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# Pensionomics

Measuring the Economic Impact of State and Local Pension Plans

by Ilana Boivie and Beth Almeida

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## ABOUT THE AUTHORS

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## EXECUTIVE SUMMARY

State and local government pension plans are highly valued by the teachers, public safety personnel, and other public servants who count on these plans for a secure source of income in retirement. Traditional, defined benefit pension plans are an important reason why many employees choose a career in public service over higher paying private sector careers. But the benefits provided by state and local government pension plans have an impact that reaches well beyond the retirees who receive pension checks.

Public pensions play a vital role in the national economy as well as in local economies across the country. When a retired teacher in the state of California, for example, receives a benefit payment from her pension fund, she spends the money on goods and services in her community, thus supporting the local economy and industries where she resides. The steady, monthly benefit payments offered by public pension plans provide peace of mind and security for retirees, but local economies, in turn, benefit from the regular expenditures these retirees make on food, medical services, transportation, and even the occasional movie matinee. Public pension payments are vital to small communities and economies across the country where, due to lack of diverse local industries, other steady sources of income may not be readily found. Such reliable sources of income may be especially important in stabilizing local economies during economic downturns, because, as compared to more individualized forms of retirement income, pension income is guaranteed, so retirees need not worry about reducing spending with every dip in the stock market.

This study analyzes data on state and local government pension plans from the U.S. Census Bureau to assess the overall economic impact of benefits paid by these plans to retirees. We analyze these impacts on a national level and in each of the fifty states.

This study finds that, in FY 2005-2006:

- Collectively, state and local DB pension plans held close to \$3 trillion in assets, with investment returns accounting for 75.3% of total pension revenues.
- Over \$151.7 billion in pension benefits were paid to 7.3 million retired employees of state and local government and their beneficiaries (typically surviving spouses). Expenditures made out of those payments collectively supported:
  - » More than 2.5 million American jobs that paid more than \$92 billion in total compensation;
  - » Over \$358 billion in total economic output nationwide;
  - » Over \$186 billion in value added to the national economy;
  - » Over \$57 billion in federal, state, and local tax revenue.
- State and local pension expenditures have large multiplier effects:
  - » For each dollar paid out in pension benefits, \$2.36 in total economic output was supported.
  - » For every dollar contributed by taxpayers to state and local pension funds, \$11.45 in total output is supported in the national economy.
- Nationally, the largest economic impacts were seen in the manufacturing, health care and social assistance, finance and insurance, retail trade, and accommodation and food services sectors.

## INTRODUCTION: STATE AND LOCAL GOVERNMENT PENSIONS IN THE UNITED STATES

State and local government employee pension systems began to take root on a large scale in the U.S. during the Great Depression, when concern for elderly Americans' retirement security was growing nationwide.

In 1935, when the establishment of the Social Security system left out state and local workers, many states took action in developing their own retirement systems for their public servants. Between 1931 and 1950, nearly half of the large public employee pension plans surviving today were established; 45 states had retirement systems in place by 1961.<sup>1</sup>

Today, state and local pension plans in the United States collectively held total assets of just under \$3 trillion. In 2006, state and local plans served close to 26 million Americans, including 14.5 million active participants, 4 million inactive members, and 7.3 million retirees and other beneficiaries receiving regular benefit payments. Total benefit payments in 2006 were \$151.7 billion, for an average benefit payment of \$1,739 per month, or \$20,867 per year, a relatively modest benefit by most standards.<sup>2</sup>

Public sector defined benefit (DB) plans are prefunded systems, which means that a retirement fund receives regular contributions for each worker during the course of that worker's career. This type of arrangement can be contrasted with "pay-as-you-go" systems like Social Security, whereby contributions of current workers are used to pay benefits for current retirees. Pre-funded retirement systems have the advantage that investment earnings can do much of the work of paying for benefits. In such a system, the contributions made on behalf of current workers are invested and these investment earnings compound over time. Over a span of decades, accumulation of investment earnings can be substantial.

In state and local government pension plans, typically both the employee and employer make contributions to the pension fund. Professional managers, overseen by trustees, steer the investment of these funds and have a fiduciary duty to ensure that the retirement fund is operating in the best interest of workers and retirees.<sup>3</sup> DB pensions are distinguishable from

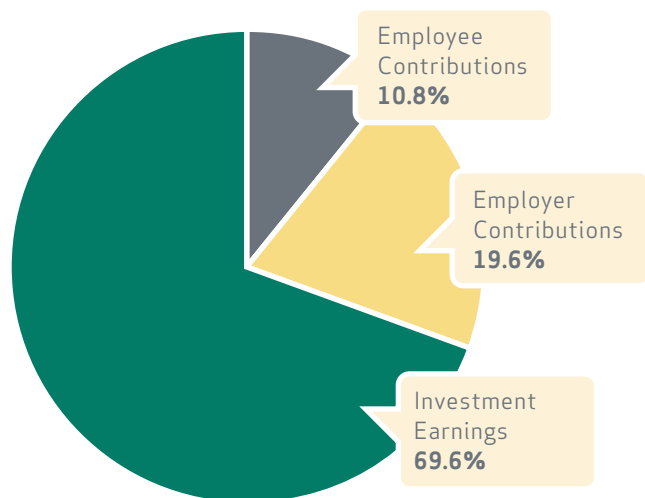
defined contribution (DC) plans (like 401(k) plans) in that they provide broad-based coverage, secure money for retirement, a lifetime income, and special protections for spouses.<sup>4</sup> Even after accounting for all of the extra benefits of a DB retirement system over DC accounts, recent research has shown that DB plans, such as those described here, are more economically efficient than DC plans; that is, to deliver the same level of retirement benefits, a DB plan can do the job at almost half the cost of a DC plan.<sup>5</sup>

In 2006, total state and local pension receipts were \$392.8 billion, with government contributions totaling \$64.5 billion, employee contributions at \$32.7 billion, and earnings on investments accounting for the lion's share—\$295.6 billion. Put differently, of total state and local pension fund receipts in 2006, 16.4% came from employer contributions, 8.3% from employee contributions, and 75.3% from investment earnings.

This pattern has held up even when examining longer time frames, as shown in Figure 1. Between 1993 and 2006, 19.6% of pension fund receipts came from employer contributions, 10.8% from employee contributions, and 69.6% from investment earnings. Earnings on investments — not taxpayer contributions — then, have historically made up the bulk of pension fund receipts.

Just as contributions from employees and employers have an expanded impact through the compounding of investment earnings over time, a similar dynamic occurs when retirees spend their pension checks. When a retiree receives a pension benefit, the money does not go under a mattress, rather, the retiree spends it on goods and services in her community. These expenditures have a "ripple effect" in the economy, as one person's expenditures become another person's income. Analyzing the size and nature of these ripple effects is the goal of our study.

Figure 1:  
**Aggregate Contributions by Source,  
1993-2006**



Source: U.S. Census Bureau State and Local Government Employee-Retirement Systems

## Measuring the National Economic Impact of State and Local Pensions

This study measures the economic “footprint” of pension benefits paid by state and local pension plans, both on a national basis, and within each state economy. Our analysis rests on the recognition that expenditures have a “multiplier” effect in a regional or national economy. When money is spent at a local business, that business sees an increase in revenue, thus boosting the economy initially. But that initial purchase generates even more local income, as shop owners will spend more money at other local businesses, purchasing more input goods to make additional products. Then, those input business owners will also spend more money in the local economy to increase their production, and so on. Additionally, with the increase in revenue, local merchants may hire extra workers, further fueling the local economy. Thus, with each new round of spending, additional revenue is generated, expanding job creation, incomes, total output, and tax revenue to the local community, as illustrated in Figure 2.

Our analysis is focused on the expenditure effects of state and local pension benefits, measuring the economic impacts that result when expenditures made by retirees ripple throughout the economy. When state and local retirees receive their

retirement benefit payments, they spend money in their local economy through the purchase of local goods and services. Local merchants, then, see an increase in their revenues and incomes. The merchants then spend this additional income on more inputs and hiring more workers. These new employees then spend their additional income, purchasing additional goods and services in the local community, creating additional cycles of economic activity.

