A White Paper by

HEADWATERS ECONOMICS

State Trust Lands in Transition:

States' Treatment of Permanent Funds

November 2019

State Trust Lands in Transition:
States' Treatment of Permanent Funds

November 2019

PUBLISHED ONLINE:
https://headwaterseconomics.org/topic/public-lands/state-trust-lands-permanent-fund

ABOUT HEADWATERS ECONOMICS

Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions.

AUTHORS

Chelsea Liddell, 2019 Public Lands Fellow

Mark Haggerty, Researcher and Policy Analyst

CONTACT INFORMATION

Mark Haggerty | mark@headwaterseconomics.org | 406-570-5626

ACKNOWLEDGEMENTS

We are grateful to the states that were able to provide data for this analysis.

P.O. Box 7059
Bozeman, MT 59771
https://headwaterseconomics.org

Cover Photo: Tom Lane – High Country News

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

State trust lands are a little-known and poorly understood part of the western U.S. landscape. However, they cover a large area and generate substantial revenues for states. Trust lands comprise about 51 million acres, a significant portion of western lands when compared to lands managed by the Forest Service (192 million acres) or the Bureau of Land Management (270 million acres). In 2019, New Mexico alone distributed $828 million from state trust land-associated revenues and holds a trust lands financial permanent fund of $17.3 billion.

Better understanding of state trust lands entails recognizing two key features of the trust concept: first, these are not public lands insofar as they are not managed for all citizens of the state. Instead, they are part of a fiduciary trust and, as such, must be operated exclusively to maximize revenue for schools and other beneficiaries. Any uses that do not generate maximum revenue are not within the legal mandate of state trust lands. Second, the value of the trust—whether held in land or money generated from land sale—must, by law, be maintained in perpetuity.

In this paper, which is part of a series on state trust lands, we study the financial permanent funds associated with trust lands. States deposit revenues from land sales and nonrenewable resource extraction into permanent funds, thereby ensuring that the overall trust value—the "whole trust"—is retained in perpetuity. The permanent funds then generate revenues from financial investments.

We find that some states are failing to maintain the value of the whole trust. Some are spending their permanent funds to pay for services and avoid taxes. Others are spending nonrenewable revenue on current needs instead of investing it in permanent funds. By treating nonrenewable revenue and the permanent fund as disposable income, the long-term value of the trusts is reduced.
Unsustainable spending prioritizes current beneficiaries over future generations who will inherit fewer resources, and therefore have less annual income. Spending down the trust also incentivizes increased land sales and resource extraction because governments are essentially just moving this income through the permanent fund and spending it instead of retaining the value in perpetuity. If we look to the past, we see that in states that did not retain income from land sales, most state trust lands were sold off quickly.

II. INTRODUCTION

State trusts, which are managed by states to generate revenue for schools and other public institutions, consist of two parts: state trust lands and a financial permanent fund. These trusts must follow two principles: first, they are held as fiduciary trust that must maximize revenue for the beneficiaries, and second, they must be maintained in perpetuity.[1] In this paper, which is part of a series on state lands, we focus on the permanent funds, which were created to ensure the permanence of the "whole trust" (lands plus financial fund).

We first explain the role these funds play in the trust lands system and define a benchmark to determine whether they are being managed for long-term sustainability. We then describe several states' permanent fund policies and assess whether they meet that benchmark. Finally, we explore potential implications of permanent fund mismanagement and recommend best practices to meet the benchmark.

Trust Lands

Nationwide, state trust lands make up about 51 million acres.[2] They are a large portion of the landscape when compared to lands managed by the Forest Service (192 million acres) and the Bureau of Land Management (270 million acres).[3]

State trust lands, while managed by and for public entities, are not public lands in the same way that federal lands are public lands. While federal public lands are multi-use lands managed for all U.S. citizens, state trust lands are managed narrowly to maximize revenues for specific beneficiaries, primarily public schools.

Revenue from trust land management comes from a variety of sources that fall into three broad categories. The first, renewable income, includes activities such as grazing leases, other agricultural leases, timber sales, and commercial property leases. The second, nonrenewable income, includes activities that generate one-time revenue such as oil and gas pumping, mining, and other mineral extraction. Finally, some states sell lands.

The trust lands and their revenue sources are discussed in depth in another paper in this series, which can be found at https://headwaterseconomics.org/topic/public-lands/state-trust-lands-model.

Permanent Funds

The permanent funds—financial funds invested on behalf of trust beneficiaries—were created to ensure that the value of the whole trust would be maintained in perpetuity. This is accomplished by depositing any land sales or nonrenewable resource revenue into the permanent funds instead of spending it. Courts have repeatedly confirmed the legal mandate to maintain the whole trust value.

This permanence mandate developed between Ohio's statehood in 1803 and Arizona/New Mexico's admission to the Union in 1912. The first states to receive land grants to benefit public schools[4] quickly sold their holdings, with immediate (but not long-term) benefits to schools.[3,5] However, as the nineteenth century wore on, some states began to add provisions to their constitutions so that these land grants would benefit both current and future students.[6] Subsequently, at the federal level, enabling acts that authorized statehood began adopting similar provisions,[7] requiring that states deposit land sale revenues in a "permanent school fund" from which only interest could be spent on schools. The clear implication of these stipulations was that the original value of granted lands should be preserved, whether in land or a financial fund. Every state examined in this paper specifies, in either its enabling act or constitution, that a permanent or irreducible fund be created for land sale (and sometimes other lands) revenues.

The intention of federal enabling acts and state constitutions to preserve the overall value of the original land grant has been confirmed several times by the courts. For example, in *Branson School District vs. Romer (1998)*, the 10th Circuit judgment writes that Colorado's Enabling Act specifically states that "Congress…provided for the permanence of the benefit of these assets for the common schools."[8] All western states with significant state trust lands[9] have very similar language in their enabling acts,[10] implying this interpretation would apply to them as well. This was confirmed in Arizona in *Pierce vs. Ducey (2018)* when Judge Wake wrote that by increasing spending from the permanent fund, "Arizona invaded the principal of the trust to the detriment of future Arizona school children, who were supposed to have the benefit of a perpetual, undiminished trust fund from which only the income could be spent by any generation."[11]

In this paper, we will not evaluate whether states are meeting their legal obligation of permanence, but will instead evaluate whether they are adhering to the principle of maintaining a perpetual trust.

