax income of $30,453 based on the average state earnings in 2014 of $36,691 at the 4.4% effective rate.

Table 17: Estimates of State and Local Taxes Paid to By RMSP and Working Spouses Migrating to Arkansas (Effective Tax Rate 4.4%, Overhang $15,521,132)

	Number of RMSP Migrants to Arkansas Per Year						
Year	100	182	200	250	300	405	910
2015	$ 814,070	$1,481,607	$ 1,628,140	$ 2,035,175	$2,442,209	$ 3,296,983	$ 7,408,035
2016	$ 1,628,140	$2,963,214	$ 3,256,279	$ 4,070,349	$4,884,419	$ 6,593,965	$ 14,816,071
2017	$ 2,442,209	$4,444,821	$ 4,884,419	$ 6,105,524	$7,326,628	$ 9,890,948	$ 22,224,106
2018	$ 3,256,279	$5,926,428	$ 6,512,558	$ 8,140,698	$9,768,838	$ 13,187,931	$ 29,632,141
2019	$ 4,070,349	$7,408,035	$ 8,140,698	$ 10,175,873	$12,211,047	$ 16,484,914	$ 37,040,176
2020	$ 4,884,419	$8,889,642	$ 9,768,838	$ 12,211,047	$14,653,257	$ 19,781,896	$ 44,448,212
2021	$ 5,698,489	$10,371,249	$ 11,396,977	$ 14,246,222	$17,095,466	$ 23,078,879	$ 51,856,247
2022	$ 6,512,558	$11,852,856	$ 13,025,117	$ 16,281,396	$19,537,675	$ 26,375,862	$ 59,264,282
2023	$ 7,326,628	$13,334,463	$ 14,653,257	$ 18,316,571	$21,979,885	$ 29,672,845	$ 66,672,317
2024	$ 8,140,698	$14,816,071	$ 16,281,396	$ 20,351,745	$24,422,094	$ 32,969,827	$ 74,080,353
2025	$ 8,954,768	$16,297,678	$ 17,909,536	$ 22,386,920	$26,864,304	$ 36,266,810	$ 81,488,388
2026	$ 9,768,838	$17,779,285	$ 19,537,675	$ 24,422,094	$29,306,513	$ 39,563,793	$ 88,896,423
2027	$ 10,582,908	$19,260,892	$ 21,165,815	$ 26,457,269	$31,748,723	$ 42,860,775	$ 96,304,458
2028	$ 11,396,977	$20,742,499	$ 22,793,955	$ 28,492,443	$34,190,932	$ 46,157,758	$ 103,712,494
2029	$ 12,211,047	$22,224,106	$ 24,422,094	$ 30,527,618	$36,633,141	$ 49,454,741	$ 111,120,529
Total Increase RMSP (Breakeven)	-	2,002	2,000	2,250	2,100	2,025	2,730
% Increae from 2013 RMSP Cohort (24,095)	-	8.3%	8.3%	9.3%	8.7%	8.4%	11.3%

We were also able to estimate the earnings of the RMSP based on an average salary of $48,734 and a zero unemployment rate. Their after tax earnings were estimated at $40,450. Combining the RMSP and

[7] Implan Group LLC. Huntersville, NC.

spouses after tax incomes with the pension income, RMSP household's income with working spouse was estimated at $90,865. If we extrapolate this to 100 RMSP as in the Table 17, the 100 RMSP's households have $7.39 million of purchasing power.[8] We are then able to analyze the fiscal impacts of this additional purchasing power of RMSP's households that move to the state and find employment as shown in Table 17.

The values in Table 17 are the estimates of expected annual flow of state and local tax revenues for various annual levels of migration including those levels previously discussed.[9] The migration levels are assumed to acquire annually which account for the increasing tax revenue levels. The flow of tax revenue enhances the state budget but they need to be offset with the budgetary costs of the tax exemption. These costs are the foregone tax revenues from the implementation of the policy. We know from our previous analysis the foregone tax revenues assuming a 4.4% effective tax rate are $15,521,132. The shaded area in Table 17 shows the years and migration levels where the tax revenues exceed the level of foregone tax revenues. In terms of fiscal effect, the state budget becomes positive (surplus) in the first year that becomes shaded for the different levels of migration. These finding are in line with the similar findings in the REMI analysis as shown in Chart 5.

Another reality check is to explore the effect of lowering the effective tax rate. Table 18 reconstructs Table 17 using a 2.57% effective income tax rate instead of the 4.4% rate. Data in Table 5 were used to estimate the foregone tax revenues at this alternative effective income tax rate. At a 2.57% effective income tax rate foregone tax revenues were estimated at $9,065,752. Again the shaded area in Table 18 shows the years and migration levels where the tax revenues exceed the level of foregone tax revenues. The shaded area has expanded as compared to the area in Table 17. In terms of fiscal effect, the state budget becomes positive (surplus) earlier and for lower levels of migration. Lowering the effective tax rate has had the effect of lowering the amount of foregone revenues that resulted from the implementation of the exemption. In addition, the increased after tax purchasing power of the RMSP households increases their spending but lower the flow of tax revenues to the state. On net the reduction in the overhang offsets the decline in tax revenues the earlier budget surpluses.