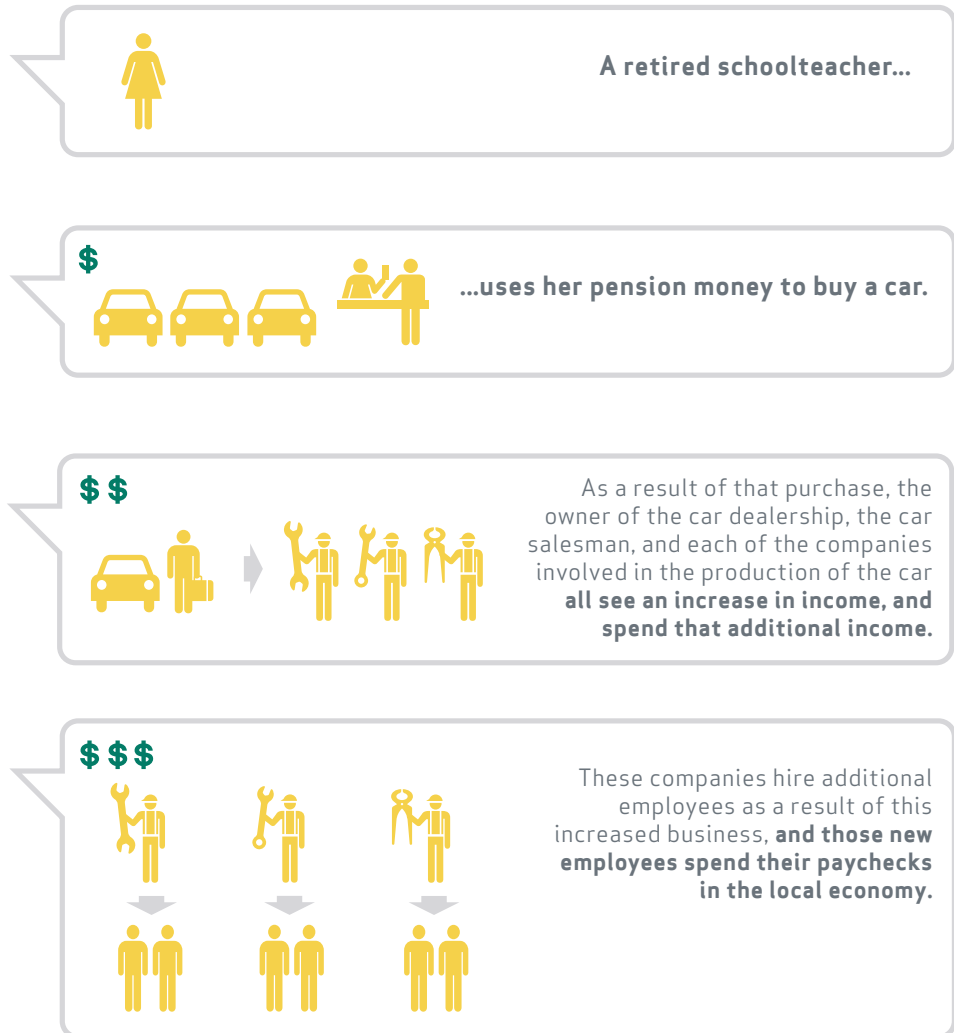
It should be noted that this study measures the gross economic impacts of pension benefit expenditures only, rather than the net economic impacts. Pension payments are a form of deferred compensation, meaning that employees and employers contribute to the pension trust over the course of an employee’s career as a portion of the employee’s total compensation. Had that employee received that compensation in another form – for example, a slight increase in gross pay each month – s/he would have seen higher disposable income, and presumably would have spent a portion of that income in the local economy at that time. Accurately accounting for the net economic impacts of public pensions would require a dynamic model and data that spans several decades. Because of data limitations, this is not possible.

Although one might be tempted to simply deduct from a single year’s gross benefit payments the total employee and employer contributions in that year to capture a net effect, such a measure will not be accurate. First, the contributions for any given year for active employees have no bearing on the benefits paid out in that year to retirees. Due to the nature of prefunded pension systems discussed earlier, older, more mature pension systems could likely be construed as having a larger economic impact than younger, less mature systems, simply because the older system will generally pay out more benefits per current worker. Yet this interpretation would be highly inaccurate, since the whole point of prefunding is that current workers do not pay the benefits of retirees, but pay into the system during the course of their career for their own retirement. Due to these limitations and possible misinterpretations, the analysis we present here assesses gross economic impacts, rather than net impacts.

However, because taxpayers and elected officials have an interest in gauging the ultimate economic impact of each tax dollar “invested” in a state or local pension plan, we do calculate a proxy measurement of the total economic impact attributable to each dollar in pension contributions made by the taxpayer, called the “taxpayer investment factor.” Details follow.



Figure 2:  
**The Multiplier Effect: How Spending Ripples Through the Economy, Supporting Jobs and Incomes in the Process**



## Data and Methodology

The data used for our analysis comes primarily from two sources: the U.S. Census Bureau’s State and Local Government Employee-Retirement System survey and IMPLAN. Data for 2006 was used, as it was the most recent available at the time of our analysis.

The Census survey is a representative sample of state and local DB pension plans in the United States. This survey provides data on revenues, expenditures, financial assets, and membership for state and local pension plans on a national basis and in each of the 50 states.<sup>6</sup>

To measure the economic impacts of retiree expenditures made out of benefits paid by state and local government pension plans, the input-output modeling software, IMPLAN, was used. IMPLAN was first developed in the 1970s as a part of a USDA Forest Service project to analyze the economic effects of local land management projects such as timber, mining, and recreation activities.<sup>7</sup> Since that time, IMPLAN has been used by industry and government analysts throughout the country to assess economic impacts of highly varied local community development projects; these studies include many recent economic impact studies of pension benefit payments from state retirement systems.<sup>8</sup> Detailed information on our data and methodology appear in the technical appendix to this report.

## ECONOMIC IMPACT MEASUREMENTS

We analyze the economic impact of expenditures made by retirees out of their state and local pension payments along four dimensions — employment, value added/income, output, and tax revenues. Each of these is described in detail below.

**1. Employment Impact:** When retirees spend their pension checks, their expenditures help to support jobs – at the local diner, hospital, or even at a factory somewhere across the country. When a retiree makes a purchase, a business sees an increase in revenues. With enough of an increase, that business may be prompted to hire more workers. Using IMPLAN, we calculated the number of jobs supported by retirees’ expenditures. We also present estimates of the direct, indirect, and induced employment impacts. The direct employment impact occurs when the initial benefit payment is spent by the retiree. The indirect impact occurs as a result of the additional income generated through the purchase of more goods and services by merchants receiving direct expenditures from retirees. The induced employment impact is attributable to the additional income generated through the purchase of goods and services by employees hired as a result of the direct and indirect impacts. Finally, we provide breakdowns by industry of where these jobs are. In all cases, the employment impact estimates include full-time and part-time positions.

**2. Value Added and Income Impacts:** Value added is a net estimate of the creation of “new value” in the economy. It includes the value of employee compensation, profits, rents, and other aspects of production, but excludes the costs of purchased materials and services. We use IMPLAN to calculate the value added attributable to state and local pension benefit expenditures. Estimates of total value added are provided as well as a breakdown into value added’s four component parts: employee compensation (wages/salaries, fringe benefits, and non-cash compensation), proprietors’ income (payments self-employed individuals receive as income), other property type income (payments from interest, rent, royalties, dividends, and profits), and indirect business taxes (excise and sales taxes, primarily). We also present estimates of income supported by pension expenditures, which includes employee compensation, proprietors’ income, and property income only. Here again, we provide breakdowns by industry.

**3. Output Impact:** Total output includes the value of all goods and services produced in the economy. Using IMPLAN, we calculate the value of total output supported by retirees’ expenditures of state and local pension benefits. As with the employment effects, we present estimates of the impact on total output, broken down by direct, indirect, and induced impacts. The direct impact consists of the initial round of spending. Indirect impacts consist of those additional rounds of spending by the local merchants. Induced impacts are the additional outputs created when new employees, hired as a result of the direct and indirect spending rounds, spend their paychecks in the local economy. As with our employment, income and value added estimates, we provide breakdowns of total output supported by pension payments by industry.

We also calculate a pension expenditure multiplier and taxpayer investment factor. The pension expenditure multiplier tells us the total economic impact attributable to each dollar in pension benefits paid to a retiree. (For example, a multiplier of 2.2 would mean that for every \$1 paid to retirees in a local economy, \$2.20 of total output is supported in that region.) The pension expenditure multiplier is calculated by taking the total output (consisting of the direct, indirect, and induced impacts taken together) and dividing it by the value of the “initial event” in the economy (in this case, the pension benefit being paid). Expenditure multipliers usually lie between 1.0 and 3.0.

**4. Tax Impact:** Economic activity of all kinds — receiving pension income, earning wages, producing profits, selling goods and services – provides the basis for the tax revenues that are required to fund government services. To calculate the impact pension payments have on tax revenues, we first calculate the taxes paid by beneficiaries directly on their pension benefits. Then, using IMPLAN, we calculate estimates of taxes attributable to the economic activity that results when retirees’ spend their pension checks and in all subsequent rounds of spending. This includes all corporate, personal income, and business taxes that are generated through each spending round.

