4-2020

Earning, Taxing, Spending, Saving: Tracking South Dakota Incomes

Matthew Berg
South Dakota State University

Earning, Taxing, Spending, Saving: Tracking South Dakota Incomes

Matthew Berg

Introduction

The rurality and relative homogeneity of Midwestern states often yield various blanket perceptions about its populace. South Dakota, in particular, is often depicted as one of the least diverse states in America. This prompts many questions about the state's culture and the behavior of its inhabitants. An area of particular interest is personal consumption and investment. Surely, a state as homogeneous as its reputation suggests would yield unexciting answers in this regard. An individual's spending and saving behavior is a function of several factors unique to that person. Perhaps most influential is the amount of discretionary income available to that individual. Discretionary income has historically been calculated by determining gross income and subtracting taxes paid and fixed expenditures such as rents, utilities, and loan payments. This paper intends to highlight the differences in 2016 incomes, tax burdens, consumption, and investments across the sixty-six South Dakota counties and among various levels of income.

Methodology

To facilitate a proper cross-sectional analysis of South Dakota incomes and expenditures, some form of grouping system must be used for examining each county. The system I will use in this discussion will follow the county distinctions created by the Economic Research Service, an agency of the United States Department of Agriculture ("2013 Rural-Urban Continuum Codes", 2013). Using this system, counties are divided into two categories, those with and without metropolitan areas. Each group has multiple subdivisions, but because South Dakota only has eight metropolitan counties, I will only use the subdivisions for nonmetropolitan counties. These counties have three subdivisions that are contingent upon the urban population of those counties. Counties with more than 20,000 people living in an urban environment are one group, counties with that number being between 2,500 and 19,999 are a group, and counties with an urban population of less than 2,500 are another group. To simplify these categories, I will refer to the first group as "Large Urban Center" counties, to the second group as "Small Urban Center" counties, and to the third group as "Rural" counties. A map of these counties is shown below in Figure 1.

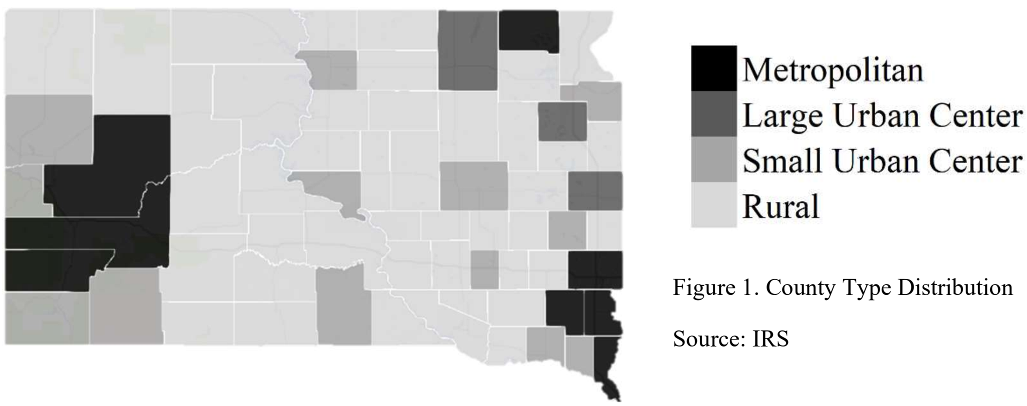


Figure 1. County Type Distribution

Source: IRS

To analyze and compare behavior and spending across different incomes, I will use income ranges created by the Internal Revenue Service (IRS). These are based on a taxpayer's Adjusted Gross Income, which consists of a household's gross income for the year less a few deductions such as retirement account contributions and alimony payments. It is a common measure of a household's take-home pay. The ranges set by the IRS are as follows: less than \$1, \$1 to \$10,000, \$10,000 to \$25,000, \$25,000 to \$50,000, \$50,000 to \$100,000, \$100,000 to \$200,000, and over \$200,000. These income categories will provide another framework for analyzing the behavior and distribution of households in South Dakota.

Income

In order to understand where South Dakota incomes are being directed, it is useful to include a discussion of where the money is coming from. To accomplish this, we must first look at the characteristics and demographics of South Dakota citizens, particularly with regard to their earning potential. The state of South Dakota had an incarceration rate of about one percent in 2016 (“Incarceration”, 2017). This number was led by nonmetropolitan counties with a small urban center, as shown in Figure 2. This is an important distinction to make, as each “per capita” value presented from here on is based on the entire population in each county, including incarcerated people. Thus, the statewide per capita values will be slightly understated, and more so in nonmetropolitan counties with small urban centers.

