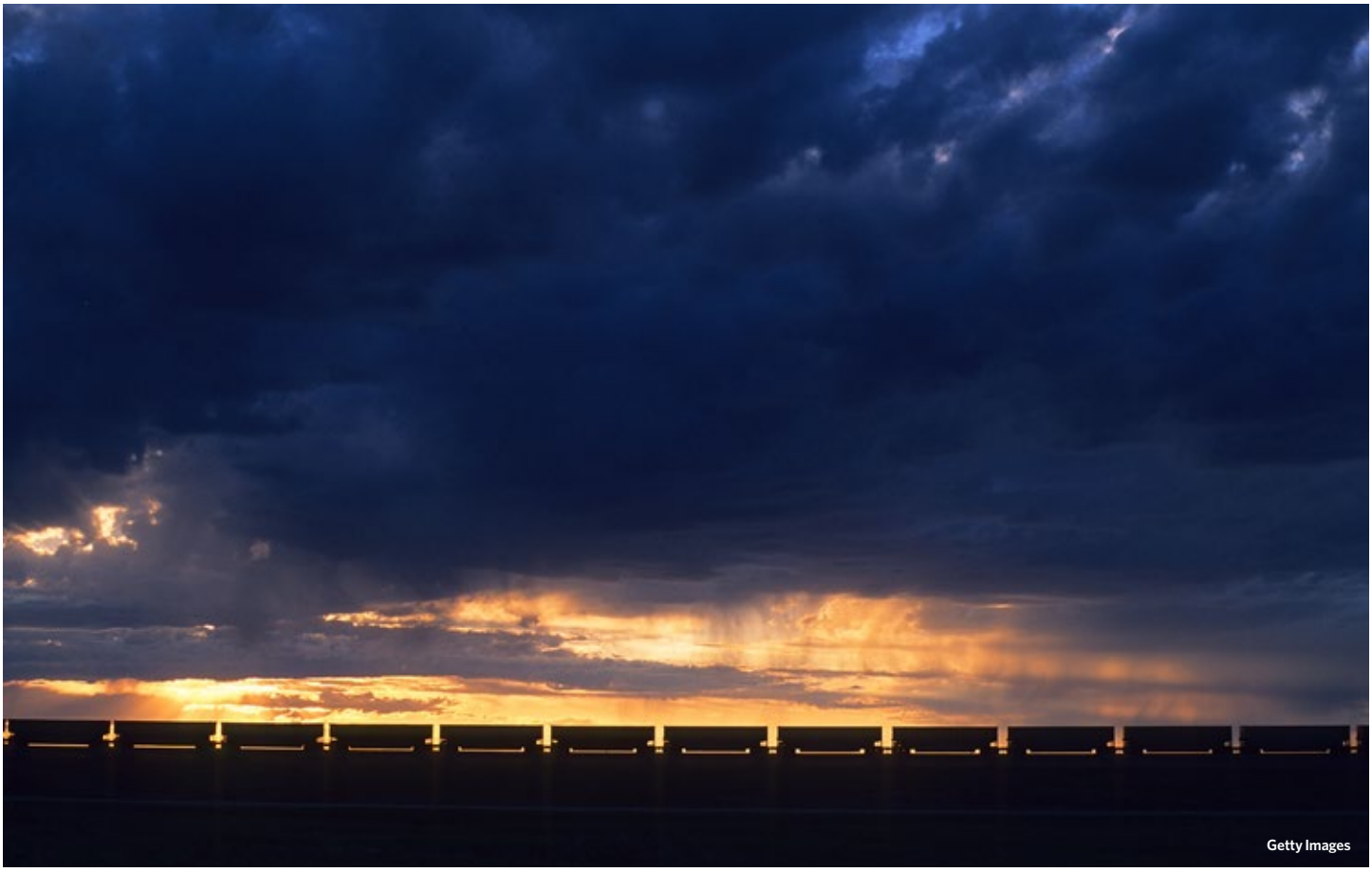
A brief from THE PEW CHARITABLE TRUSTS | Oct 2016



From Volatile Severance Taxes to Sustained Revenue

Key recommendations to improve state sovereign wealth funds

Overview

In 2014, collections from West Virginia's taxes on natural resource extraction—called severance taxes—reached a historic peak, more than doubling to $680 million from about $300 million in 2005, according to U.S. census data. A sizable portion of the state's revenue was already attributable to mineral extraction from decades of coal mining. But starting in the early 2000s, advances in the technologies for horizontal drilling and hydraulic fracturing, often referred to as fracking, sparked an energy boom that helped drive production of natural gas to record levels and left many U.S. states flush with cash. Recognizing the promise of this thriving new revenue, state lawmakers established a severance tax-based sovereign wealth fund, known as the West Virginia Future Fund, so that the current resource wealth could benefit future generations.

Governments use sovereign wealth funds, so-called because they are established by a sovereign nation or U.S. state, to deposit a portion of revenue in an investment account intended to generate returns that will be used to achieve a specific public purpose or set of goals.

Governments use sovereign wealth funds, so-called because they are established by a sovereign nation or U.S. state, to deposit a portion of revenue in an investment account intended to generate returns that will be used to achieve a specific public purpose or set of goals. In a May 2016 interview with The Pew Charitable Trusts, the West Virginia fund's legislative sponsor, state Senator Jeff Kessler, said, "With the horizontal drilling and the Marcellus Shale finds [a geological formation rich in natural gas deposits], I saw a huge opportunity to let market forces work for us. We had something that people were coming into our state for."

When severance tax collections are strong, it can be tempting for lawmakers to see them as a funding source for ongoing spending commitments. As Sen. Kessler explained, "Once politicians get used to seeing money and spending it, it's hard to get them to not become dependent on it." And a heavy or growing reliance on highly volatile severance tax collections can pose a serious threat to the long-term structural balance of a state's budget. When revenue is high, so is the temptation to spend it. When collections are low, lawmakers who've come to depend on those severance taxes to pay for operating expenses are left scrambling to fund the state's recurring expenditures. However, by depositing above-trend revenue from volatile severance tax collections in a reserve fund for future uses, such as a sovereign wealth fund, states can solve some of these challenges.