## RESULTS: NATIONAL ECONOMIC IMPACT OF STATE AND LOCAL PENSIONS

Our analysis indicates that benefits paid by state and local government pension plans have a sizeable economic “footprint.” The impact on employment, value added, income, output and tax revenues are large and reach well beyond the retirees who receive pension benefits from these plans.

### Employment

The analysis finds that the \$151 billion in gross pension benefits paid out in 2006 supported over 2.5 million American jobs, as shown in Table 1. Of these 2.5 million jobs, over 1 million were attributable to direct impacts (direct spending by retirees), 580 thousand to indirect impacts (additional spending rounds by merchants), and 868 thousand through induced impacts (additional jobs supported when employees, hired as a result of the direct and indirect spending rounds, spend their paychecks).

By way of comparison, this is roughly the same number of jobs that were lost in the U.S. economy in 2008. The number of jobs supported by state and local pension benefits is about the same number of Americans that were employed in the construction of buildings and nonresidential building industry, for which there were 2.6 million total jobs in 2006, and is greater than the number of workers employed by offices of physicians, for which there were 2.2 million in 2006.<sup>9</sup>

Table 1.  
**State and Local Pensions Support More than 2.5 million American Jobs**

National Employment Impact	
	Number of Jobs by Source
Direct Impact	1,063,172
Indirect Impact	580,725
Induced Impact	868,768
<b>Total Employment Impact*</b>	<b>2,512,665</b>

\*Totals may not add up exactly due to rounding.

### Income and Value Added

Retirees’ expenditures of state and local pension benefit payments supported close to \$187 billion in value added to the national economy in 2006, including over \$92 billion in employee compensation, \$14 billion in proprietors’ income, \$62 billion in other property type income, and \$17 billion in indirect business taxes. This is more value added than was contributed by the entire oil and gas mining industry, which generated \$159.4 billion in value added in 2006.<sup>10</sup>

Table 2.  
**State and Local Pensions Support \$186.8 billion in Value Added**

National Value Added Impact	
	Value Added by Source (in \$ billions)
Impact on Labor Income**	\$107.1
Impact on Other Property Income	62.4
Impact on Indirect Business Taxes	17.3
<b>Total Value Added Impact*</b>	<b>\$186.8</b>

\* Totals may not add up exactly due to rounding.

\*\* Includes \$92,778.31 million in employee compensation and \$14,311.58 million in proprietors’ income.



## Total Output

Our model further finds that the \$151.7 billion in state and local pension benefit payments in 2006 supported over \$358.6 billion dollars in overall economic output in the national economy. This total output impact of \$358.6 billion includes over \$144 billion in direct impacts, \$95 billion in indirect impacts, and \$118 billion in induced impacts.

This is roughly equivalent to the total output contributed by the manufacturing of computer and electronic products, which generated \$386.2 billion to the national economy in 2006, and is significantly larger than the entire air, rail, and water transportation industry, which generated \$248.3 billion in output in 2006.<sup>11</sup>

## Tax Revenue

In terms of tax revenue, the model finds that \$57.6 billion in total tax revenue was attributable to state and local pension expenditures in 2006, including over \$29 billion in federal tax revenue and \$21.2 billion in state and local tax revenue. (See Table 4.) Tax revenue comes from two major sources: taxes paid by beneficiaries directly on their pension benefits and taxes resulting from expenditures made in the local economy (for example, sales taxes resulting from a retail purchase). Of the total tax revenue supported, over \$7.2 million came from taxes paid by beneficiaries on their benefits and \$50.3

Table 3.  
**State and Local Pensions Support \$358.6 billion in Total Economic Activity**

National Output Impact	
	Total Output by Source (in \$billions)
Direct Impact	\$144.5
Indirect Impact	95.4
Induced Impact	118.7
<b>Total Output Impact*</b>	<b>\$358.6</b>

\* Totals may not add up exactly due to rounding.

million from other tax revenues. To put these numbers in perspective, the total federal tax revenue attributable to public pension benefit payments is roughly equivalent to what the federal government spent on science, space, and technology in 2006, including research and all supporting activities, as well as the amount outlaid for veterans' hospital and medical care in that year.<sup>13</sup> The total state and local tax revenue supported is roughly equivalent to what states spent on both parks and recreation and natural resources in 2004 (the last year for which data was available).<sup>14</sup>

Table 4. **State and Local Pensions Support More than \$57 billion in Tax Revenue**

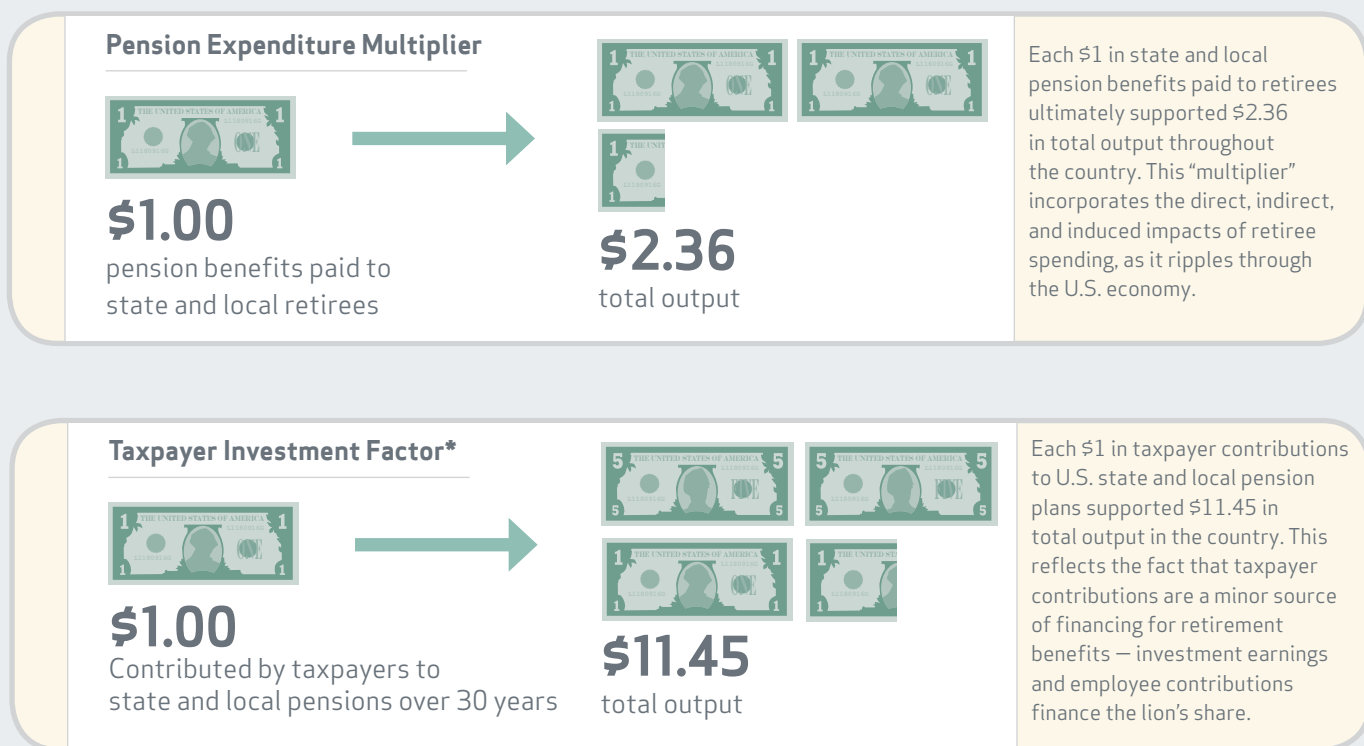
Tax Revenue Impact by Source (in \$millions)			
Source	Taxes Paid by Beneficiaries on Benefits	Tax Revenue Resulting from Retiree Expenditures	Total Tax Revenue
Corporate Taxes	N/A	\$93.4	<b>\$93.4</b>
Federal Taxes	5,310.2	29,048.5	<b>34,358.7</b>
State and Local Taxes	1,926.8	21,222.5	<b>23,149.4</b>
<b>Total Tax Revenue*</b>	<b>\$7,237.1</b>	<b>\$50,364.4</b>	<b>\$57,601.5</b>

\* Totals may not add up exactly due to rounding.

### Figure 3: Economic Multipliers

The pension expenditure multiplier for 2006 was 2.36, meaning that for every dollar paid out in benefits by a state or local pension plan in that year, \$2.36 of total output was generated in the national economy.