Metropolitan 0.88%
Large Urban Center 0.79%
Small Urban Center 1.48%
Rural 0.87%
Overall 0.99%

Figure 2

2016 South Dakota Incarceration Rates

Source: The Opportunity Atlas

Another important population statistic that affects income is rates of entrepreneurship. I measured this by finding the percentage of the population in each county that filed their 2016 tax return with a Schedule C attached. Schedule C is how individuals report self-employment income and deductions, so it is safe to assume that data from this form are representative of South Dakota entrepreneurship. Overall, about 7.74% percent of South Dakotans owned a business of some kind in 2016 (“SOI Tax Stats”, 2020). This number was slightly higher in frontier counties and much higher in metropolitan counties, as shown in Figure 3. South Dakota

Metropolitan 7.97%
Large Urban Center 7.10%
Small Urban Center 7.61%
Rural 7.74%
Overall 7.74%

Figure 3

2016 Entrepreneurship Rates

Source: Internal Revenue Service

was slightly less entrepreneurial than the United States overall, which had a rate of about 7.81% in 2016 (“SOI Tax Stats”, 2020). The business ownership rate was slightly above its surrounding states (Montana, North Dakota, Minnesota, Iowa, Nebraska, and Wyoming), which had an average rate of about 7.10% (“SOI Tax Stats”, 2020). In addition, when the data are mapped out across different income levels, a new pattern arises. When compared with total income per capita, as I will discuss later, South Dakota business owners earned considerably more than the state average income per capita. Over 52% of these entrepreneurs earned over $50,000 a year, while only about 38% of the state’s population earned more than $50,000 a year (“SOI Tax Stats”, 2020). Figure 4 shows the spread of business owners over different income levels. Nationally, only just over 42% of entrepreneurs earned over $50,000 (“SOI Tax Stats”, 2020).

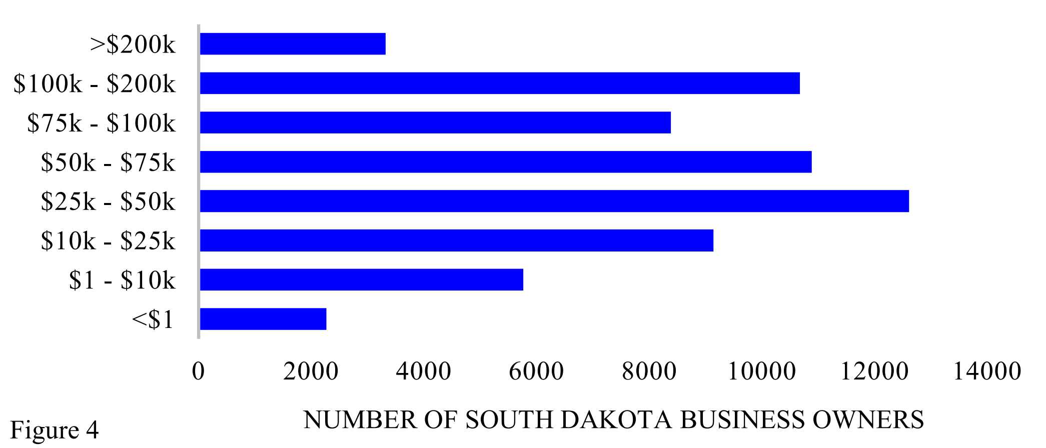


Figure 4

Source: Internal Revenue Service

That number increases to under 53% for South Dakota's surrounding states. Thus, South Dakota business owners, and business owners in similar states, are much more productive on average than the typical entrepreneur in the United States.

Farm ownership rates can be determined in a similar fashion, this time from Schedule F data. Individuals report income and deductions from farming activities on this form. South Dakota is often perceived as a state that runs on agriculture. This stereotype is upheld by 2016 tax data, which shows that about 3.84% of the South Dakota population owned some form of a farming operation, compared to the national average rate of 0.57% ("SOI Tax Stats", 2020). This number was similar across counties with moderate to large populations but jumped to over ten percent in rural counties, as can be expected. This disparity can be seen in Figure 5. South Dakota farm ownership levels were also far above its surrounding states, which had an average overall farm ownership rate of about 1.91% in 2016 ("SOI Tax Stats", 2020). When spread over different levels of income, the distribution of farm income resembled that of business income. About 51.3% of South Dakota farmers earned over $50,000, similar to the 52% of business owners ("SOI Tax Stats", 2020). However, one key difference separated the two groups. About 12.5% of South Dakota farmers reported a negative income for 2016, compared to just 3.6% of business owners ("SOI Tax Stats", 2020). This distribution can be observed in Figure 6.