Evaluating Permanent Fund Policy

In this paper, we focus exclusively on permanent fund policy. We evaluate whether states are adhering to the principle of maintaining the value of the whole trust. For states that are not, we examine reasons for mismanagement and consequences of overspending.

We look to research on preserving the value of university endowments to choose a permanent fund spending benchmark: the annual rate of distribution from the fund should be equal to the long-term rate of return from fund investments. We compare data on actual distributions to our benchmark to assess whether states' spending policies are consistent with the whole trust model.

We then provide an overview of several states' recent policy changes, examine data on permanent inflows and outflows, and discuss whether the state is meeting our proposed standard. Finally, we discuss the potential consequences of these policies.

III. WHOLE TRUST MODEL

To effectively assess states' permanent fund management policies, we first need a more complete understanding of how these funds and the corresponding trust lands operate. Most states use variations on the system described below.[12]

As Figure 1 shows, state trusts consist of two types of assets: land and financial investments. Every year, both produce revenues which are distributed to the beneficiaries. From land, these revenues include grazing lease payments, timber income, commercial leases, and other income from renewable sources.

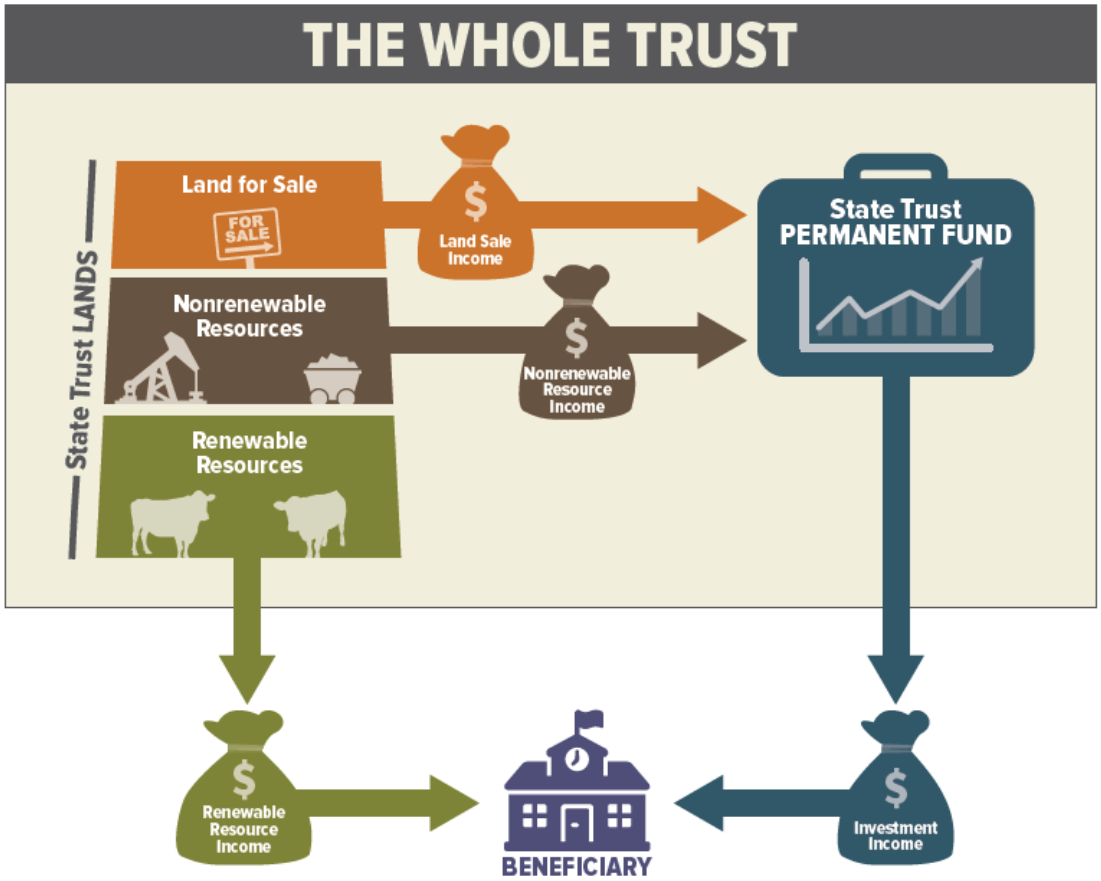
From the financial investments (the permanent fund), these distributed revenues originally consisted only of interest on the fund balance. Most states now have different distribution policies. In any case, however, distributions from the permanent fund should not diminish the value of the combined land and financial assets or their ability to produce income in the future.

Additionally, most years some of the trust land assets are sold, and that money is transferred to the permanent fund as a financial asset. (Permanent fund money is also occasionally used to buy land assets.) These trust land asset sales include both land sales and sales of nonrenewable resources such as oil, gas, and coal.

The overall value of the trust (or the "whole trust") includes both land and financial assets, and its combined value must be maintained in perpetuity. We will call this standard the "Whole Trust Model."

Figure 1: The Whole Trust

The permanent fund and trust lands comprise the whole trust. Two types of trust revenues are distributed to beneficiaries (public institutions) annually: investment income from the permanent fund, and renewable resource revenue from the trust lands. Additionally, when land or nonrenewable resources are sold (diminishing the value of the trust lands), that money is deposited in the permanent fund, thereby preserving the value of the whole trust.



Investment Policy Changes

In the last 20 to 30 years, in many states the management of trust financial assets has changed substantially. This change began when states moved from allowing only fixed-income investments to allowing investing in stocks; a timeline showing this trend is shown in Table 1. This investment change had three primary effects on the permanent funds:

1. The average annual rate of return of the funds increased dramatically.
2. Most permanent fund revenue began to come from dividends and capital gains instead of just interest.
3. Because of the volatility of stock markets, permanent fund revenue streams became much more volatile.