Because state and local pension plans are pre-funded, only a small portion of the total pension payment in any given year was funded through taxpayer dollars, as discussed previously. Therefore, it may be helpful to calculate the total impact of state and local pension benefit expenditures that is attributable to the “taxpayer investment” in these plans.<sup>12</sup> That is, because only \$0.21 of every dollar paid out in pension benefits is generated through taxpayer contributions, the taxpayer investment factor will be substantially higher than the expenditure multiplier. In 2006, for example, of the \$151.7 billion paid out in pension benefits, only \$31.3 million was funded by taxpayer dollars. The total economic impact attributable to state and local pension benefits was \$358.6 billion. The taxpayer investment factor, then, was 11.45. In other words, for every dollar contributed to state and local pension plans by taxpayers, \$11.45 in total output was supported in the national economy.



\* Caution should be used in interpreting this number, because the Census data used reflect the taxable status of contributions only; because employee contributions may be reported as taxpayer contributions, the multiplier here may be underestimated.

## Economic Impacts by Industry

When broken down by industry, the results show significant effects on employment, income, value added, and output in all major industry sectors. (See Table 5.) In terms of employment, state and local pension expenditures supported the greatest number of jobs in the health care and social assistance industry, with roughly 425 thousand jobs, followed by retail trade, with about 393 thousand and accommodation and food services,

with almost 239 thousand jobs. The largest value added impacts were in the health care and social assistance, finance and insurance, and retail trade sectors, with value added of \$21.9 billion, \$19.4 billion, and \$18.1 billion, respectively. The industries with the largest output impacts were manufacturing, with over \$69.2 billion, health care and social assistance, with over \$35.6 billion, and finance and insurance, with over \$32.6 billion in output.

Table 5. State and Local Pensions Support Economic Activity in Every Industry

National Economic Impacts by Industry Sector				
Industry	Employment Impact (# jobs)	Income Impact (\$ million)	Value Added Impact (\$ million)	Output Impact (\$ million)
Agriculture, Forestry, Fishing, and Hunting	62,696	1,852.4	\$1,938.9	5,411.3
Mining	6,998	2,230.0	2,559.9	4,204.9
Utilities	11,108	4,283.6	5,099.0	7,209.9
Construction	16,431	839.4	852.8	1,855.7
Manufacturing	146,396	16,167.4	17,017.5	69,220.3
Wholesale Trade	92,118	8,820.8	11,296.2	16,753.2
Retail Trade	392,974	14,283.0	18,059.8	27,434.8
Transportation and Warehousing	95,268	5,613.0	5,894.7	10,758.3
Information	55,968	8,547.5	9,266.6	19,063.8
Finance and Insurance	152,003	18,638.4	19,443.6	32,606.6
Real Estate and Rental and Leasing	139,165	8,384.2	17,000.7	25,402.4
Professional, Scientific, & Technical Services	137,472	10,298.4	10,496.8	18,770.5
Management of Companies & Enterprises	26,274	3,321.5	3,374.6	5,535.9
Administrative and Support and Waste Management and Remediation Services	155,389	5,503.7	5,642.8	9,084.5
Educational Services	64,014	2,184.4	2,218.9	3,691.7
Health Care and Social Assistance	424,887	21,666.1	21,925.6	35,605.2
Arts, Entertainment, and Recreation	71,524	2,208.5	2,458.0	4,040.7
Accommodation and Food Services	238,611	6,073.9	6,860.3	13,374.4
Other Services (Except Public Administration)	194,396	5,459.3	5,839.6	11,100.1
Public Administration	28,974	2,360.0	2,363.7	5,183.9

Note: The sum of these industry effects does not equal the total national effects, because the following IMPLAN sectors are not included in the industry classifications above: noncomparable imports, scrap, used and secondhand goods, rest of the world adjustment to final uses, inventory valuation adjustment, owner-occupied dwellings, capital, and inventory additions/deletions.

## MEASURING STATE-LEVEL ECONOMIC IMPACTS

Next, we report the specific economic impacts of state and local pension benefit expenditures within each state. When calculated on a state-by-state basis, the economic impacts and multipliers are collectively smaller than the national impacts and multipliers, due to the fact that state economies are generally smaller and less diverse than the national economy as a whole.

The smaller and more homogeneous any local economy is, the smaller the economic multipliers will be for that economy, due to the fact that input-output economic analysis takes into account local production patterns, eliminating from any local economy's total output that which leaves the state. For example, if a consumer in the state of Alabama purchases a new car, that purchase is broken down into its various components of production: the engineers and designers, the auto parts manufacturers, the automobile assembly manufacturer, and the retail car salesman all receive a portion of the revenue from that sale. Because the car was purchased within Alabama, the portion of output due the car dealership will certainly be added to Alabama's total output. If the car was designed in Canada and manufactured in Detroit, however, output from these services would not be included in Alabama's total output, because they were not performed within the state of Alabama. Therefore, because most individual state economies are not nearly as diverse as the U.S. economy as a whole, the state-level multipliers will be smaller than the national multipliers. On the other hand, as long as all of the services in any single transaction were performed by American companies and employees, they will be accounted for in the national economic impacts.

A second reason why national multipliers can be larger than their state-level counterparts is due to the problem of leakage. Upon retirement, not all workers continue to reside in their home states. When a pension beneficiary moves out of state, he takes his pension payments with him, spending his pension

checks in his new state of residence, rather than in the state where the pension payment originated. Depending on the level of analysis, such a move may be considered a leakage, because any income that is spent out of state is lost to the state of origin in terms of adding to total economic output, and therefore the value added, employment, and expenditure multiplier of the state of origin.

Since we are interested in assessing the economic impacts of state and local pension benefits nationally, we employ a novel approach that accounts for the fact that one state's "loss" is another state's "gain." That is, just as some retirees might leave Kentucky to move to other states, retirees from other states might also make the move to Kentucky. Clearly some states, such as those in the Sunbelt, might have more retirees come into the state than leave the state, while others might find the number of retirees leaving the state is greater than the number moving in. Using Census data on migration patterns of older households, we adjust for the net flows of retirees and their pension payments across state borders. In this way, we are able to estimate the economic impact of benefits spent by both retirees who reside within their state of origin as well as those retirees who move out of state. Retirees who live and therefore spend their income outside of their state of origin contribute to economic activity in their new state of residence. Accordingly, each state's total economic impacts consist of in-state impacts (attributable to pension payment expenditures originating in the state) and out-of-state impacts (attributable to pension expenditures originating from any of the other forty-nine states).

## RESULTS: ECONOMIC IMPACT OF STATE AND LOCAL PENSIONS BY STATE

The following series of charts and tables provide the key state-level results of the economic impact analysis. The average number of jobs in a single state supported by public pension plans in 2006 was 27,421 total jobs.

The average number of jobs in a single state supported by public pension plans in 2006 was 27,421 jobs. The average level of output was \$4.24 billion in total economic output, and the average level of total value added supported was \$1.94 billion per state.

Not surprisingly, the state of California—with the largest economy of the 50 states—showed the largest employment, output, and value added impacts, with 205,221 jobs, \$34.5 billion in output, and \$16.8 billion in value added supported by state and local pension benefit expenditures. But even in smaller states, the impacts of state and local pension benefits are significant.

Figures 5 and 6 present the pension expenditure multipliers and taxpayer investment factors for each state. Pension expenditure multipliers vary somewhat by state, but generally speaking, larger states and those with more diverse economic bases will have larger multipliers than smaller states and those with a more homogeneous economic base. These multipliers account for the impact of pension expenditures originating both from within the state and those pension dollars that originate from another state but are spent within the state in question.

In 2006, the average pension expenditure multiplier was 1.34, meaning that for every dollar paid out in pension benefits by a state or local pension plan, \$1.34 in total output was supported in a single state. The state with the largest pension expenditure multiplier was Illinois, with a total output multiplier of 1.50; again, this is to say that for every dollar in pension benefits paid out in Illinois, \$1.50 in total economic output was supported in that state.