Yet another concern stems from the fact that severance taxes are rooted in the removal of finite natural resources, meaning that beyond the normal price fluctuations of a volatile market, revenue will eventually decline as the resources are exhausted. Failure to invest resource wealth represents an enormous missed opportunity, a lesson that many states have learned either from the current drop in energy prices or from past experiences. According to a study by the West Virginia Center on Budget and Policy, had the state set aside a 1 percent severance tax on coal starting in 1980, it would have accumulated nearly $2 billion by 2010—even if two-thirds of the fund's annual investment returns had been used to support the state's operating budget. To place that amount in context, total fiscal year 2010 appropriations for West Virginia were approximately $9.1 billion, inclusive of both state and federal funds, according to the state budget office.

To help policymakers better understand the challenges and opportunities afforded to them by sovereign wealth funds, Pew examined the constitutional and statutory language pertaining to the establishment and operation of these funds in U.S. states. In addition, Pew conducted interviews with the policymakers responsible for establishing recently created funds in the United States.

In brief, the research showed that:

- **Only seven U.S. states operate severance tax-based sovereign wealth funds. Among those states, only two—Alaska and West Virginia—have well-defined purposes for the funds written into state law.** In Montana, New Mexico, North Dakota, Utah, and Wyoming, the use of interest accruals and investment earnings, as well as the long-term objectives of the funds, is unclear.
- **Alaska, West Virginia, and Wyoming are the only states that do not allow withdrawals from the principal.** While the option for lawmakers to withdraw from these funds provides a state with increased fiscal flexibility in times of need, withdrawals can severely impede a fund's ability to fulfill long-term objectives.
- **Most funds direct interest accruals and investment earnings toward their states' general operating funds.** One strength of sovereign wealth funds is their ability, through investment holdings, to generate additional revenue that can increase their principal—or be used to cover general fund expenditures—without any additional deposits.

Pew's analysis of census data found that nine states drew more than 5 percent of their total revenue from severance taxes from 1995 to 2014. In six of those states—Louisiana, Montana, North Dakota, Oklahoma, Texas, and Wyoming—severance taxes were the most volatile major tax source. In the remaining three states—Alaska, New Mexico, and West Virginia—severance taxes were the second most volatile major tax source. For each of these states it is especially important for lawmakers to consider the volatility that comes from commodity prices.

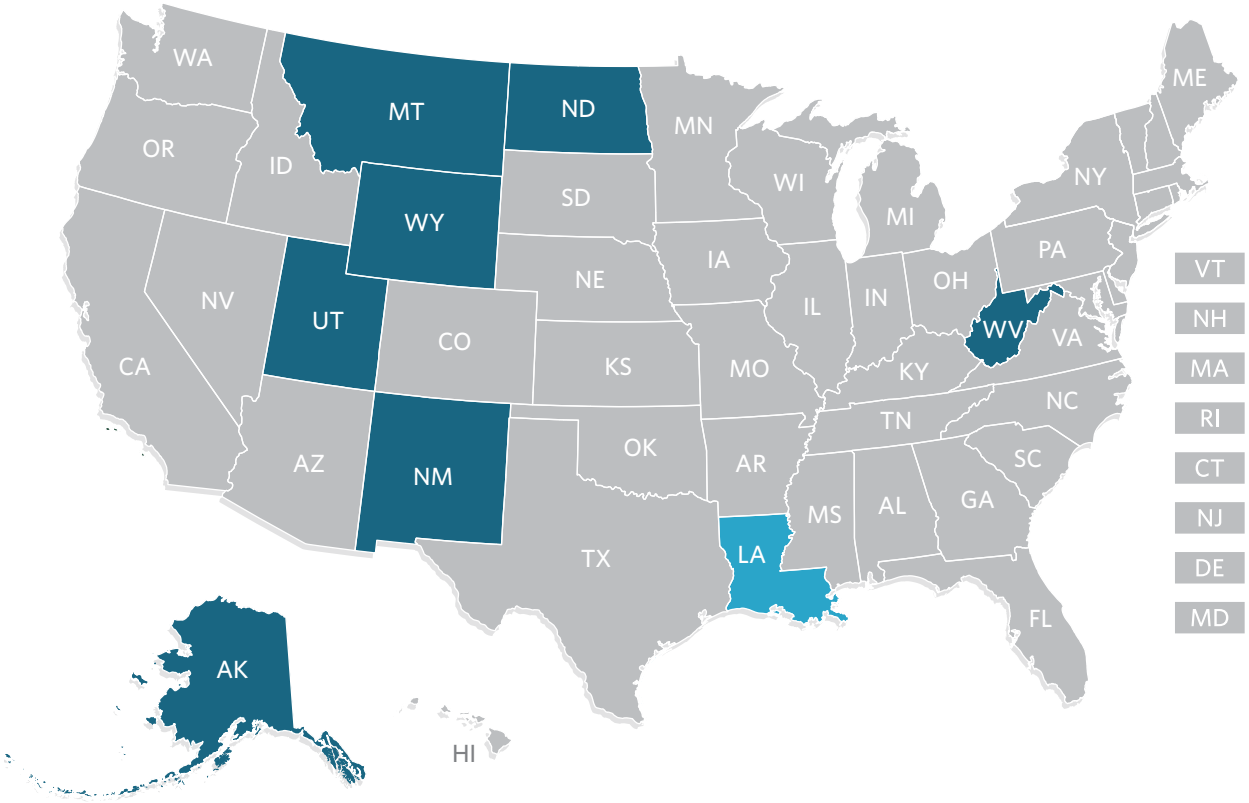
A severance tax-based sovereign wealth fund is one tool policymakers could consider to answer the challenges posed from a high reliance on these taxes, as it can help transform this volatile, finite tax stream into more permanent, revenue-generating assets. This type of long-term savings fund provides opportunities for U.S. states that collect this type of revenue to generate long-run investment earnings while managing the volatility of the revenue flowing to the general fund. In order to best transform finite severance tax collections into sustained revenue, Pew recommends that U.S. state policymakers:

1. **Identify the purpose of their state's sovereign wealth fund and clearly articulate its goals in law.** It is difficult to determine how much to save and how to best utilize funds when the purpose is not explicitly stated or clearly defined.
2. **Establish policies for the governance, investment, and public disclosure of the fund's activities in law.** Because sovereign wealth funds invest public funds into private markets, both domestic and international best practices emphasize the importance of clear legal guidance and transparency.
3. **Provide statutory or constitutional guidance regarding withdrawals from the principal.** In order for a sovereign wealth fund to build a large interest-generating balance, the principal must remain intact. While withdrawals can help address a state's short-term needs, they diminish the fund's ability to generate investment revenue.
4. **Be aware of volatility in interest earnings from the fund.** Sovereign wealth funds have the potential to generate significant amounts of interest and investment earnings. Most U.S. states with these funds have directed them, in whole or in part, toward their general fund budgets. However, the volatility of this revenue is linked to the fund's investment strategy and the fluctuations of the financial markets.

Figure 1

7 States Currently Set Aside a Share of Severance Tax Collections for Investment

Louisiana voters will decide whether to create a fund via a ballot measure in November 2016



Fund Type

No fund | Proposed severance tax-based fund | Severance tax-based fund

Source: Pew analysis of state constitutions and statutes

Severance tax-based sovereign wealth funds in U.S. states

In fiscal 2015, U.S. states held $44 billion in various **operating reserve accounts**, such as budget stabilization or rainy day funds, general fund ending balances, or issue-specific reserve accounts.[1] The funds in these accounts are often kept in relatively liquid assets and are used to ease budgetary strain resulting from an economic downturn, natural disaster, or other situations as defined in a given state's laws. All but three states—Colorado, Illinois, and Montana—have some form of rainy day fund, making it the most common and most widely understood form of operating reserve account used by state governments.

Although these reserves comprise a valuable management tool for states as they struggle to comply with balanced budget requirements over the course of the business cycle, their balances typically pale in comparison

to state **nonoperating investment funds**, such as sovereign wealth funds and pension funds. For example, in fiscal 2015, Alaska's sovereign wealth fund, called the Alaska Permanent Fund, held assets valued at nearly $53 billion,[2] compared with $7.6 billion in the state's operating reserve accounts.[3] In addition to Alaska, six other states—Montana, New Mexico, North Dakota, Utah, West Virginia, and Wyoming—have a severance tax-based sovereign wealth fund; in total, the seven funds held $69.2 billion in assets in fiscal 2016.[4] In comparison, 77 funds with an estimated $8.2 trillion under management are currently in operation outside the United States in countries ranging from China and France to Russia and Kuwait.[5]

From 1995 to 2014, nine states drew more than 5 percent of their total tax revenue from severance collections. Of those nine, only Oklahoma and Texas are without a severance tax-based sovereign wealth fund.[6] Note that Utah has a fund, but severance tax collections constitute less than 5 percent of total revenue.

Table 1

Only 2 U.S. States Have an Explicit and Narrowly Defined Purpose for Their Severance Tax-Based Sovereign Wealth Fund

State	Fund	Enabling statute	Purpose
Alaska	Alaska Permanent Fund	Alaska Cons. Art. IX §15	Explicit and narrow
Montana	Montana Coal Severance Tax Trust Fund	Montana Cons. Art. IX § 5	Implied and broad
New Mexico	Severance Tax Permanent Fund	New Mexico Cons. Art. VIII § 10	Implied and broad
North Dakota	North Dakota Legacy Fund	North Dakota Cons. Art. X §26	Implied and broad
Utah	Permanent State Trust Funds	Utah Cons. Art XIII § 5; Art. XXII § 4	Implied and broad
West Virginia	West Virginia Future Fund	West Virginia Code § 11 -13a-5b	Explicit and narrow
Wyoming	Permanent Wyoming Mineral Trust Fund	Wyoming Cons. Art. XV § 19	Implied and broad

Source: Pew analysis of state enabling statutes

> Pew recommended that policymakers establish an explicit, narrowly defined purpose for their funds in law, in order to inform the policies that govern deposits and withdrawals as well as to provide guidance as to how large the fund balances should grow.

Why states establish sovereign wealth funds

In the recent report *Why States Save: Using Evidence to Inform How Large Rainy Day Funds Should Grow*, Pew explored the topic of savings targets for rainy day funds in U.S. states and found that many of the funds did not feature a clear purpose statement. This lack of guidance complicated the operation of the reserves, because a failure to define the reason for saving can prevent U.S. states from formulating evidence-based savings targets. As a result, Pew recommended that policymakers establish an explicit, narrowly defined purpose for their funds in law, in order to inform the policies that govern deposits and withdrawals as well as to provide guidance as to how large the fund balances should grow.

While severance tax-based sovereign wealth funds differ from rainy day funds in a number of ways, both can be improved with an explicit purpose established in state law. According to the Santiago Principles, an internationally recognized set of best practices regarding the design and operation of sovereign wealth, the policy purpose of the fund should be clearly defined and publicly disclosed.[7] Further, transparent policies should also guide deposits, withdrawals, and spending operations.

Among the seven states with severance tax-based sovereign wealth funds, only Alaska and West Virginia have explicitly and narrowly defined the purpose for their savings, according to Pew research. The Alaska Permanent Fund designates three provisions: "(1) the fund should provide a means of conserving a portion of the state's revenue from mineral resources to benefit all generations of Alaskans; (2) the fund's goal should be to maintain safety of principal while maximizing total return; (3) the fund should be used as a savings device managed to allow the maximum use of disposable income from the fund for purposes designated by law."[8] This language in Alaska state law clearly sets forth the goal of the Permanent Fund and informs the investment strategy and use of returns.

West Virginia's Future Fund also designates a clear purpose. While all funds are inviolate through fiscal 2020, the Legislature is authorized to utilize the fund after that time "solely for enhancing education and workforce development; economic development and diversification; infrastructure improvements; and tax relief measures for the benefit of the citizens and businesses of the State of West Virginia."[9] Again, the state benefits from this degree of guidance, because the purpose statement helps the fund's administrators to identify appropriate investment strategies and usage of the funds.