[8] Based on demographic characteristic of the military community, within 100 RMSP's households there would be 82 spouses of which 53 would be in the labor force. Given an average annual unemployment rate in Arkansas of 7.7%, there would be 49 spouses employed, 4 unemployed, and 29 not in the labor force. Source for the household characteristics was the DOD, 2013 Demographics Profile of the Military Community.

[9] The Implan model did not separate state and local tax revenues. This requires Implan's tax flow estimates to be interoperated as benefit flow to the state in general.

Table 18: Estimates of State and Local Taxes Paid to By RMSP and Working Spouses Migrating to Arkansas (Effective Tax Rate 2.57%, Overhang $9,065,752)							
	Number of RMSP Migrants to Arkansas Per Year						
Year	100	182	200	250	300	405	910
2015	$ 700,286	$1,274,521	$ 1,400,573	$ 1,750,716	$2,100,859	$ 2,836,160	$6,372,606
2016	$ 1,400,573	$2,549,043	$ 2,801,146	$ 3,501,432	$4,201,719	$ 5,672,320	$12,745,213
2017	$ 2,100,859	$3,823,564	$ 4,201,719	$ 5,252,148	$6,302,578	$ 8,508,480	$19,117,819
2018	$ 2,801,146	$5,098,085	$ 5,602,291	$ 7,002,864	$8,403,437	$ 11,344,640	$25,490,426
2019	$ 3,501,432	$6,372,606	$ 7,002,864	$ 8,753,580	$10,504,296	$ 14,180,800	$31,863,032
2020	$ 4,201,719	$7,647,128	$ 8,403,437	$ 10,504,296	$12,605,156	$ 17,016,960	$38,235,639
2021	$ 4,902,005	$8,921,649	$ 9,804,010	$ 12,255,012	$14,706,015	$ 19,853,120	$44,608,245
2022	$ 5,602,291	$10,196,170	$ 11,204,583	$ 14,005,729	$16,806,874	$ 22,689,280	$50,980,852
2023	$ 6,302,578	$11,470,692	$ 12,605,156	$ 15,756,445	$18,907,734	$ 25,525,440	$57,353,458
2024	$ 7,002,864	$12,745,213	$ 14,005,729	$ 17,507,161	$21,008,593	$ 28,361,600	$63,726,065
2025	$ 7,703,151	$14,019,734	$ 15,406,301	$ 19,257,877	$23,109,452	$ 31,197,760	$70,098,671
2026	$ 8,403,437	$15,294,256	$ 16,806,874	$ 21,008,593	$25,210,311	$ 34,033,920	$76,471,278
2027	$ 9,103,724	$16,568,777	$ 18,207,447	$ 22,759,309	$27,311,171	$ 36,870,080	$82,843,884
2028	$ 9,804,010	$17,843,298	$ 19,608,020	$ 24,510,025	$29,412,030	$ 39,706,240	$89,216,491
2029	$ 10,504,296	$19,117,819	$ 21,008,593	$ 26,260,741	$31,512,889	$ 42,542,400	$95,589,097
Total Increase RMSP (Breakeven)	1,300	1,456	1,400	1,500	1,500	1,620	1,820
% Increae from 2013 RMSP Cohort (24,095)	5.4%	6.0%	5.8%	6.2%	6.2%	6.7%	7.6%

Conclusion

Will an income tax policy that exempts military retirees' pension income from the state income tax be beneficial to the state in the long run? To answer this question the study simulated the fiscal impacts of this tax policy using a REMI model of Arkansas. The simulations focused on the fiscal impacts associated with the costs of the income tax exemption and then the benefits of the exemption associated with the migration of military retirees to the state and their earnings potentials.

The two key factors in estimating the costs of this exemption were the current level military retiree's pension and the effective state income tax rate. For a given level of pension income, the greater the effective tax rate the greater the foregone tax revenues. However, the high effective tax rate is partially offset by higher levels of disposable income for military retirees due to the income tax exemption.

Regarding the benefits of the new military retiree to the state several critical factors were identified. Amount these factors were the potential income that the retiree and spouse can expect to earn in Arkansas. Military officers have educational attainment levels that are higher than those in Arkansas. This suggests that their earnings from second careers may also be higher than average. Spouse earning potential was much more difficult to quantify. State average earnings were used as a proxy. Another critical factor is the labor force participation rates of these new residents. The participation of the military retiree and spouse in the labor force affects the flow of their tax payments which is a fiscal benefit to the state from retired military families locating in the state.

Simulations of the fiscal impacts were developed around several different sets of assumptions about the effective tax rate, labor force participation, and earnings. Simulation based on a family income of approximately $90,000 a year found that when migration reached levels of 250 new RMSP residents annually the benefits of the tax exemption exceeded the costs in year 2020 at a 2.57% effective rate. To achieve this outcome requires military retiree population to increase by 5.8% over the 6 years. At a 4.4% effective income tax rate annual migration of 250 military retirees provides sufficient revenues to offset the overhang by 2022. Over this period the military retiree population needs to increase by 9.3%.

REMI simulations used lower earnings levels than the family income approach. The variation in the effective income tax rate was the critical factor in these simulations. With an effective tax rate of 4.4% and an annual level of new military retirees of 250 (and 205 spouse) to the state, the benefits associated with the new migrants offset the costs of the exemption in 2027. At a 2.57% effective income tax rate, benefits begin to exceed the cost in year 2025.

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