Figure 5

2016 Farm Ownership Rates

Metropolitan 1.64%
Large Urban Center 3.22%
Small Urban Center 3.57%
Rural 9.42%
Overall 3.84%

Source: Internal Revenue Service

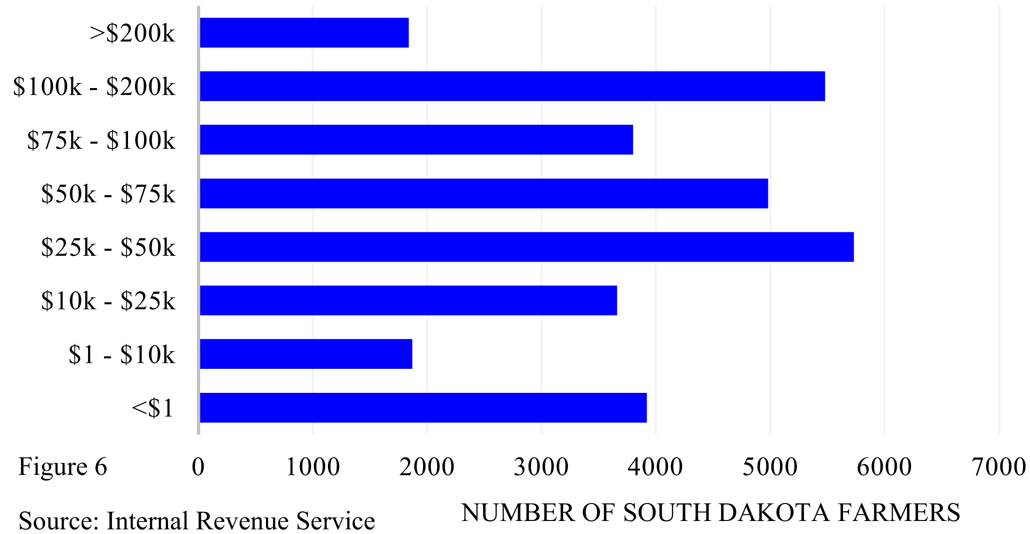


Figure 6

Source: Internal Revenue Service

Total income for an individual can be found on lines 22, 15, or 4 on 2016 tax returns, depending on which version of Form 1040 was filed. This number accounts for all salary, business, investment, and farm income. The only deductions that are included in this figure are expenses or losses that are incurred in the production of income and thus reasonable to include in determining an individual's total income for the year. All deductible personal expenses are reported after this value. Using data on this figure, I determined that the average individual income for South Dakota residents was $32,127 in 2016 ("SOI Tax Stats", 2020). However, this figure was higher in metropolitan counties and lower in nonmetropolitan counties, as is shown in Figure 7. The total income per capita of the entire United States in 2016 was about $32,011, making South Dakota slightly above average in this regard ("SOI Tax Stats", 2020). But South

Metropolitan $39,905
Large Urban Center $30,293
Small Urban Center $26,756
Rural $21,300
Overall $32,127

Figure 7

2016 Total Income (per capita)

Source: Internal Revenue Service

Dakota was slightly below average when compared to surrounding states, where the average individual income was $32,244. In addition, these data show that about 26% of South Dakotans earned between $25,000 and $50,000 in 2016. Sixty-two percent made less than $50,000 and 38% made more than $50,000 ("SOI Tax Stats", 2020). This spread is portrayed in Figure 8. In the surrounding states, about 57% of the population on average made less than $50,000 in 2016. Nationally, about 60.7% of the population made less than $50,000 ("SOI Tax Stats", 2020). Thus, South Dakota is about on par with the rest of the nation, but slightly behind its bordering states in terms of income.