Table 1: Timeline of Changes in Permanent Fund Investment Types Allowed
Over time most states have moved to allow increased investing in stocks, which has caused changes in revenue and necessitated changes in distribution policies.

Year	Investment Policy Change
1965	New Mexico Constitutional Amendment allows an increase from 25% to 50% of fund to be invested in corporate stocks and bonds.[13]
1988	Oregon Constitutional Amendment allows 50% of fund to be invested in stocks.[14]
1990	New Mexico raises stock investing limit to 65% of fund.[13]
1995	Utah passes a law allowing up to 80% of permanent fund to be invested in stocks. [15]
1997	Oregon Legislature increases equity investment cap to 65% of fund.[14]
1998	Arizona Constitutional Amendment (Prop 102) allows 60% of fund to be invested in stocks. Distribution formula was five-year rolling average of return less inflation.[16]
1999	U.S. Congress amends Arizona Enabling Act to approve Prop 102's changes, including investing in stocks and distribution formula changes.[16]
1999	Judge rules that Washington permanent fund may be invested in stocks.[17]
2007	Washington law passes stating that investing the permanent fund in stocks is legal.[1717]
2016	Colorado law passes allowing investing in stocks. [18]

One result of these changes was that the annual beneficiary distributions specified by enabling acts, which consisted only of interest from the fund, was much less than the total (average) annual revenue from stocks and bonds.

Additionally, increased volatility meant that even if states distributed annual revenue from all permanent fund investments (stocks and bonds) every year, beneficiaries would receive windfalls in some years and zero distributions in others.[19] Furthermore, these small or nonexistent distribution years would fall in economic downturns when beneficiaries most needed additional funding.[20]

Optimal Distributions Benchmark

Many states recognized the income changes that would come with updated investment strategies and modified distribution policies at the same time as or after investment policy changes. However, these new distribution policies have been highly contentious, have sometimes turned out to be unworkable, and have had varied or unclear effects on the whole trust. States need an optimal distribution benchmark against which they can measure these policies. The ideal solution would allow them to maintain the whole trust value while reducing volatility of distributions.

Optimal distributions from state trust permanent funds have not been examined extensively by economists. However, university endowment funds have histories and goals similar to permanent funds and have been studied extensively, so there are lessons to be learned from their experience.

In the 1950s, many university endowments had invested significant portions of their portfolio in stocks but continued to distribute only dividends and interest.[21] In the 1970s, several economists (employed at these universities) proposed frameworks for the goals of their endowments, theoretically optimal distributions, and practical formulas for approximating these optimal distributions,[22] while still reducing annual variation. Overall, these economists agreed that a central goal of the endowments was "to have a rate of consumption…which can be maintained indefinitely"[23] and "a spending rule that protects the real value of the corpus of the endowment fund." [24, 25] Litvack, Malkiel, and Quandt[24] explain that the optimal distribution to maintain the fund's real value in perpetuity and reduce volatility is the long-term rate of return from dividends, interest, and capital gains, less the long-term inflation rate, multiplied by the market value of the fund:

*Distribution = [rate of return from (dividends + interest + capital gains) – inflation rate] * market value of fund*

or

$$Y = [(d + i + c) - g] * M$$

where Y is the distribution, d is the rate of return from dividends, i is the rate of return from interest, c is the rate of return from capital gains, g is the long-term inflation rate, and M is the market value of the fund.[26]

Under this policy, in recession years, the fund would distribute more than it earned, losing some value, but in unusually high growth years, the fund would distribute less than it earned, recouping value lost in recession years. Thus, in the long-term, the value of the fund would be maintained.

While this standard is theoretically optimal, it is difficult for states to adopt concurrently with investment policy changes. This is because fund managers do not know their long-term rate of return when they implement a new investment policy and need to choose a distribution formula. Additionally, because each state has a different proportion of its fund approved for investing in stocks, and different states' investment teams have varying levels of risk-tolerance in their investments, they cannot look to other states to choose a rate of return. As a result of this uncertainty and political forces, states have pursued a variety of permanent fund distribution policies. (In Appendix B we suggest practical approaches for policies that approach the optimal benchmark described here.)

In the following sections, we will compare state distribution policies to the standards outlined above.

Methods

For this paper, we have compiled data on five western states' permanent fund balances, rates of return, and distributions every year. This allows us to calculate each state's long-term rate of return. For these states we have data from both the Great Recession and the period of growth since that time, giving balanced estimates of these rates (Table 2). We then estimate each state's theoretically optimal distribution amount and compare it to the actual distribution each year.

Table 2: Long-Term Rates of Return Less Inflation, the Optimal Distribution Rate

State	Long-term rate of return, less inflation
Arizona	5.14%
Colorado	1.48%
New Mexico	3.97%
Utah	4.68%
Washington	4.1%

We conducted this analysis for several states for which we could obtain long-term data. Distribution policies and policy drivers vary between states and over time. This variation allows us to draw out key lessons learned and policy implications regarding how state permanent funds are managed.

Below are example figures that demonstrate optimal distributions vs. actual distributions and the volatility of the funds. We use these figures to describe the distribution policies of each state in Section IV below.

Figure 2 shows how to interpret the graphs comparing actual and optimal distributions. The black dots are the calculated optimal distribution amount—the amount a state should theoretically be distributing to beneficiaries every year. The orange bars are the actual amount that the state distributed to beneficiaries in a given year.

When the state is distributing amounts consistent with the mandate to preserve the value of the whole trust, the orange bars (actual distributions) will match the black dots (theoretically optimal distributions). When the black dot is above the orange bar, the state distributed less than optimal amounts in that year and is favoring future beneficiaries over current beneficiaries. When the orange bar is higher than the black dot, the state distributed more than the optimal value-preserving amount and is favoring current beneficiaries over future beneficiaries.