The guidance is less clear for the remaining five severance tax-based sovereign wealth funds held by U.S. states. Each fund's governing laws stipulate that either interest and investment revenue or some sort of annual disbursement from the fund is fed into the state's respective

general operating fund. This approach, while widespread, leaves policymakers with little guidance regarding how they should employ this revenue and runs the risk of replacing highly volatile mineral revenue with comparably volatile investment earnings.

When North Dakota established its Legacy Fund during the height of its energy boom in 2010, lawmakers debated the fund's purpose. Eventually, they agreed that all investment earnings and interest accruals would stay in the fund and that the money—both principal and earnings—would be inviolate until fiscal 2018. The original sponsors of the bill, state Senator Dwight Cook and state Representative Al Carlson, both expressed optimism that there was widespread agreement on the intergenerational nature of the fund's purpose. "I personally believe—and that's how it got to be named the Legacy Fund—that it's for future generations," said Sen. Cook. "I think the majority of us feel it's for future generations, maybe when oil is gone."

However, the exact way in which investment earnings from the fund should be used to fulfill that intergenerational purpose is not entirely clear. Sen. Cook explained: "Last session, we had a lot of discussion on what we are going to use that fund [for]. Even if you state a purpose for it, that doesn't mean the issue is going to go away. Because the next Legislature might have an entirely different idea of the purpose."[10] Rep. Carlson reiterated the issue of legislative discretion over the purpose of the fund: "If you constitutionally limit something, it's very difficult to change. If you statutorily limit something, it's very easy to work with every time we're in session." Both legislators agreed that until the fund principal grows much larger, the question of what to do with interest earnings isn't particularly pressing. "I think the overall theme is don't fund the general fund with it; find a special-purpose use. I would prefer that we dealt with something on the education side, because that's the future of the state, the education of our kids," Rep. Carlson said.

The importance of guidance on governance and transparency

Because of the size and scope of their asset holdings, severance tax-based sovereign wealth funds introduce a number of challenges. The first is the difficulty of providing proper fiduciary management of the funds, which requires policymakers to have expertise in finance and investing. Second, in order to achieve a healthy return, the funds require continuous monitoring of their investments to maximize possible earnings. Finally, without designated oversight and transparency, it is difficult to discern whether a fund is achieving its objectives.

To address these issues, a fund should have a clear set of policies that guide the governance, investment, and disclosure of information. One option suggested by the Santiago Principles is to create an independent body to manage the fund, charged with overseeing it in a nonpartisan way, investing in line with stated objectives, maximizing earnings while maintaining fiduciary standards, and providing a high degree of transparency. This approach has proved successful in New Zealand and Alaska.

New Zealand's Superannuation Fund, often called the New Zealand Super Fund, was established in 2001 to help address the country's fiscal needs as its population ages and the burden for superannuation (or pension) payments increases. Since its creation, the fund has grown considerably, reaching a total of approximately USD$21.5 billion (NZD$30 billion) by July 27, 2016. The fund's governance and policy design are also important and exemplary of internationally accepted best practices.[11]

First, the fund has an independent council, known as the Guardians of New Zealand Superannuation, tasked with overseeing administration and management of investments. The Guardians are an impartial group that identifies sound investment strategies for the fund, insulated from political pressures, while reducing the need for outside consultants or investment managers. In addition to the independent oversight, the New Zealand Super Fund features a clearly defined purpose, investment goals, and designated levels of risk tolerance (i.e., how

aggressively to invest the portfolio). Furthermore, the Guardians have a strong commitment to disclosure and transparency.

Among U.S. states, the closest comparison to New Zealand's Super Fund is Alaska's Permanent Fund, started in 1976 as construction of the Alaskan oil pipeline was drawing to a close. The fund's more than $54 billion in holdings are managed by the independent Alaska Permanent Fund Corporation (APFC) established in 1980. The APFC's board of trustees includes members appointed by the governor, along with the commissioner of revenue, one additional member of the state cabinet, and members of the public. In addition to managing daily operation, the APFC board reviews, adopts, and monitors the fund's assets in accordance with the Prudent Expert Rule, which charges fiduciaries "to act with discretion and intelligence, to seek reasonable income, preserve capital, and, in general, avoid speculative investments."[12]

By establishing independent entities to oversee their sovereign wealth funds, New Zealand and Alaska have ensured prudent governance, monitoring, and disclosure of their financials and management practices. They stand as examples of many of the best practices for sovereign wealth funds domestically or internationally.

3 policy objectives for sovereign wealth funds

While objectives may vary from fund to fund, Pew's research identified three main purposes for sovereign wealth funds operating both within the U.S. states and internationally: intergenerational savings, targeted development, and emergency budget stabilization.

Funds that focus on **intergenerational savings** are designed to transfer wealth across generations by converting nonrenewable assets—typically natural resources—into investments that help to diversify the state economy and ensure the continuation of revenue once the resource has been exhausted.

In the international arena, the most notable example is Norway's Government Pension Fund Global, commonly called the Norwegian Oil Fund. Since its establishment in 1998, the Oil Fund has accumulated nearly USD$900 billion in assets and holds investments in more than 9,000 companies across 78 countries. The fund's purpose is defined by the finite nature of Norway's resource wealth, as succinctly stated on its website: "One day the oil will run out, but the return on the fund will continue to benefit the Norwegian population."[13] In the United States, the statute for Alaska's Permanent Fund notes that it aims to provide "a means of conserving a portion of the state's revenue from mineral resources to benefit all generations of Alaskans."[14]

Alternatively, some sovereign wealth funds are designed to finance **specific, targeted development** in a designated industry, to provide a designated service to the people, or to fund infrastructure development.

New Zealand's Superannuation Fund was created "to meet the present and future cost of New Zealand superannuation (pensions)."[15] Similarly, in 2002, the United Arab Emirates established the Mubadala Development Co. as a public joint stock company to help diversify the country's economy through heavy investment in industries ranging from aerospace engineering and manufacturing to renewable energy, semiconductors, and public utilities.[16]

A third purpose for sovereign wealth funds has been to offer supplemental resources for **emergency budget stabilization** by building savings during growth periods and then using interest accruals, investment income, and, in some cases, principal to supplement operating revenue during periods of economic decline.