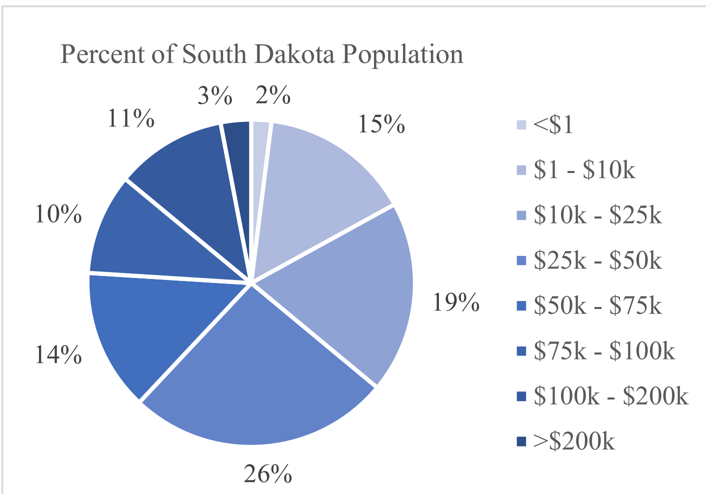


Figure 8

2016 Earnings Distribution

Source: Internal Revenue Service

Taxes

The only truly uncontrollable expense for an individual is their tax payments. That being said, South Dakota is positioned as one of the most tax-friendly states in the United States, and the tax burden has actually trended slightly downward in recent years. South Dakota currently has close to the lowest tax burden in the nation, second only to Alaska (Stebbins, 2018). But this figure accounts for taxes of all forms. The three primary categories of taxes are classified in terms of their origin and control: federal, state, and local. The taxes at each level come in various forms and their rates are independently set. At the federal level, individuals are primarily subject to income, excise, estate, and payroll taxes. An estate tax is a single event that doesn't factor into an individual's budgeting and is thus not included in this study. And while payroll taxes are large expenditures for individuals, they will someday receive specified and direct monetary benefits in return. For this reason, payroll taxes are often considered a form of investment among economists and policymakers. Thus, they are not accounted for in this study.

In 2016, South Dakotans paid about $3.68 billion in federal taxes ("SOI Tax Stats", 2020). This equates to about $4,520 per person. As shown in Figure 9, individuals in highly populated counties paid more taxes than those in less populated counties. Similar differences are

Figure 9

2016 Federal Taxes (per capita)

Metropolitan $5,971
Large Urban Center $4,148
Small Urban Center $3,352
Rural $2,693
Overall $4,520

Source: Internal Revenue Service

observed for incomes between the county groupings, as can be expected. In addition, South Dakotans paid more in federal taxes on average than individuals in the surrounding states but less than the national average. The average for the surrounding states was about $4,384 and the national average was about $4,726 ("SOI Tax Stats", 2020). This pattern is the opposite of the income figures noted above, where the individuals in surrounding states earned more than South Dakotans, who in turn earned more than the national average. But these numbers are within a few hundred dollars, so small differences in deductions can be expected to explain this discrepancy.

Another important note to add is on transfer payments. These are payments made from the federal government to either the state or South Dakota individuals. Transfer payments include Social Security payments, federal grants, and, for the purpose of this agricultural payments. About one-third of the state of South Dakota's expenditures are funded by federal dollars allocated to the state ("Federal Grant Funds", 2019). In effect, these payments are a return on our investment in the federal government through federal taxes. Much research has been done on the relationship between taxes paid and transfer payments received. Historically, South Dakota has received more from the federal government each year than the amount of taxes paid (Shultz, 2019). However, the difference between the two amounts has been steadily shrinking ("Federal Grant Funds", 2019). In 2016, South Dakota actually had a "deficit" such that the state only received ninety-eight cents for every dollar paid in federal taxes ("New York", 2017). This is slightly more than the average of the states surrounding South Dakota but much less than the nation as a whole ("New York", 2017). The Rockefeller Institute estimates that in 2017, South Dakotans received $1.15 for each dollar paid in taxes, largely due to an increase in overall federal spending compared to overall revenue from taxes (Shultz, 2019). This places South Dakota in the lower third of states in terms of money received per tax dollar.

South Dakota does not have a state income tax, but it imposes sales, use, and excise taxes, along with various other specific taxes. The total amount of tax revenues received by the state averages about $1.3 billion per year ("South Dakota Single Audit Report", 2018). This means that each person in South Dakota pays about $1,600 in taxes on average to the state's Department of Revenue. In addition, South Dakotans paid about $1,874 on average in 2016 to local municipalities: $1,394 for property taxes and $480 for sales and use taxes ("Property Tax", 2019). Thus, the total average tax burden, to all taxing agencies, can be estimated to have been about $8,000 in 2016. Individuals' tax payments in metropolitan counties exceeded this amount and those in nonmetropolitan counties paid less than the average amount, as shown in Figure 10.