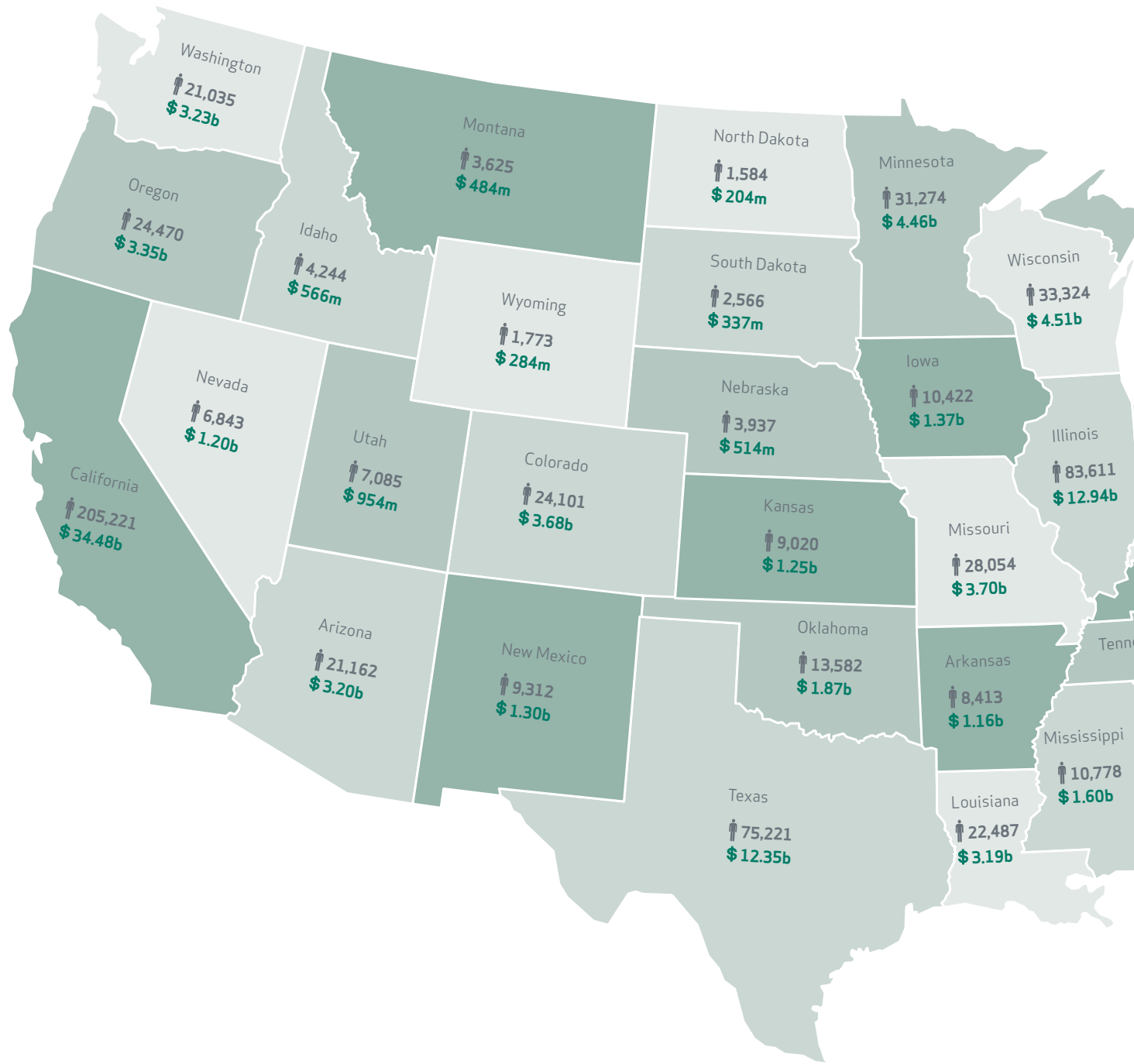
As is the case at the national level, the taxpayer investment factors for each state were much larger than the pension expenditure multipliers.

As mentioned previously, because state and local pension plans are pre-funded, only a small portion of the total pension payment in any given year are funded through taxpayer dollars. Therefore, we again calculate the total impact of state and local pension benefit expenditures that is attributable to the “taxpayer investment” in these plans, by state. In 2006, the average taxpayer investment factor was 6.69, meaning that for every dollar contributed by taxpayers in a single state, \$6.69 in total economic output was supported within that state, on average. The state with the largest taxpayer investment factor was South Dakota, at 12.49; again, this is to say that for every dollar contributed by taxpayers to South Dakota’s pension plans, \$12.49 in total economic output was supported in that state.

Note that caution should be used in interpreting the taxpayer investment factor for some states, due to the way the Census reports taxpayer and employee contributions. Because the Census data reflects the taxable status of contributions only, but not pre-tax salary reduction cost-sharing methods used in some states, employee contributions may be reported as taxpayer contributions. As a result, the taxpayer investment factors we report here will be underestimated for some states (e.g. Nevada).

In terms of tax revenue, state and local pensions supported an average of over \$259 million in state and local tax revenue and \$408 million in federal tax revenue in each state. Adding in corporate taxes, this means state and local pensions supported an average of over \$668 million in total tax revenue in 2006 in each state. The state with the highest tax revenue generated was again California, where public pension plans supported over \$3.5 billion in federal tax receipts and \$2.6 billion in state and local tax receipts, for a total contribution of close to \$6.1 billion in tax revenue in 2006.

Figure 4: **State and Local Pensions Support 2.5 Million Jobs and \$358.6 billion in Economic Activity**



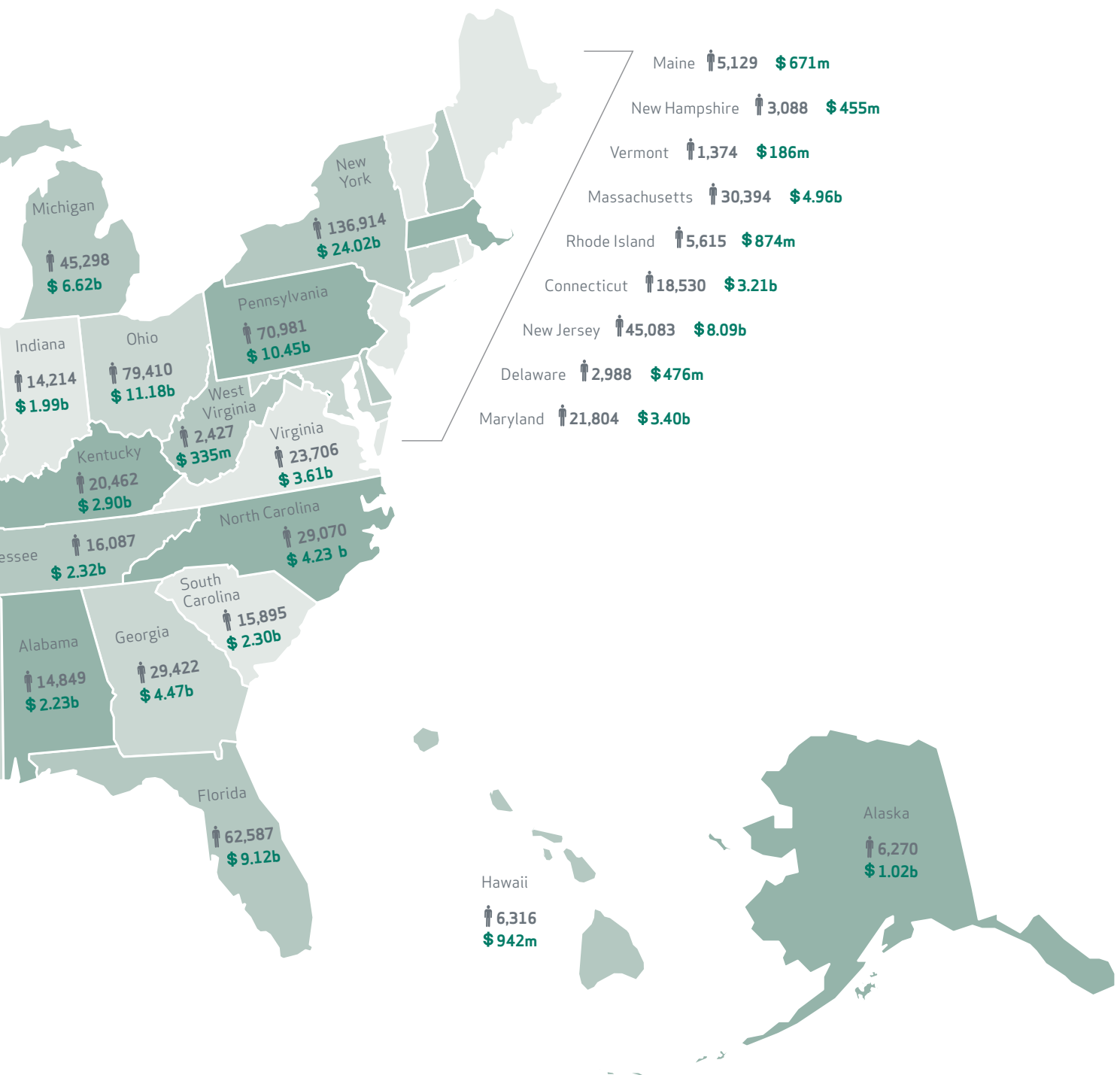


Table 6. Income and Value Added Impact by State (in \$ millions)