This practice is commonly employed internationally, with examples such as Chile's Economic and Social Stabilization Fund[17] and the Mexican Fondo de Estabilización de los Ingresos Petroleros, or Oil Revenues

Stabilization Fund, of which the stated purpose is "to minimize the effect on public finances and national economy when oil revenue declines occur."[18] Severance tax-based sovereign wealth funds are not used by U.S. states to address these macroeconomic concerns because states lack the authority to set monetary policy—specifically, they cannot print money, set interest rates, or issue debt to finance governmental operations. Budget stabilization is more commonly achieved through tax increases, spending cuts, and withdrawals from state rainy day funds, such as Virginia's Revenue Stabilization Fund or Texas' Economic Stabilization Fund. In Virginia and Texas, deposits of volatile revenue are made to their funds, and balances are available for use during periods of economic or revenue downturn.

Among the seven severance tax-based sovereign wealth funds held by U.S. states, six could be classified as intergenerational savings funds, although only Alaska expressly defines the fund as such by law.[19] West Virginia's Future Fund, which allows for withdrawals from the principal for capital outlays and transportation funding, is a targeted development fund.[20]

Table 2

Most Severance Tax-Based Funds in U.S. States Are Used for Intergenerational Savings

More than half can withdraw from the principal, and most direct earnings to the general fund

State	Fund	Policy objective	Withdraw from the principal	Use of investment income
Alaska	Alaska Permanent Fund	Intergenerational savings	No	Reinvested in fund
Montana	Montana Coal Severance Tax Trust Fund	Intergenerational savings	Yes	Partial to general fund
New Mexico	Severance Tax Permanent Fund	Intergenerational savings	Yes	Partial to general fund
North Dakota	North Dakota Legacy Fund	Intergenerational savings	Yes	Directed to general fund*
Utah	Permanent State Trust Funds	Intergenerational savings	Yes	Directed to general fund
West Virginia	West Virginia Future Fund	Targeted development	No	Reinvested in fund†
Wyoming	Permanent Wyoming Mineral Trust Fund	Intergenerational savings	No	Directed to general fund

Source: Pew analysis of state enabling statutes

* All interest and investment earnings are directed to the general fund after June 30, 2017.

† All interest and investment earnings are reinvested in the fund until after fiscal 2020, after which they may be utilized for the fund's targeted development objectives.

How Much Is Enough for a Sovereign Wealth Fund?

U.S. state lawmakers face a trade-off when it comes to savings, as each dollar saved is a dollar not spent on ongoing needs such as education or infrastructure improvements. Policymakers frequently ask how much they should save. In the report *Why States Save*, Pew's research found that the savings targets of states' rainy day funds should be informed by the purpose of their funds. Yet most lack a clear, narrow purpose defined in law.

Although sovereign wealth funds typically have a much longer timeline for their goals, the logic behind identifying a savings target is the same: The purpose of the fund should determine how much to save.

As such, if a fund is designed for revenue stabilization, the savings target should be informed by the volatility in the revenue that the fund seeks to smooth. Higher levels of volatility or higher levels of protection would each require larger savings. Similarly, if the fund is designated for specific development needs, the savings target should be tailored to meet the estimated costs for the desired projects or improvements. Intergenerational sovereign wealth funds do not have a clear savings target, so the objective should be to maximize the amount set aside and invested while the finite resources are still available.

Establishing guidelines for accessing sovereign wealth fund principal

Because rainy day funds are often among the first lifelines available to U.S. states during recessions, revenue downturns, or fiscal crises, they are usually designed to be easily accessible and to help smooth the state's revenue across the business cycle. In contrast, sovereign wealth funds are most frequently meant to transform the finite natural resource wealth being extracted into a more permanent, less volatile revenue stream by way of an active and diversified investment portfolio. Since balances in sovereign wealth funds do not need to be as accessible as a rainy day fund, they can accept higher levels of risk in search of larger returns. In this respect, sovereign wealth funds are similar to other types of U.S. state nonoperating investment funds, such as pension funds, and may face commensurate levels of exposure risk.

Accessing the principal of a sovereign wealth fund for emergency budgetary needs can have negative long-term fiscal implications. Because most U.S. states direct the investment earnings of their sovereign wealth funds into the state's general fund, drawing down the principal of the sovereign wealth fund will result in a "penalty" in general fund revenue, since the reduced principal will generate decreased returns in subsequent years. As a result, states should consider withdrawals from the fund's principal as a means of last resort in response to an economic crisis. In most cases, it is advisable for the principal to remain inviolate in order to ensure that it will continue to grow and that the fund can achieve its objectives.

None of the seven severance tax-based sovereign wealth funds in U.S. states is designated as having an emergency budgetary stabilization purpose. However, Montana, New Mexico, North Dakota, and Utah have provisions that allow for withdrawals of their fund's principal. And even in states where the principal is inviolate

or the conditions for withdrawal are very high, policymakers debate whether the funds should be made more accessible. In Wyoming, declining energy commodity prices left lawmakers scrambling to cover for more than $600 million in projected revenue losses in 2016, with some suggesting that the state suspend the legally required deposits into the Permanent Wyoming Mineral Trust Fund.[21]

Debate also arose in Montana over a proposal to limit deposits to the Coal Severance Tax Trust Fund to instead fund infrastructure needs across the state.[22] Several state legislators proposed capping the fund at $1 billion, which would significantly limit the amount of revenue the fund could generate through its investments.