Figure 2: Distributions Interpretation

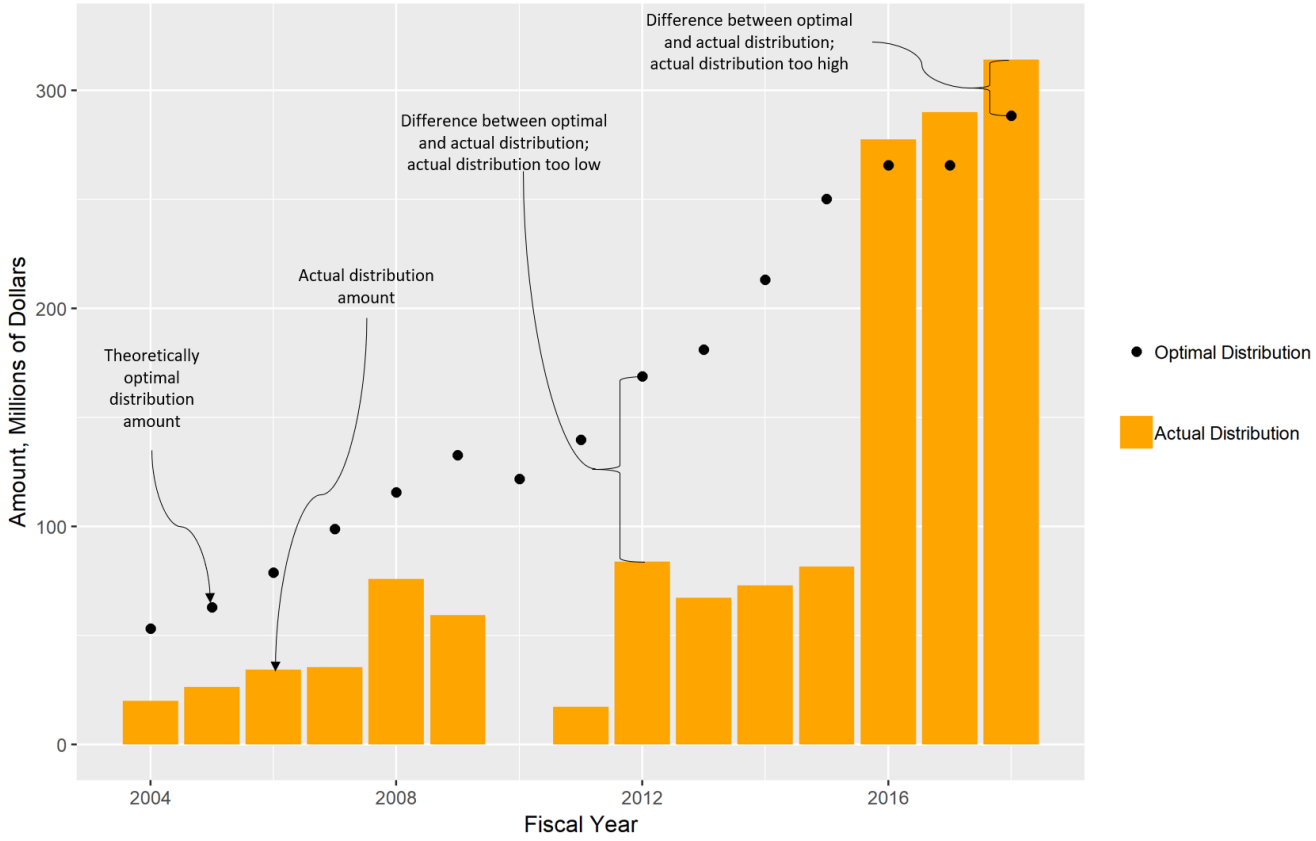
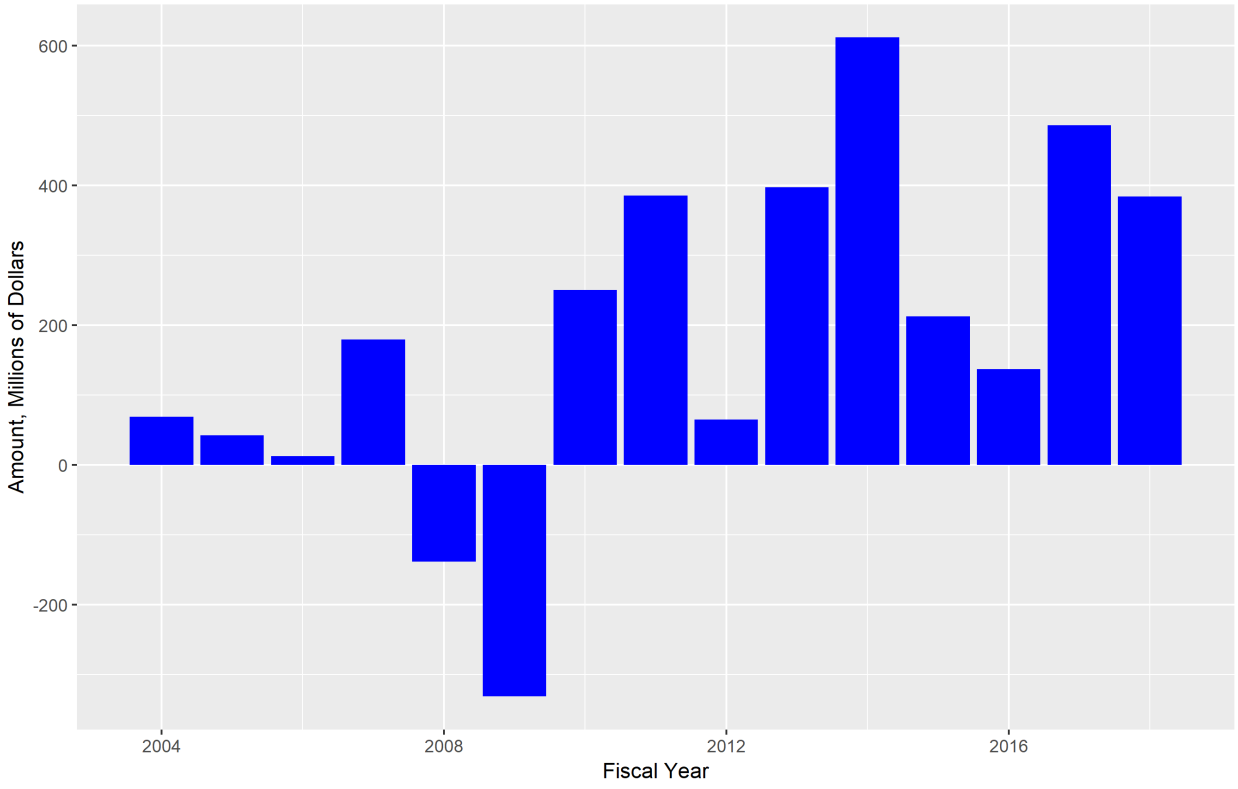


Figure 3 shows the volatility of investment income. The blue bars are the amount of investment income, less inflation, that the fund earned in a given year. We can think of this as either the rate of investment return, less inflation, multiplied by the fund balance, or as the amount of investment income less the amount needed to maintain the real value of the fund after inflation.