Given this information, the calculated average effective tax rate for South Dakota in 2016 was about 24.9%, a quarter of each dollar earned. Data are unavailable for sales and property tax payments across different levels of income, but we can logically infer that individuals with higher incomes likely paid more of these taxes during the year than lower-income individuals, if only due to their additional purchasing power. Thus, some South Dakotans would have paid a bit more than a quarter of their total income, while others paid a bit less.

Metropolitan $9,936
Large Urban Center $7,543
Small Urban Center $6,662
Rural $5,304
Overall $8,000

Figure 10

2016 Total Tax Burden (per capita)

Source: Internal Revenue Service

Disposable Income

What's leftover when taxes are taken out of an individual's income is their disposable income. The amounts for each county type are shown in Figure 11. In 2016, the average

Metropolitan $29,969
Large Urban Center $22,750
Small Urban Center $20,094
Rural $15,996
Overall $24,127

Figure 11

2016 Average Disposable Income

Source: Internal Revenue Service

disposable income per capita was about $27,606, calculated by simply subtracting the average tax burden from the total income per capita. Although a person generally has control over where they spend their money, some expenses are unavoidable. These fixed expenditures are different for every household but can include loan payments, rent and utilities, insurance premiums, and medical expenses. According to the Bureau of Economic Analysis, South Dakota residents paid about $6,168 on average for rent and/or utilities in 2016 (2019). In addition, they paid about $8,909 on average for healthcare expenses and $4,834 for insurance, interest on loan payments, and other financial services costs. An important note here is that the principal amount within a loan payment is not considered in this category of expenses. This is because this is an investment outlay, not an expense, and the current information on this statistic is incomplete. The total amount of fixed expenditures for South Dakota residents, then, is about $19,911 per person. People in surrounding states pay considerably less, only about $17,034 per person ("GDP", 2019). However, average rent and utility costs are typically higher in these states. Across the United States, the total fixed costs amount to about $16,985 per person, significantly less than in South Dakota ("GDP", 2019). However, South Dakotans pay about one thousand dollars less per person on housing and utility expenses, meaning that they spend much more per capita on insurance, financial services, and healthcare than the rest of the country. This may be due to the demographics of South Dakota, as the state has a higher average age than the rest of the United States ("South Dakota Singe Audit Report", 2018). As people grow older, their healthcare costs and insurance premiums tend to increase drastically, which can eat away at an individual's disposable income.

Discretionary Income

A 2008 study asked random individuals how they would allocate a tax-free gift of $2,000 (Dolnicar). On average, people indicated that they would allocate the most money towards paying off debt, followed by taking a vacation and investing. Entertainment and leisure were given relatively low amounts of money. Today, most workers live paycheck to paycheck. This makes the allocation of one's income intensely important. In more ways than one, the money that a person brings in and subsequently spends defines how that person's life is lived. In South Dakota, the average person has about $735 in discretionary income each month ("SOI Tax Stats", 2020). This amount can be spent in two ways: for today and for tomorrow. A today expense would include groceries, entertainment, and household expenses. A tomorrow expenditure would include buying securities, setting up an emergency fund, or investing in tangible assets. According to the study mentioned above, most people would rather spend for today than for tomorrow, which explains in part why so many people struggle with money.

Investing behavior is an essential aspect of an individual's discretionary income. Investing is a vital form of bolstering the economy and actively participating in the nation's growth. To determine the extent to which people invest, I analyzed their tax returns. Approaches to investment are revealed in a few different ways on a tax return. The first is through Schedule D, Capital Gains and Losses. This is where people report income or losses from the buying and selling of most assets, including securities, property, collectibles, and any other nonbusiness asset that can be bought as an investment. Based on IRS data, about 10.1% of South Dakotans filed a Schedule D in 2016, and thus sold or otherwise disposed of an investment (2020). This is much higher than the broader United States, of which only about 7.5% of people filed a Schedule