	Income	Value Added		Income	Value Added
Alabama	\$806.7	\$898.8	Montana	\$173.6	\$193.8
Alaska	385.2	430.7	Nebraska	191.9	213.2
Arizona	1,286.0	1,429.6	Nevada	442.1	496.4
Arkansas	410.7	457.8	New Hampshire	182.9	203.9
California	15,130.8	16,831.1	New Jersey	3,445.6	3,836.8
Colorado	1,524.5	1,699.8	New Mexico	474.3	529.7
Connecticut	1,394.4	1,552.6	New York	10,549.8	11,671.3
Delaware	182.8	203.0	North Carolina	1,623.4	1,815.3
Florida	3,772.3	4,200.4	North Dakota	71.4	79.6
Georgia	1,833.4	2,053.8	Ohio	4,280.9	4,726.5
Hawaii	372.3	416.0	Oklahoma	711.8	791.7
Idaho	203.2	227.4	Oregon	1,361.0	1,516.1
Illinois	5,547.6	6,149.3	Pennsylvania	4,412.1	4,888.7
Indiana	770.2	857.5	Rhode Island	336.5	371.5
Iowa	504.4	561.9	South Carolina	844.3	946.4
Kansas	471.7	526.2	South Dakota	125.8	140.9
Kentucky	1,054.7	1,173.0	Tennessee	962.3	1,067.7
Louisiana	1,145.0	1,277.0	Texas	4,907.6	5,495.7
Maine	257.9	286.5	Utah	381.5	426.3
Maryland	1,429.6	1,590.6	Vermont	70.2	78.0
Massachusetts	2,158.7	2,390.1	Virginia	1,421.1	1,584.7
Michigan	2,650.8	2,945.6	Washington	1,310.5	1,457.7
Minnesota	1,826.1	2,031.7	West Virginia	117.2	130.4
Mississippi	537.4	600.9	Wisconsin	1,737.9	1,932.2
Missouri	1,513.3	1,680.5	Wyoming	91.9	103.8



Table 7. Direct, Indirect, and Induced Output Impacts by State

Output Supported (in \$millions)				
	Direct	Indirect	Induced	Total
Alabama	\$1,675.5	\$271.0	\$288.2	\$2,234.6
Alaska	790.8	120.4	112.8	1,024.1
Arizona	2,258.2	444.9	499.0	3,202.1
Arkansas	863.4	147.2	151.2	1,161.8
California	22,348.2	5,874.2	6,253.9	34,476.2
Colorado	2,458.6	615.8	604.2	3,678.7
Connecticut	2,295.3	409.5	502.4	3,207.2
Delaware	365.7	52.0	58.7	476.4
Florida	6,247.5	1,326.5	1,545.2	9,119.2
Georgia	3,088.9	669.6	709.4	4,467.9
Hawaii	696.2	115.6	129.8	941.6
Idaho	422.1	73.0	70.8	565.9
Illinois	8,321.0	2,221.3	2,400.4	12,942.7
Indiana	1,392.0	287.4	308.0	1,987.4
Iowa	1,005.4	177.6	187.2	1,370.2
Kansas	896.1	175.0	179.1	1,250.2
Kentucky	2,143.3	365.4	390.8	2,899.5
Louisiana	2,352.2	403.2	435.1	3,190.4
Maine	495.5	76.8	99.4	671.7
Maryland	2,405.5	470.4	526.9	3,402.9
Massachusetts	3,368.2	720.9	870.7	4,959.8
Michigan	4,645.2	962.5	1,010.9	6,618.5
Minnesota	2,941.9	751.0	765.0	4,457.8
Mississippi	1,220.8	183.4	193.3	1,597.6
Missouri	2,434.3	605.6	661.3	3,701.2

Output Supported (in \$millions)				
	Direct	Indirect	Induced	Total
Montana	\$364.4	\$59.2	\$60.1	483.7
Nebraska	368.1	72.0	74.1	514.2
Nevada	938.7	128.3	136.1	1,203.1
New Hampshire	328.0	57.2	69.4	454.6
New Jersey	5,628.1	1,191.7	1,265.7	8,085.5
New Mexico	943.4	184.6	176.1	1,304.07
New York	16,402.9	3,653.6	3,963.5	24,019.9
North Carolina	3,030.9	579.2	615.5	4,225.58
North Dakota	157.3	23.8	22.7	203.83
Ohio	8,009.9	1,561.2	1,613.0	11,184.2
Oklahoma	1,318.0	282.5	273.2	1,873.7
Oregon	2,303.7	513.6	529.1	3,346.4
Pennsylvania	6,765.7	1,738.0	1,949.0	10,452.7
Rhode Island	666.0	92.1	115.8	873.9
South Carolina	1,732.7	272.3	296.3	2,301.4
South Dakota	246.4	43.3	46.9	336.6
Tennessee	1,563.2	337.5	417.3	2,318.0
Texas	8,291.8	2,104.9	1,951.1	12,347.7
Utah	631.9	164.5	157.1	953.5
Vermont	140.4	20.6	25.5	186.4
Virginia	2,599.0	499.1	514.4	3,612.5
Washington	2,271.2	472.1	491.5	3,234.8
West Virginia	254.2	40.6	40.5	335.3
Wisconsin	3,203.9	625.2	677.6	4,506.8
Wyoming	227.9	31.2	25.2	284.3