These bars show the volatility of income, demonstrating that a strategy that simply distributed that amount every year would be extremely impractical for beneficiaries, who would receive large positive amounts in some years and large negative amounts in other years. Practically, states can't distribute negative amounts (schools can't return money to the fund), so even if distributions were zero in those years, the fund would lose value over time. This is why an alternative distribution strategy that incorporates long-term average rates of return is necessary.

Figure 3: Volatility of Permanent Fund Income Less Inflation
This graph shows the amount of investment income, less inflation, that the fund earned in a given year. Importantly, this is different than the amount distributed to beneficiaries.



IV. STATE PERMANENT FUND MANAGEMENT IN PRACTICE

In the last 20 years, almost every state studied has seen some political wrangling over permanent fund distributions. In some states, the percentage of funds distributed has markedly increased. In other instances, politicians have pushed for (and sometimes passed) measures diverting distribution money to education-related expenses that do not directly benefit public school students. In these cases, either current or future students stand to lose. Current students lose if their share is reduced and overall

distributions remain the same, and future students lose if current distributions rise. Finally, some states have seen little pressure on their funds, and financial managers have made distribution decisions that preserve the complete trust value.

Here we analyze data and describe recent policy histories of several western states. Difficulty in getting data restricts us from including all western states with state trust lands, but the states included demonstrate a variety of policy approaches to changing permanent fund distributions, the effects of these policies, and how our benchmark can be compared to actual policy.

Arizona

Arizona has a large permanent fund of $6.1 billion and distributed $321 million to beneficiaries in fiscal year 2019. Since first allowing stock investments in 1999, Arizona has changed its distribution policy several times in response to financial and political pressure. Most recently, in 2016, voters approved a 6.9% distribution rate, higher than the optimal rate for long-term fund sustainability. To avoid legal challenges to this policy, Arizona senators added a rider to the 2018 U.S. omnibus spending bill authorizing the change.

Arizona, upon statehood, was given extensive land grants with a restrictive permanence mandate.[27] As a result, it has retained 9.2 million surface acres, 88% of its original grant.[28, 29] In fiscal year 2018, Arizona distributed $72.4 million in state land revenues ($64 million to common schools) and $317 million from permanent fund revenues ($295 million to common schools), for a total of $389.4 million.[28] Arizona's permanent fund is valued at $6.1 billion (FY 2019), with the common schools fund alone valued at $5.6 billion.[30]

In the 20 years since Arizona approved permanent fund investment in stocks, the state has fought political and legal battles over permanent fund distributions. In 1998, Arizona voters approved a constitutional amendment allowing investments in stocks and specifying distributions as the five-year average investment return less inflation.[31, 32] In 1999, Congress changed the state's Enabling Act to make this legal. The state began implementing the investment change in 2000 and used its new distribution policy for the first time in 2004.[33]

At face value, this was a theoretically sound and pragmatic distribution formula, as it would protect the balance of the fund and the averaging over time would reduce volatility of distributions. However, these best intentions were derailed by the unforeseen and historic market plunges of the Great Recession. The huge market losses of 2008 and 2009 meant that the calculated distribution in 2010 was negative; beneficiaries received no payouts that year.

In hindsight (see Figure 5), we can see that with a longer time period of averaging, or with 1-2 years' patience to recover from the Great Recession, beneficiaries would have begun to receive larger payouts under this system. Arizona essentially suffered from bad timing—it started a new, unproven system just before a historic market crash. The result has been 10 years of political jockeying and distribution policies that are not rooted in sound investment principles.

In 2012, in reaction to 2010's zero distribution, voters approved a change to a 2.5% distribution through 2021. From Figure 4, we can see that this policy led to distributions smaller than principal-preserving distributions, so the real trust balance grew over this period. Finally, in 2016, voters approved Proposition 123, which increased distributions to 6.9% through 2025 (without further legislation, distributions will revert to 2.5% in 2025).[31]

In Arizona, the movement to increase distributions from the permanent fund has been driven largely by the Republican governor with support from conservative research institutions. However, many Democrats have also supported increased distributions. [34, 35, 36]

Despite the governor's insistence that these distribution increases were legal under the current Enabling Act, the courts ruled otherwise. In May 2018, a judge ruled in *Pierce vs. Ducey* that "Arizona invaded the principal of the trust to the detriment of future Arizona school children, who were supposed to have the benefit of a perpetual, undiminished trust fund from which only the income could be spent by any generation."[11] However, in March 2018, Arizona's congressional delegation added a rider to the omnibus spending bill specifying that Proposition 123's amendment was legal under federal law. Therefore, *Pierce vs Ducey* was only relevant to distributions between the amendment's passage and March 2018, and the lawsuit has not progressed.[36, 37, 38]

Regardless of its legal merits, the 6.9% distribution policy results in spending greater than a sustainable fraction of the permanent fund. In Figure 4, we can see the distribution amounts (orange bars) are larger than the optimal long-term sustainable distribution amounts (black dots) in the last three years when this policy has been in effect. Arizona is, therefore, now deviating from the whole trust model as shown in Figure 5. The red arrow shows distributions above long-term sustainable distribution amounts. We will discuss the consequences of this type of policy (which we will see to an even greater extent in other states) in a later section.

Figure 4: Arizona Permanent Fund Optimal Distributions vs Actual Distribution

From 2004 to 2014, Arizona distributed (orange bar) less than the optimal amount (black dot), prioritizing future beneficiaries over current beneficiaries. Since 2016, Arizona has distributed more than the optimal amount (orange bar above black dot), devaluing the whole trust and prioritizing current beneficiaries over future beneficiaries.