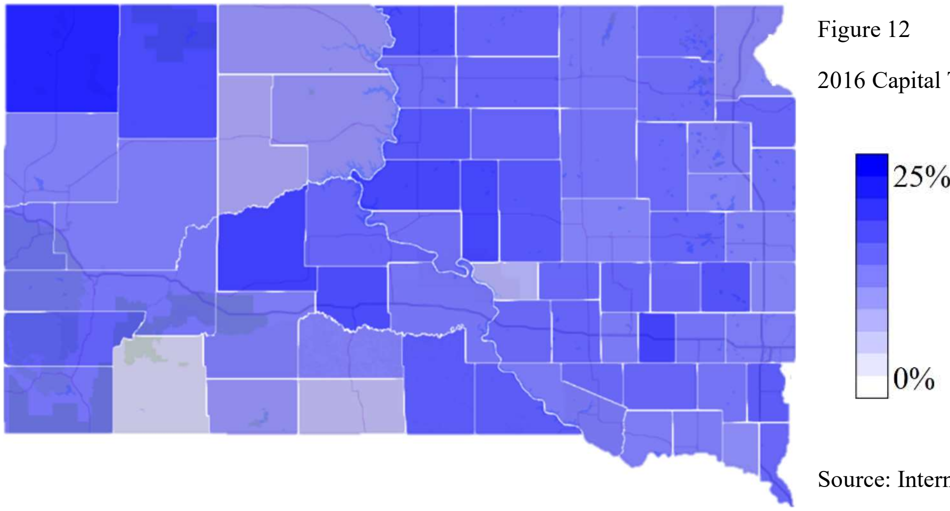


Figure 12

2016 Capital Transaction Distribution

Source: Internal Revenue Service

D, and slightly higher than the average of 9.2% for the states surrounding South Dakota ("SOI Tax Stats", 2020). A comparison across South Dakota county categories shows that individuals in Metropolitan and Rural counties had the highest investment rates, as illustrated in Figure 12. Spread across different income levels, my analysis indicates that people who made between $100,000 and $200,000 were more inclined to invest than those in any other income group, followed by those who made between $25,000 and $50,000 ("SOI Tax Stats", 2020). This spread is portrayed in Figure 13 below.