The role of fund investment earnings in overall state tax volatility

Five of the seven severance tax-based funds in the U.S. direct their investment earnings to the states' general funds, making those resources available to cover operating and other recurring expenditures.[23] In some cases, this strategy can serve as a useful tool for reducing volatility in tax revenue, though doing so does not guarantee greater stability across a state's entire revenue portfolio in perpetuity. Take the case of Wyoming, where lawmakers established a severance tax in 1969 to help solidify the state's finances, and voters then added the Permanent Wyoming Mineral Trust Fund (PWMTF) to the state constitution in 1975.[24] The fund receives deposits from severance taxes to put some of the state's mineral wealth into savings for future needs, but it does not have a specified purpose or goals.[25] As of May 31, 2016, the fund held nearly $7.3 billion in assets.[26]

The PWMTF funnels all interest and investment earnings into the state's general fund to support ongoing expenditures and obligations. As a result, the investment income from the PWMTF is considered a distinct revenue stream by state lawmakers. According to data from the state's Legislative Service Office, the investment holdings for the PWMTF provided nearly $400 million in 2014—almost 10 percent of the state's full revenue portfolio.

Given how volatile Wyoming's revenue has been historically, the state used the PWMTF as a means to reduce its overall revenue volatility. While severance collections vary widely from year to year, a strong, diversified investment portfolio can provide less volatile yields—essentially transforming a share of the state's severance taxes into a smaller but potentially more predictable revenue stream.

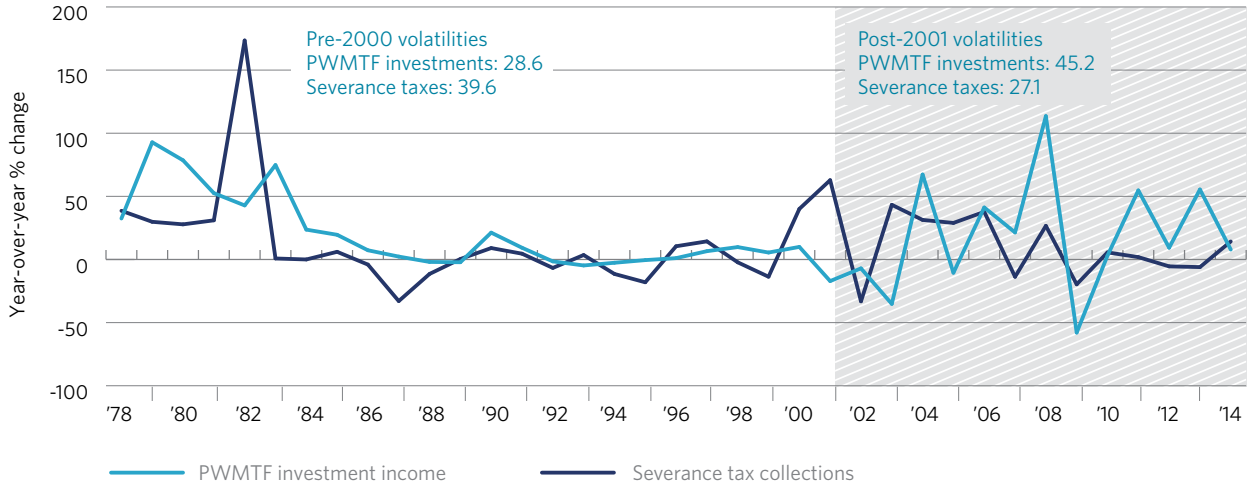
This strategy seemed to work for the state, as the PWMTF's investment earnings were more than 25 percent less volatile than severance collections from 1976 through 2000. However, since 2001, investment income from the PWMTF has actually been more volatile than the state's severance tax collections. This is because investment earnings from sovereign wealth funds are tied to both the volatility of the market and the fund's investment strategy. When interest rates on fixed-rate securities began to decline in the early 2000s, the PWMTF adopted higher-risk investments to achieve comparable returns. As the markets have grown increasingly erratic in recent years, the volatility of the fund's investment income has also increased.

The increase in investment volatility has also translated into the state's broader revenue portfolio. Because the PWMTF's investment income is directed to the state's general fund like many of the state's other tax streams, volatility for Wyoming's total revenue portfolio has actually risen.[27]

Figure 2

PWMTF Investment Income

Since 2001, investment income has become more volatile than severance taxes



Source: Wyoming Legislative Service Office

Note: Volatility values are the standard deviation of year-over-year percentage changes in revenue reported by the state. A more detailed explanation of this methodology is available in the Appendix.

Conclusion

Severance tax-based sovereign wealth funds present U.S. states with the opportunity to create a permanent source of investment income. For intergenerational savings, this can mean added deposits to the principal, with interest and other earnings allowed to compound over time. For targeted development funds, investment income can provide a continuing source of capital for one-time expenditures such as improving infrastructure. Alternately, investment earnings from sovereign wealth funds can be directed to the state's general fund, but policymakers should be attentive to their potential volatility.

These long-term investment accounts can enable U.S. states that enjoy a significant amount of severance tax revenue to reduce their reliance on volatile annual or biennial collections while ensuring that some of their mineral wealth is set aside for the benefit of future generations. Moreover, a commitment to disclosure and transparency helps manage these funds in ways that will achieve their stated goals.