Figure 5: Pension Expenditure Multipliers by State

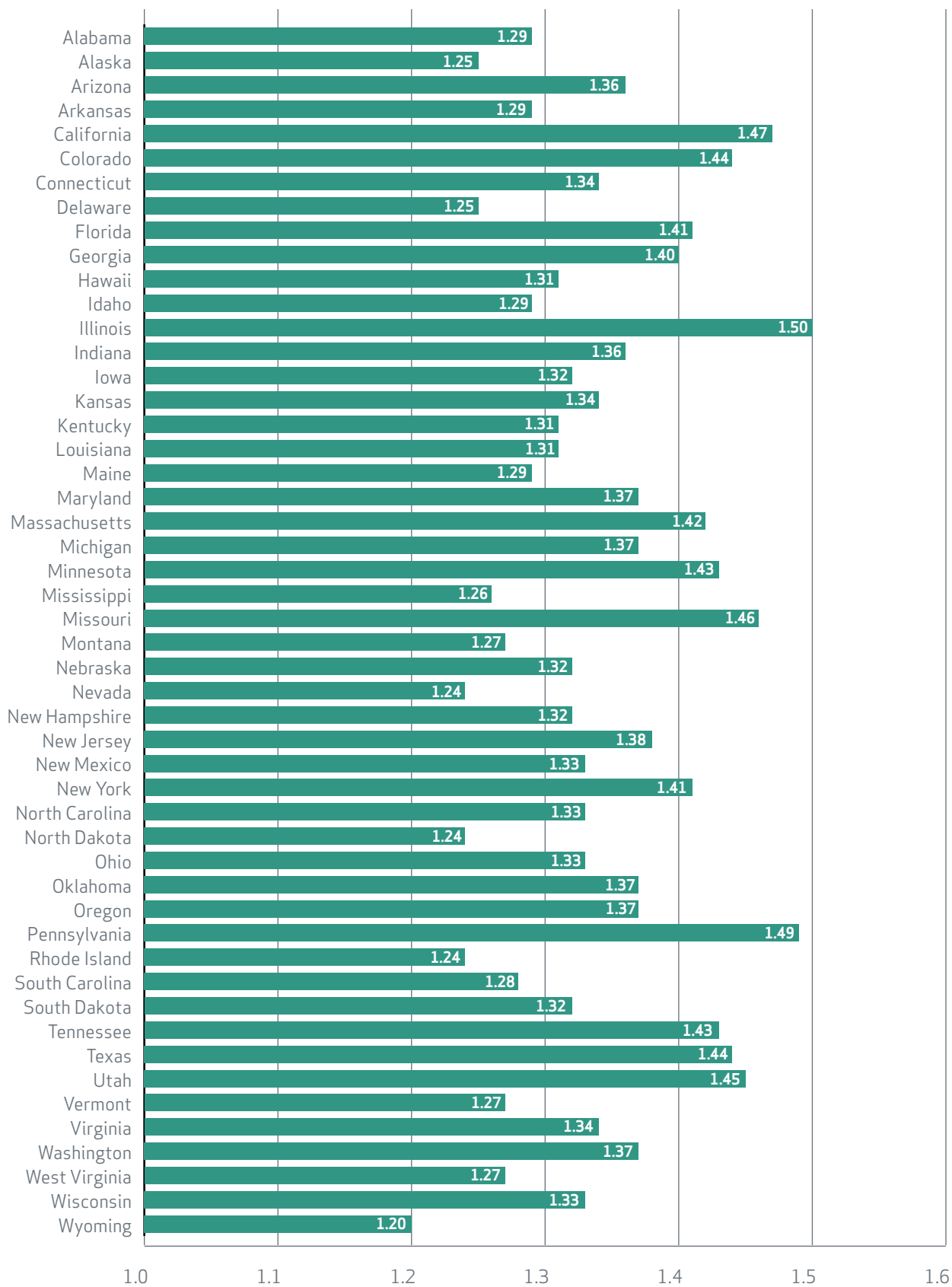


Figure 6: Taxpayer Investment Factors by State

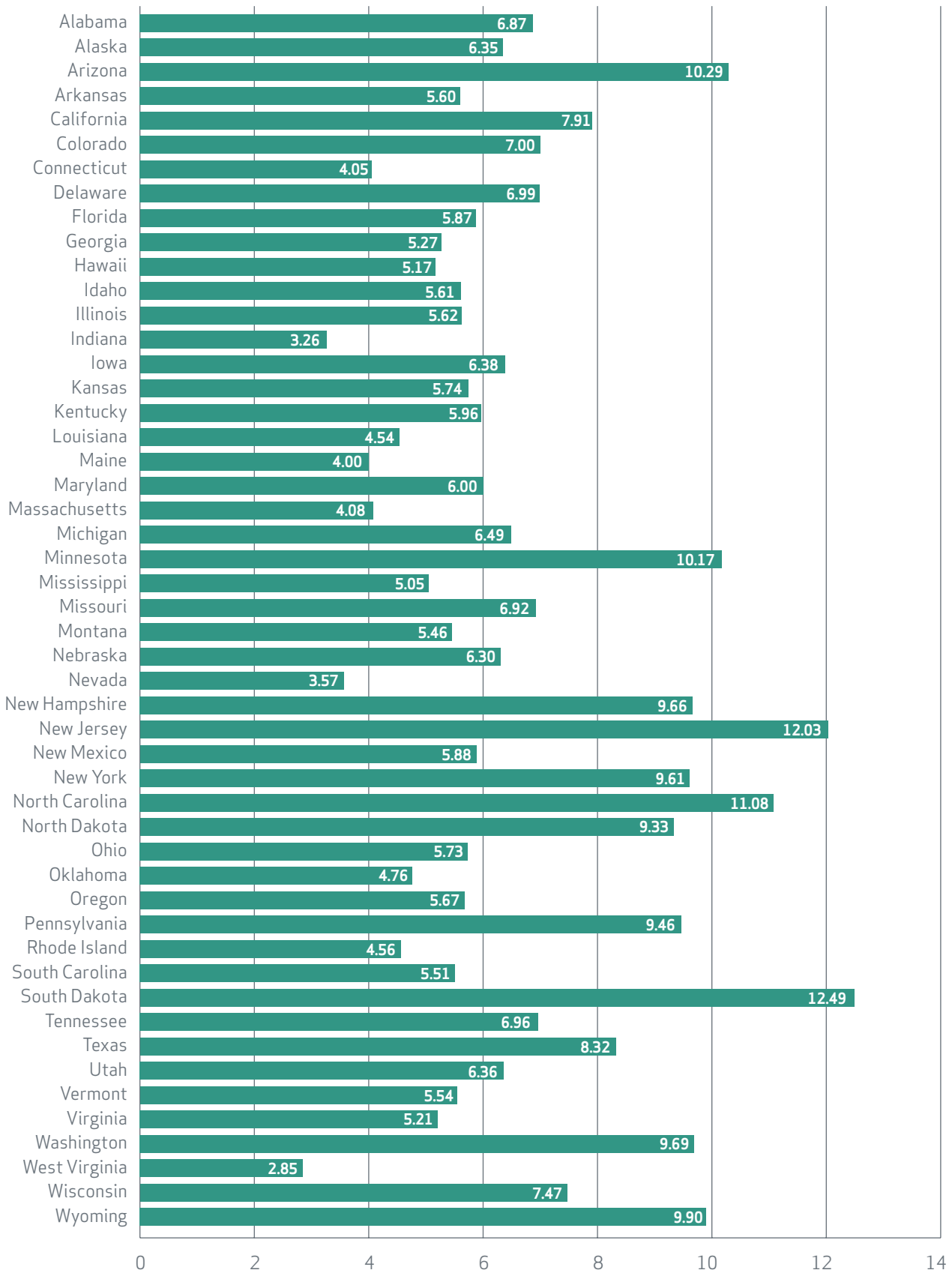


Table 8. Tax Impacts by State (in millions of dollars)

	State/ Local	Federal	Total*		State/ Local	Federal	Total*
Alabama	\$101.1	\$190.3	\$291.9	Montana	\$26.7	\$41.9	\$68.7
Alaska	67.8	87.5	155.5	Nebraska	31.4	43.8	75.3
Arizona	180.3	302.1	483.1	Nevada	14.5	54.5	69.1
Arkansas	63.6	95.3	159.1	New Hampshire	26.6	45.5	72.2
California	2,604.9	3,477.1	6,090.0	New Jersey	472.1	832.0	1,306.0
Colorado	194.8	353.4	549.0	New Mexico	72.9	103.5	176.7
Connecticut	207.6	354.4	562.8	New York	1,653.9	2,417.1	4,076.8
Delaware	26.3	44.5	70.9	North Carolina	453.8	619.3	1,074.7
Florida	450.3	895.8	1,348.3	North Dakota	10.1	16.9	27.0
Georgia	246.4	415.9	663.2	Ohio	702.5	965.1	1,670.0
Hawaii	53.2	84.7	138.1	Oklahoma	91.2	161.1	252.6
Idaho	28.5	47.7	76.3	Oregon	246.9	320.9	568.5
Illinois	706.0	1,277.0	1,986.1	Pennsylvania	564.3	1,002.1	1,568.8
Indiana	121.8	174.8	297.0	Rhode Island	58.6	82.2	141.0
Iowa	66.3	116.3	182.9	South Carolina	119.1	197.6	317.1
Kansas	62.5	109.1	171.8	South Dakota	15.6	27.5	43.2
Kentucky	142.1	246.0	388.7	Tennessee	108.7	210.0	319.2
Louisiana	154.1	251.3	406.1	Texas	563.6	1,119.4	1,685.4
Maine	43.1	59.2	102.5	Utah	52.2	85.7	138.1
Maryland	201.7	336.2	538.7	Vermont	11.1	16.8	27.9
Massachusetts	291.0	520.4	812.6	Virginia	196.7	345.4	542.8
Michigan	363.4	604.6	969.5	Washington	149.2	312.9	462.9
Minnesota	307.9	429.3	738.3	West Virginia	18.1	28.6	46.8
Mississippi	77.6	122.1	199.9	Wisconsin	326.7	404.9	732.6
Missouri	202.4	336.8	540.1	Wyoming	12.5	23.2	35.7

\*Totals may not add up exactly due to other corporate transfer taxes included in the totals but not separated out into federal and state level allocations by IMPLAN.

State and local pension plans provide a critical source of reliable income for more than 7 million retired Americans. These plans are a cost-effective way to provide broad-based coverage, secure money for retirement, a lifetime income, and economic protections for spouses for our nation's police officers, firefighters, schoolteachers, and other public servants.

But the economic impact of state and local government pension plans reaches well beyond those who earned benefits in these plans during their working years. Because these funds supply secure income to retirees, they provide local economies with stable sources of revenue. Retirees are able to spend their paychecks regularly and without hesitation in their local economies, no matter what the state of the rest of the economy may be, thus providing a boost to local business revenues and local workers' incomes.

These economic gains are quantifiable. Nationwide, state and local pension benefit expenditures supported more than 2.5 million American jobs, and over \$148.8 billion in income paid to other Americans in 2006. Close to \$360 billion in total economic output in the U.S. was attributable to state and local pension benefits in that year. Benefits paid by state and local pension supported over \$57 billion in tax revenue at the local, state, and federal levels.

In supplying a stable source of income to retirees, state and local pension plans support the national economy, as well as local economies throughout the country, with jobs, incomes, and tax revenue. Especially in these times of financial crisis and economic instability, public pension plans play an important role in providing a stable, reliable source of income not just for retired public servants, but also for the local economies in which their retirement checks are spent—and therefore the national economy as well.