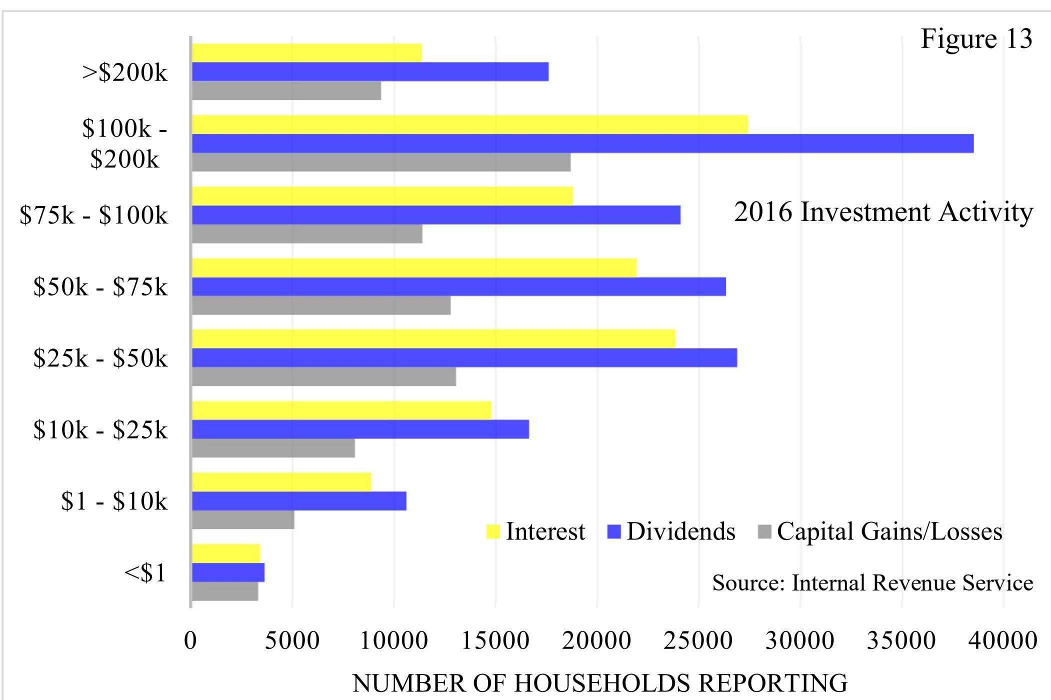


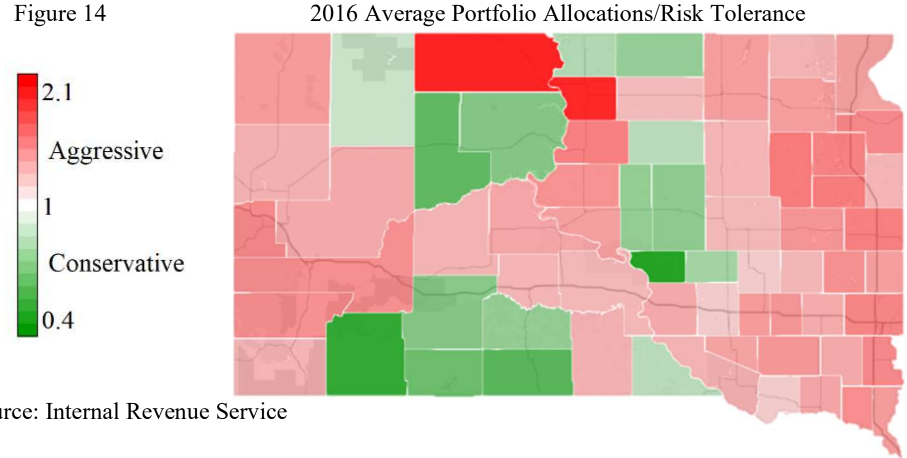
Figure 13

2016 Investment Activity

Source: Internal Revenue Service

Another way that investments are reported on tax returns is through Schedule B, Interest and Ordinary Dividends. The reporting of the income from interest and dividends across different income ranges is shown in Figure 13 above. These largely follow the trend of Schedule D filers, with higher-income households reporting more interest and dividend income than lower-income households. Interest comes from bonds, notes, and bank accounts, and is thus the product of what is generally considered to be safe, or "conservative," investing. Dividends come from stock ownership, and are thus the product of riskier, or "aggressive," investing. In the financial services industry, a portfolio is considered conservative if it consists of primarily bonds or bond funds. On the other hand, a portfolio is considered aggressively allocated if it holds mostly stocks or stock funds. Thus, a comparison of the number of returns reporting interest and those reporting dividends provides an indication of the level of risk tolerance among South Dakota investors in 2016. Overwhelmingly, I found that individuals in South Dakota are moderately aggressive investors, with about 33,880 more households investing in stocks than in bonds or notes and an overall dividend to interest ratio of 1.26 ("SOI Tax Stats", 2020). Figure 14 shows a map of the average risk tolerance in each county.

Figure 14 2016 Average Portfolio Allocations/Risk Tolerance



Metropolitan 1.32
Large Urban Center 1.32
Small Urban Center 1.24
Rural 1.10
Overall 1.26

Source: Internal Revenue Service

People in rural counties appear to invest the most conservatively, and those in urban and metropolitan counties appear to invest more aggressively. According to a study conducted on the relationship between risk tolerance and certain demographics, individuals with high incomes and some form of higher education are more likely to invest in riskier securities than individuals of other demographics (Heo, 2017). Counties in South Dakota with the highest incomes per capita are the most populated, and these areas tend to have a more educated populace. Thus, it is reasonable to believe that individuals in these counties would generally invest more aggressively than those in rural counties.

Summary and Conclusions

Overall, South Dakota largely follows national trends of income and investment behavior. In 2016, South Dakota residents were slightly above the national average in terms of income and taxes paid per capita. Due to its dependence on agriculture, South Dakota residents were far above the national average in terms of farm ownership while they maintained similar rates of business ownership. In addition, the state's farmers and business owners tend to earn more on average than most South Dakotans. Levels of taxation follow income trends, and fixed expenditures in total tend to be lower than the national average. South Dakota residents as a whole invest their private dollars in moderately aggressive ways, and primarily follow national consumption trends, although future research may be able to identify where exactly a South Dakota individual's discretionary income is being spent. South Dakota is a growing state with a lot of potential for individuals to build a stable and successful career, and it should certainly not be kept out of national discussions of economic development and national investment in developing industries.

This study provides an initial analysis of South Dakota incomes, based on data from 2016. Research still needs to be done on the changes from one year to another and how South Dakota residents behave over time. In addition, its primary source of data was the IRS. Thus, the data analyzed was self-reported and submitted by individuals, with compliance and honesty being assumed. Because the income amounts used in this study may be somewhat understated, a suggestion for future research is to augment my analysis by conducting a survey to garner income and consumption data in a manner that would not present the individual with a penalty for reporting more income and less deductible expenses. Additional research could consider focusing on income and wealth disparity within South Dakota. This would yield beneficial information on wealth accumulation and incite ideas to bolster South Dakota’s economy while boosting some individuals above the poverty line.