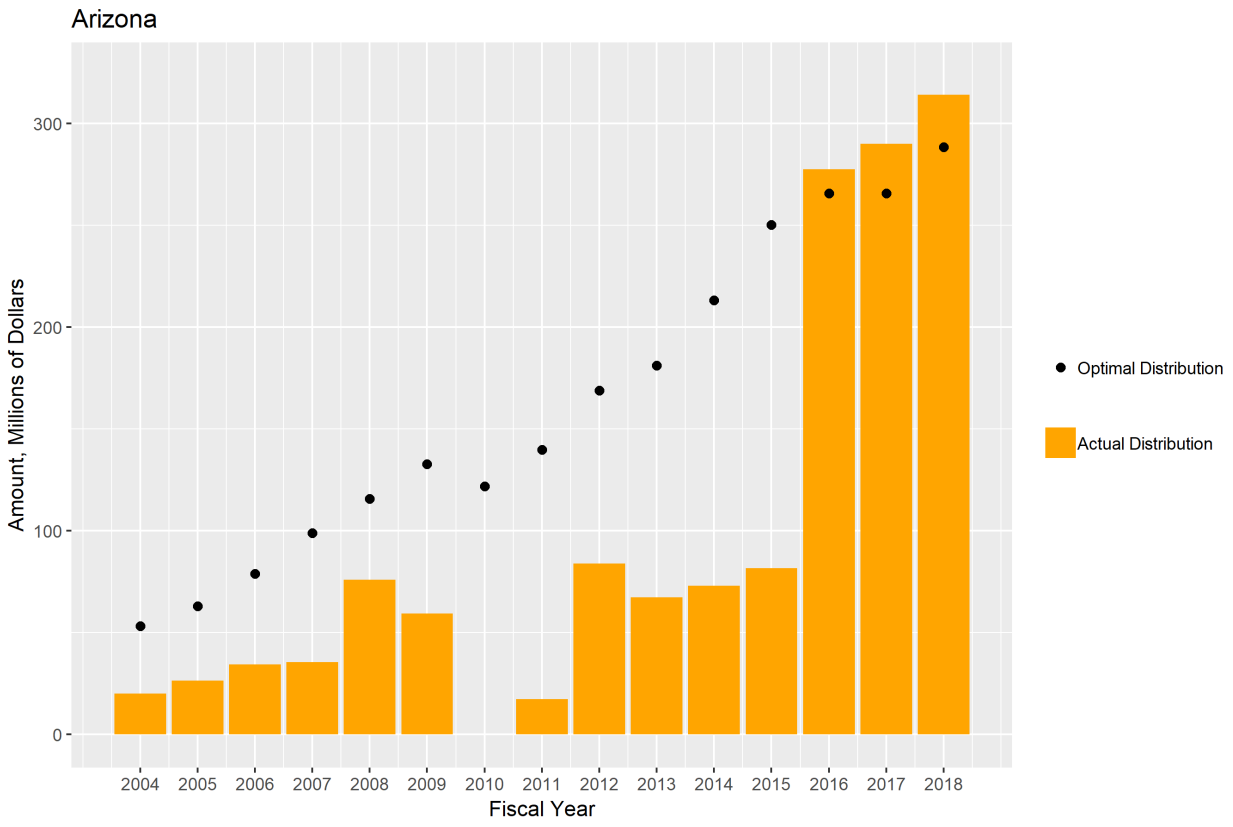
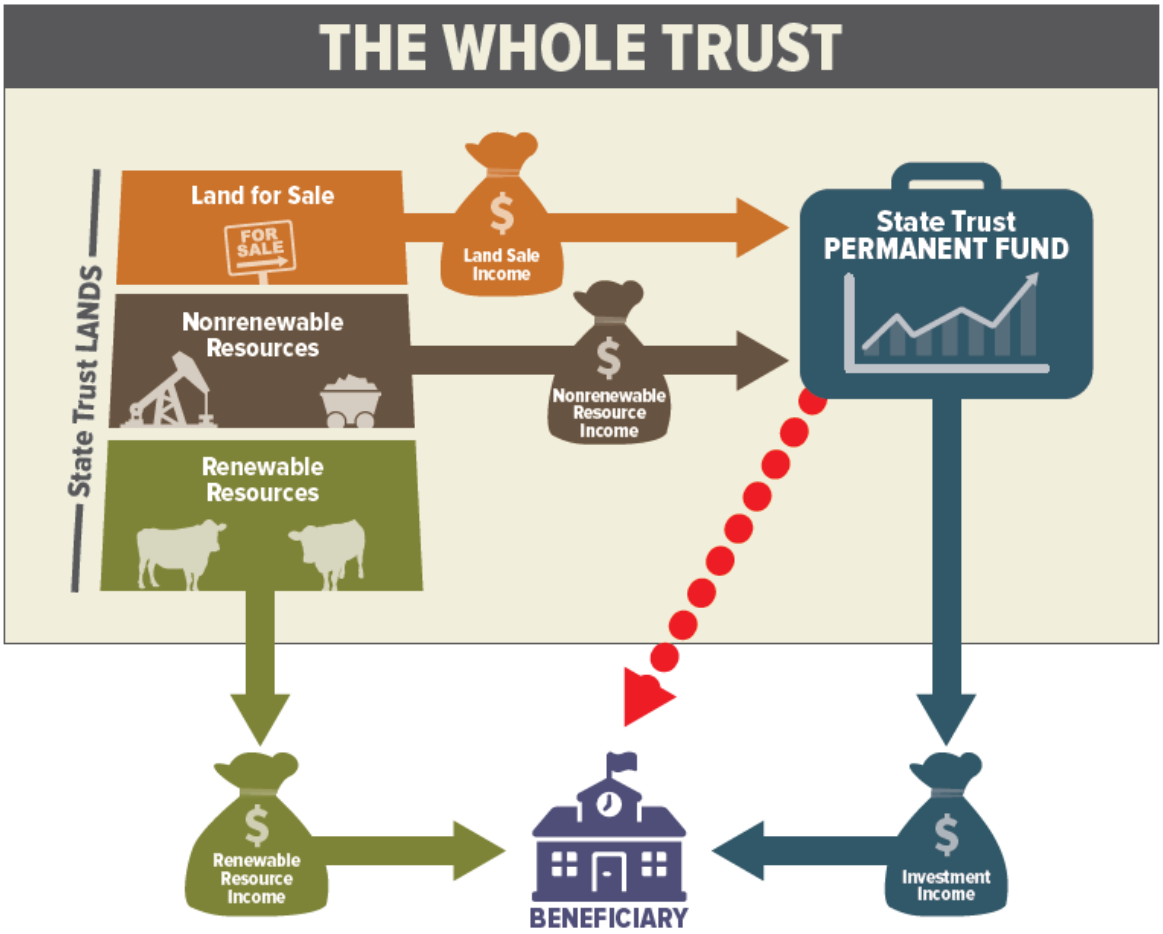