Appendix: Methodology

Defining U.S. state sovereign wealth

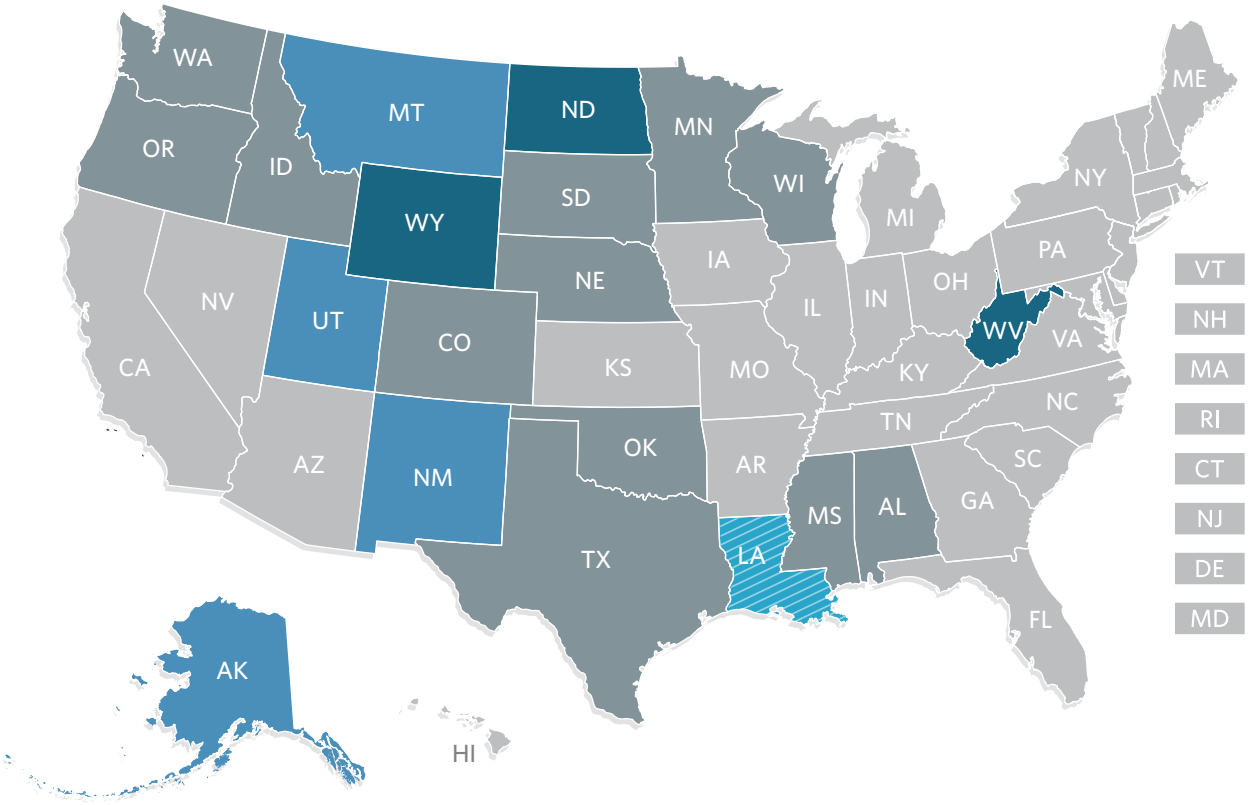
To assemble a list of qualifying sovereign wealth funds within the United States, Pew built upon previous research efforts examining these types of funds, collecting data from two peer-reviewed academic sources[28] as well as the International Forum of Sovereign Wealth Funds[29] and the Sovereign Wealth Fund Institute. Researchers cross-referenced the four sources to develop a list of 24 sovereign wealth funds across 20 states. These funds were further verified by examining their enabling legislation. Of the 24 funds, 17 are state land trusts, a specific type of investment account that features a large holding of public land. The primary revenue for these funds comes in the form of leases and real estate transactions centering on the sale of resources on the land or, in the case of some states, the sale of the actual property. Proceeds from these activities are funneled into a trust fund that then invests them with a specific set of goals, most commonly to provide funding for public education.

The remaining seven funds are severance tax-based. Severance tax-based funds are a similar type of investment account; however, the principal of these funds comes from taxes on mineral extraction. In most cases, a set percentage of total severance collections are deposited into a trust fund that invests the proceeds, similar to state land trusts. In this report, Pew follows U.S. Census' convention of combining other forms of mineral revenue, such as oil and gas production taxes, into a broadly defined category of severance taxes.

For all valid funds, Pew examined the enabling statute or constitutional language to identify the mechanism for depositing to the principal of the fund, which revealed a clear division of funds into these two types. Researchers also examined the enabling and related statutes or constitutional language to identify both the designated purpose of these funds and any provisions that allow for withdrawals from the principal.

Figure A.1

Research Identified 2 Types of Sovereign Wealth Funds in U.S. States: Severance Tax-Based Funds and State Land Trusts



Fund Type

- No sovereign wealth fund
- State land trust fund
- Severance tax-based fund
- State land trust and proposed severance tax-based fund
- Both fund types

Source: Pew analysis of state constitutions and statutes

Classifying the purposes of sovereign wealth funds in U.S. states

The coding of fund purposes focused on whether the enabling text provided a distinct statement of purpose for the sovereign wealth fund in state law. If a state provided statutory or constitutional language specifically designating the goal(s) for the fund, Pew categorized the fund as having an "explicit" purpose. Conversely, a fund was classified as having an "implied" purpose if the state constitution or statute did not provide any statement regarding the fund's goals or only stated that funds would be directed to the state's general fund.

Additionally, researchers examined each fund's purpose statement from the perspective of a state fiscal analyst charged with identifying an evidence-based savings target or goal. Researchers were asked to discern whether the fund's stated objectives were clear and measurable. However, if the objectives defined were vague, nonspecific, or too expansive to inform a savings target, Pew classified the fund as having a "broad" definition.

Measuring volatility in Wyoming's revenues

This analysis derives a volatility score for both Wyoming's severance tax collections and investment income from the Permanent Wyoming Mineral Trust Fund using data provided by the Wyoming Legislative Service Office from 1978 through 2014. The score measures variation in the year-over-year percentage change, based on a calculation of standard deviation. A low score means that revenue was similar from year to year, and a high one indicates that it grew or shrank more dramatically. For example, the pre-2000 PWMTF volatility—28.6—means that prior to 2000, the state's investment income from their sovereign wealth fund revenue showed wide variability from year to year, typically fluctuating within 28.6 percentage points above or below its overall growth trend. However, this revenue stream has become even more unpredictable, with the post-2001 investment revenue receiving a volatility score of 45.2.

Endnotes

1 The Pew Charitable Trusts, "Fiscal 50: State Trends and Analysis," accessed May 17, 2016, http://www.pewtrusts.org/en/multimedia/data-visualizations/2014/fiscal-50#ind5. Additionally, to offer a point of comparison, state tax revenue totaled $865.7 billion nationally for fiscal 2014, according to U.S. Census Bureau, "2014 Annual Survey of State Government Tax Collections," https://www.census.gov/govs/statetax/.