References

"2013 Rural-Urban Continuum Codes." (2013, May 10). Economic Research Service. United States Department of Agriculture. Retrieved from: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/.

Dolnicar, S., Crouch, G., Devinney, T., Huybers, T., Louviere, J., & Oppewal, H. (2008). "Tourism and discretionary income Allocation. Heterogeneity Among Households" *Tourism Management*. Volume 29, Issue 1. Pages 44-52. Retrieved from: https://www-sciencedirect-com.excelsior.sdstate.edu/science/article/pii/S026151770700101X.

"Federal Grant Funds Received by the State." (2019). Legislative Research Council. South Dakota Legislature. Retrieved from: http://sdlegislature.gov/docs/interim/2019/documents/DEXE11192019-B.pdf.

"GDP and Persona Income Mapping." (2019). Bureau of Economic Analysis. Retrieved from: https://apps.bea.gov/iTable/iTable.cfm?reqid=99&step=1#reqid=99&step=1&isuri=1.

Heo, W., Grable, J.E. & O'Neill, B. (2017). "Wealth Accumulation Inequality: Does Investment Risk Tolerance and Equity Ownership Drive Wealth Accumulation?" Soc Indic Res. Retrieved from: https://link.springer.com/article/10.1007%2Fs11205-016-1359-5.

"Incarceration Rate" (2017). The Opportunity Atlas. Darkhorse Analytics. Retrieved from: https://www.opportunityatlas.org/.

Kucukvar, M., Egilmez, G., & Tatari, O. (2014, October 15). "Sustainability assessment of U.S. final consumption and investments: triple-bottom-line input-output analysis." *Journal of Cleaner Production*. Volume 81. Pages 234-243. Retrieved from: https://www-sciencedirect-com.excelsior.sdstate.edu/science/article/pii/S0959652614006210.

Loughead, K. (2019). "How Much Does Your State Collect in Property Taxes Per Capita?" Tax Foundation. Retrieved from: https://taxfoundation.org/property-taxes-per-capita-2019/.

Loughead, K. (2019). "Which States Rely the Most on Federal Aid?." Tax Foundation. Retrieved from: https://taxfoundation.org/federal-aid-reliance-rankings/.

"Municipal Tax." (2019), South Dakota Department of Revenue. Retrieved from: https://dor.sd.gov/businesses/taxes/municipal-tax#taxpdfs.

"New York's Balance of Payments in the Federal Budget." (2017). *Office of the New York State Comptroller.* State of New York. Retrieved from: https://www.osc.state.ny.us/reports/budget/2017/federal-budget-fiscal-year-2016.pdf.

"Property Tax." (2019). South Dakota Department of Revenue. Retrieved from: https://dor.sd.gov/businesses/taxes/property-tax/.

Shultz, L & M. Cummings. (2019). "Giving or Getting? New York's Balance of Payments with the Federal Government." Rockefeller Institute of Government. Retrieved from: https://rockinst.org/issue-area/new-yorks-balance-of-payments-with-the-federal-government/.

Simo-Kengne, B.D., Miller, S.M., Gupta, R. *et al.* (2015). "Time-Varying Effects of Housing and Stock Returns on U.S. Consumption." *J Real Estate Finan Econ.* 50, pg 339–354. Retrieved from: https://link-springer-com.excelsior.sdstate.edu/article/10.1007/s11146-014-9470-3.

"SOI Tax Stats – County Data – 2016." (2020, January 10). Internal Revenue Service. Retrieved from: https://www.irs.gov/statistics/soi-tax-stats-county-data-2016.

"South Dakota Single Audit Report for the Fiscal Year Ended June 30, 2017." (2018). State of South Dakota. Retrieved from: https://legislativeaudit.sd.gov/reports/State/Statewide%202017.pdf.

Stebbins, S. (2018). "Tax Policy: States with the Highest and Lowest Taxes" USA Today. Retrieved from: https://www.usatoday.com/story/money/taxes/2018/04/06/states-highest-and-lowest-taxes-3-6/482944002/.

"US State and Local Government Total Spending." (2020). *US Government Spending.* Retrieved from: https://www.usgovernmentspending.com/state_spend_rank.