### Census Data

Pension benefit payments, both on the national and statewide levels, were taken from the U.S. Census Bureau's State and Local Government Employee-Retirement System survey, which reports on state and local government-sponsored defined benefit pension plans in the United States. The Census provides data on revenues, expenditures, financial assets, and membership in public employee retirement systems.<sup>15</sup> Census aggregates plan level data up to the state level, and these state-level estimates are based on a representative sample of retirement systems throughout the country, weighted for accuracy. (Technical Documentation can be found at: <http://www.census.gov/govs/www/retiretechdoc.html>.) Data for 2006 was used, as that was the most recent data available, which also corresponded nicely with IMPLAN sector data, for which 2006 data was also most recent.

### Migration/Leakage

Upon retirement, not all public sector workers continue to reside in their home states. When a pension beneficiary moves out of state, he takes his pension payments with him, spending his pension checks in his new state of residence, rather than in the state where the pension payment originated. Depending on the level of analysis, such a move may be considered a leakage, because any income that is spent out of state is lost to the state of origin in terms of adding to total economic output, and therefore the value added, employment, and expenditure multiplier of the state of origin. Of course, one state's "leakage" is another state's inflow, and since our analysis is concerned with measuring the "economic footprint" of state and local pension benefits, regardless of their community or state of origin or destination, we need to account for the movement of retirees from one state to another. To estimate the effects of retiree movement across state borders, we use the 2000 Census' Migration by Sex and Age for the Population 65 Years and Over for the United States, Regions, States, and Puerto Rico: 2000. Specifically, Table 6: State of Residence in 2000 by State of Residence in 1995 for the Population 65 Years and Over: 2000, was used to determine the percentage of people aged 65 and

older who have moved from one state to any other between 1995 and 2000.<sup>16</sup> We assume that these patterns have not changed since 2000, and that migration patterns for state and local government retirees mirror those of all other older Americans.

### Disposable Income and Taxation

Household income data in IMPLAN is assumed to be disposable income; that is, IMPLAN assumes that every dollar inputted into the model is spent in the local economy. Therefore, before calculating the economic impacts of pension benefit payments, it is necessary to account for any and all taxes that are paid out of pension benefit payments. By subtracting income taxes from gross pension payments, we calculate disposable income in order to avoid over-estimating the economic impacts of state and local government plans.

To this end, data from the Congressional Budget Office on effective federal income tax rates for elderly households in the United States by income quintiles is used to estimate federal income taxes due from state and local pension income.<sup>17</sup> Effective tax rates are different from marginal tax rates in that effective tax rates account for all tax deductions, credits, or other alterations that may change the total amount of the tax that any individual actually pays. This is more useful to our purposes, because, since we are using aggregated sample data, we cannot assess actual individuals' federal tax liabilities. The effective tax rate allows us to more accurately estimate the taxes that pension beneficiaries actually pay to the federal government.

State income taxes are estimated using rates reported in a study entitled *State Income Tax Treatment of the Elderly*, by Barbara Edwards and Sally Wallace, which calculates the effective tax rate for median income elderly households by state.<sup>18</sup> From this percentage, information from the National Conference of State Legislatures<sup>19</sup> is used to account for any public pension exclusions a state may provide. State income tax exclusions are important to consider, because many states offer full or partial income tax exclusions for pension benefits. Just as we do not wish to overestimate the economic impacts of pension

benefit expenditures by not accounting for tax withholdings, nor do we wish to underestimate them by assuming that taxes are being withheld when in fact they are not.

A simplifying assumption is made that out of state benefits are taxed at the same in state pension rate, and that beneficiaries are taxed by the state of residence, not the state of the pension's origin. For example, a retiree moving from New York to Florida would pay Florida income taxes on her pension benefit, not New York taxes. Similarly, for states such as Alabama, which offer full pension exclusions, it is assumed that out of state pensions are excluded as well. The one exception to this is the state of Kansas, which offers full exclusion for in state, but no exclusion for out of state pension benefits. If any retirees, for some reason, are still paying income taxes to the state of the pension's origin, and not their current state of residence, our results may be over- or underestimated, depending on the tax codes of the states in question. For example, if a retiree is assumed to be paying taxes in a state with a full pension exclusion but is in fact paying taxes in a state with no exclusion, our output, employment, and value added results will be overestimated, as that retiree has less disposable income to spend than we assume. Should the opposite case occur—where a retiree is assumed to have no tax exclusion but is in fact paying taxes to a state with a full exclusion—our results will be underestimated, because we are assuming less disposable income for that retiree. On an aggregate, net basis, we have no reason to believe there is a bias in either direction.

## IMPLAN Modeling

This study uses IMPLAN, an input-output modeling software, to measure the economic impacts of benefits paid by state and local government pension plans. IMPLAN was first developed in the 1970s as a part of a USDA Forest Service project to analyze the economic effects of local land management projects such as timber, mining, and recreation activities. Since that time, IMPLAN has been used by industry and government analysts throughout the country to assess economic impacts of highly varied local community development projects; these studies include many recent economic impact studies of pension benefit payments. Because of differences in modeling and the data used, the results of our study may not be comparable with these other analyses. Thus, the reader should avoid drawing conclusions based on comparisons between our results and those of other studies.

IMPLAN is an input-output model that uses a matrix to represent the economy of a region in order to estimate the effect of events occurring in a single industry or institution on all other industries, as well as consumers, government, and foreign suppliers to the economy. IMPLAN uses a Social Accounting Matrix (SAM), which captures all the industry and institution transactions in the local area; subsections of a SAM describe various structures and functions of a local economy. The SAM describes a local economy in terms of the flow of dollars from purchasers to producers within a region, while also accounting for non-industrial transactions such as payment of taxes by businesses and households. This offers a better portrayal of the household income effect portion of local economic events than other models.

For this study, each state's aggregated, in-state, disposable pension payments are inputted into IMPLAN as direct payments to households. The household income range used is based on the median household income among heads of household age 65 and older for that state, taken from the 2006 American Community Survey of the U.S. Census.<sup>20</sup>

Benefits that are sent out of state are assumed to be spent in the state to which they are sent. Therefore, each state's economic impact includes out of state benefit payments from each of the forty-nine other states. These out of state benefits are calculated, for a single state, based on the same migration assumptions described above. All forty-nine states' payments are summed together, and tax withholdings are subtracted. These net payments are then added to the IMPLAN model to calculate the aggregate out of state pension benefit impacts for that single state.

## Tax Revenue

To calculate total tax revenue attributable to state and local pension payments, income taxes paid by beneficiaries on benefit payments are added to taxes paid in all subsequent rounds of spending. For the former, the federal and state and taxes are calculated as described above. For the latter, IMPLAN calculates all corporate, personal income, and business taxes that are attributable to each spending round – direct, indirect, and induced expenditures. Total tax revenue is the sum of these two figures, calculated for both in state and out of state benefits.



## Multipliers

Multipliers are ratios that relate the overall economic effect to a single unit of any initial event. An output multiplier, for example, displays the total output generated for every dollar that is initially spent in a local economy. We calculate a pension expenditure multiplier, which describes the impact on total output for each dollar paid out in pension benefits by a state or local plan. For example, a pension expenditure multiplier of 2.2 would mean that for every \$1 paid out in a pension benefit, \$2.20 of total economic output is supported in the local economy.

Pension expenditure multipliers are calculated by dividing the total output supported by retiree expenditures by total pension payments made by state or local governments in that year. (For the state-level multipliers, this includes pension payments originating within the state as well as outside of the state.)

We also calculate “taxpayer investment factors” at the national and state levels. This measurement is designed to capture a sense of “return on investment” for each dollar contributed in taxpayer contributions to state and local plans, following the methodology developed by Fountain and Waste (2007). First, we proxy the proportion of benefits paid out today in 2006 that were attributable to taxpayer contributions. We do this by calculating (both nationally and for each state), the proportion of total state and local pension plan revenues that are attributable to taxpayer contributions over the period 1992 through 2006. We then multiply this percentage by the benefits paid by state and local pension plans (again at the national or state level) in 2006. This becomes the denominator for our taxpayer contribution factor. The numerator is the total output supported by retiree expenditures in 2006.

Note that caution should be used in interpreting the taxpayer investment factor for some states, due to the way the Census reports taxpayer and employee contributions. Because the Census data reflects the taxable status of contributions only, but not pre-tax salary reduction cost-sharing methods used in some states (Nevada, for example), employee contributions may be reported as taxpayer contributions. This will tend to overstate the proportion of pension benefits that are attributable to taxpayer contributions and understate the taxpayer investment factors we report.

## ENDNOTES

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