Figure 5: Arizona is Diverging from the Whole Trust Model

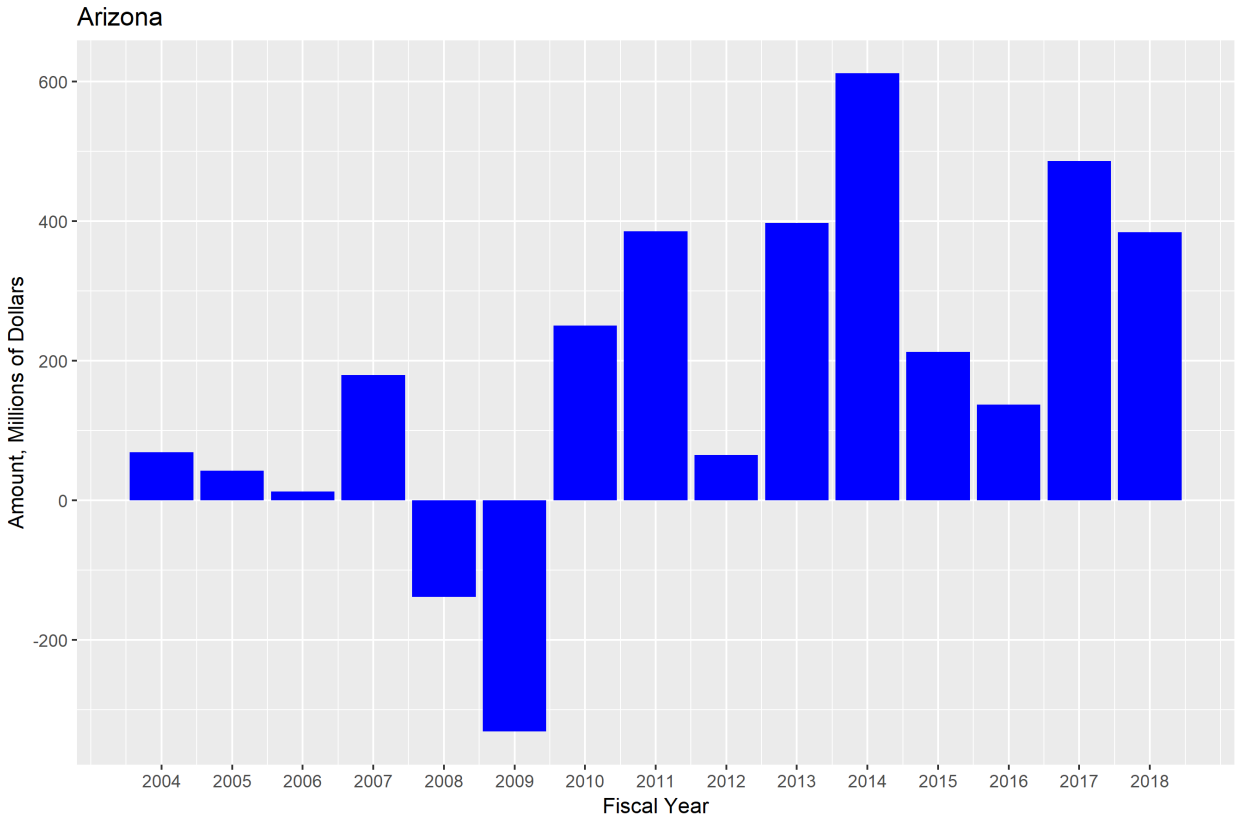
In this figure, the blue arrow shows sustainable distributions that will maintain the value of the whole trust. The red arrow signifies that Arizona is distributing more than a sustainable amount from the permanent fund, thus shrinking the value of the whole trust.



Arizona also is a good example of why annual distributions equal to investment income less inflation are volatile and therefore problematic (see blue bars in Figure 6). For example, in years 2017 and 2018, beneficiaries would have received large distributions. However, in years like 2016 or especially 2009, beneficiaries would have received low or negative distributuions.

Figure 6: Arizona Permanent Fund Income Less Inflation

The blue bars illustrate the volatility of permanent fund income given a portfolio heavily invested in stocks. If Arizona simply distributed income less inflation every year, beneficiaries would receive windfalls some years, near zero distributions other years, and in recession years would theoretically owe money back to the fund.



Colorado

Colorado has a permanent fund of about $1 billion, from which $21 million was distributed in 2018. Since 2008, Colorado has changed its policies on deposits in the permanent fund, distributions from the fund, and fund investments allowed. In 2008, Colorado moved from distributing all nonrenewable land revenues to the permanent fund to a system where the first 50% of all land revenues were distributed. Most years this amount includes substantial nonrenewable revenues. Colorado has also moved from policies where a portion of investment income was distributed to a policy where all investment income may be distributed. Finally, Colorado recently began investing in stocks, meaning that their policy distributing all investment income will lead to volatile distributions.

Colorado was the first state to have an enabling act mandate to retain its trust in perpetuity[39]; despite this mandate it has only retained 2.8 million surface and 4 million subsurface acres of its original 4.8 million-acre grant.[29, 40] It has a modest permanent fund, valued at about $1 billion, from which (at first glance)

$21 million was distributed to beneficiaries (in this case, only schools) in 2018. In that year, $64.9 million was distributed from lands revenue.