2 In this report, Pew follows U.S. Census' convention of combining other forms of mineral revenue, such as oil and gas production taxes, as severance taxes. Alaska does not levy severance taxes on the assessed value of natural resources, but instead levies an oil and gas production tax on the value of oil extracted net of qualified lease expenditures on capital and operations.

3 Total fund equity as of June 30, 2016, was obtained from the Alaska Permanent Fund Corporation, "Fund Market Value," http://www.apfc.org/home/Content/home/index.cfm. State operating account data were obtained from the National Association of State Budget Officers, The Fiscal Survey of States (2016), https://higherlogicdownload.s3.amazonaws.com/NASBO/9d2d2db1-c943-4f1b-b750-0fca152d64c2/UploadedImages/Reports/Spring%202016%20Fiscal%20Survey%20of%20States-S.pdf.

4 As a point of comparison, the tax collections for those seven states totaled $31.9 billion for fiscal 2014, according to census data.

5 Sovereign wealth funds and asset holdings were drawn from Sovereign Wealth Fund Institute, "Institutional Investor Profiles," http://www.swfinstitute.org/sovereign-wealth-fund-profiles/, and Sovereign Investor Institute's Sovereign Wealth Center, "Fund Profiles," http://www.sovereignwealthcenter.com/fund-profiles.html.

6 The Texas Permanent School Fund is a state land trust that derives a great deal of income from mineral leases as well as other sources of income derived from its land holdings. While technically not a severance tax-based sovereign wealth fund, it shares many of the characteristics of those funds in this analysis and is intended to support intergenerational equity through K-12 school funding. Notably, Texas' rainy day fund, the Economic Stabilization Fund, is funded by excess annual severance tax collections as well as other sources.

7 International Working Group of Sovereign Wealth Funds, Sovereign Wealth Funds Generally Accepted Principles and Practices: "Santiago Principles" (October 2008), http://www.iwg-swf.org/pubs/eng/santiagoprinciples.pdf.

8 Alaska Stat. § 37.13.020 (2015), http://www.legis.state.ak.us/basis/statutes.asp#37.13.010.

9 W. Va. Code § 11 -13A-5b (2015), http://www.legis.state.wv.us/wvcode/Code.cfm?chap=11&art=13A.

10 The Pew Charitable Trusts, interview with Senator Dwight Cook, June 2016.

11 New Zealand Superannuation Fund, "NZ Super Fund Explained," https://www.nzsuperfund.co.nz/nz-super-fund-explained.

12 Alaska Permanent Fund Corporation, "About the Alaska Permanent Fund Corporation (APFC)," http://www.apfc.org/home/Content/aboutAPFC/aboutAPFC.cfm.

13 Norges Bank Investment Management, "Government Pension Fund Global: The Fund," https://www.nbim.no/en/the-fund/.

14 Alaska Stat. § 37.13.020.

15 "New Zealand Superannuation and Retirement Income Act 2001," New Zealand Public Act 2001, No. 84, Oct. 11, 2001, http://www.legislation.govt.nz/act/public/2001/0084/latest/DLM113924.html?search=ta_act_N_ac%40ainf%40anif_an%40bn%40rn_200_a&p=1.

16 Mubadala Development Co., "What We Do," https://www.mubadala.com/en/what-we-do.

17 Government of Chile, Ministry of Finance, "Sovereign Wealth Funds: Economic and Social Stabilization Fund," http://www.hacienda.cl/english/sovereign-wealth-funds/economic-and-social-stabilization-fund.html.

18 Government of Mexico, "Reglas de Operación del Fondo de Estabilización de los Ingresos Petroleros," Section 3.1, Diario Oficial de la Federación, May 31, 2007, http://www.apartados.hacienda.gob.mx/ifswf/reglas_operacion_31052007.pdf.

19 Because sovereign wealth funds are long-term investment accounts, a failure to designate a purpose implies some desire to save for the future. As such, Pew researchers assumed this to be a type of intergenerational savings.

20 W. Va. Code § 11 -13A-5b.

21 Laura Hancock, "Shortfall Prompts Questions About Wyoming's Savings Strategy," Casper Star Tribune, Oct. 9, 2015, http://trib.com/news/state-and-regional/govt-and-politics/shortfall-prompts-questions-about-wyoming-s-savings-strategy/article_6d977a61-3f0e-59aa-bc1d-ee207e5e9edd.html; and "Wyoming Revenue Report Predicts Budget Shortfall," Wyoming Tribune Eagle, Oct. 26, 2015, http://www.wyomingnews.com/news/new-wyoming-revenue-report-predicts-budget-shortfall/article_913ce11b-ac84-565c-96e5-614e176a1f8d.html.

22 Charles S. Johnson, "Bill Would Cap Coal Tax Trust Fund at $1 Billion," Billings Gazette, Feb. 18, 2015. http://billingsgazette.com/news/government-and-politics/bill-would-cap-coal-tax-trust-fund-at-billion/article_5035274d-4ce7-546e-b5a4-ea86c182e086.html

23 For New Mexico's Severance Tax Permanent Fund, the constitution directs for annual disbursements from the fund, one-twelfth of which are sent to the state's general fund. The remaining five funds direct all interest revenue to their respective state general funds.

24 Wyoming Taxpayers Association, "Permanent Wyoming Mineral Trust Fund (PWMTF) FAQ," http://www.wyotax.org/PMTF.aspx.

25 The Permanent Wyoming Mineral Trust Fund's deposits from severance taxes are attributable to two sources. The first is the state constitution, which calls for 1.5 percent of total severance collections to be diverted to the fund. The second is a statute passed in 2005 that calls for an additional 1 percent of total severance collections to also be deposited to the fund.

26 Wyoming State Treasurer Mark Gordon, "Wyoming State Investment Portfolio: May 31, 2016," https://statetreasurer.wyo.gov/assets/investment/portfoliostatus053116.pdf.

27 It is important to note that, except in Alaska and Wyoming, the sovereign wealth funds' principal is too small for the increased volatility in its investment income to have a sizable impact on the state's broader revenue volatility.

For further information, please visit:

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Contact: Catherine An, communications officer
Email: can@pewtrusts.org
Project website: pewtrusts.org/fiscal-health

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