Colorado, like many states, has made many changes to its permanent fund policies in the last 20 years. However, in Colorado these policies have covered not only permanent fund investment and distributions, but also which land revenues were deposited into the permanent fund. Before 2008, Colorado distributed all nonrenewable resource revenues into its permanent fund.[3, 41] However, in 2008 Colorado passed the Building Excellent Schools Today (BEST) Act, which specified that 50% of all land revenues (renewable and nonrenewable, though excluding land sales) be distributed to schools for capital construction.[42]

Since nonrenewable resource extraction leaves the land without its previous revenue-generating value, we consider these resources part of the whole trust value, which, if sold, should be transferred to the permanent fund. However, if more than 50% of land revenues in Colorado are nonrenewable, then the BEST distributions violate this principle. Even by the strictest definition of nonrenewable resources (only royalties, not bonus payments or mineral leases), this has been the case for four of the last five years. During the last five years, approximately 60% of Colorado land revenues have come from nonrenewable resource royalty payments, so about 1/6 of land revenues that were part of the whole trust (and which were sold in this period) have been spent. Essentially, the state is siphoning off whole trust assets before they can be invested as part of the permanent fund.

Colorado is also failing to maintain the permanent fund on the distributions side. In the early 2010s, Colorado distributed increasing amounts of permanent fund income, but continued to abide by its constitutional mandate that distributions not exceed fund interest and other income. However, in each year for which we could obtain data, these distributions caused the fund to lose real value because not enough income was retained for the balance to grow at the rate of inflation. Additionally, during this period the fund could only be put in fixed-income investments, so its long-term rate of return was an anemic 2.8%.[18]

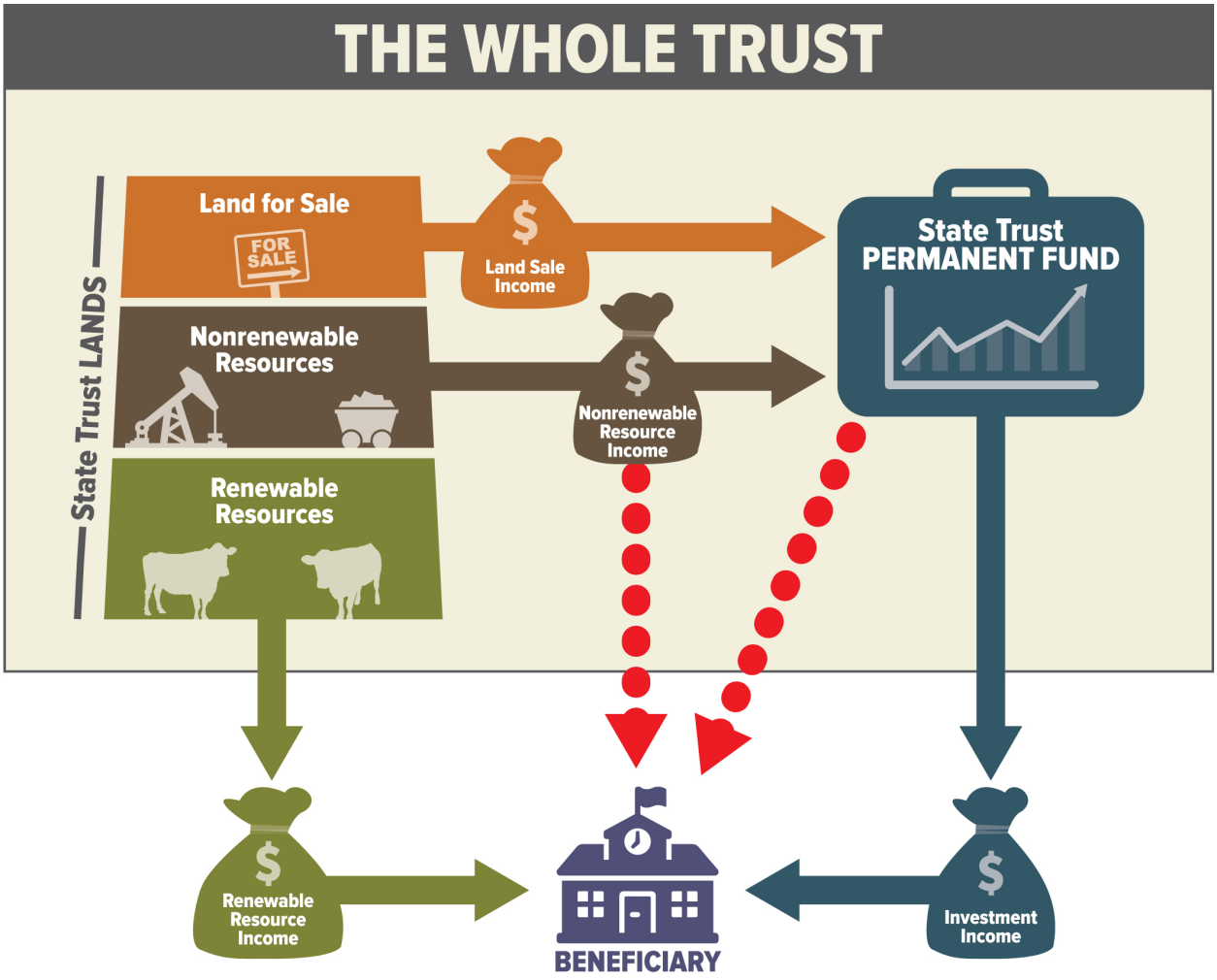
Though a late adopter, Colorado in 2016 changed investment policies to permit permanent fund investing in stocks and created a designated group to oversee its investment portfolio. As in other states, Colorado lawmakers took this opportunity to also change distribution policies. Instead of distributing a percentage of the fund, Colorado lawmakers have long required that a specific monetary amount be distributed from the fund (given that it was below the total amount of investment returns).[43] They have continued this trend in their new distribution policies, accelerating the amounts quickly from 2017's $21 million distribution to $41 million in 2020 (or the total amount of investment returns, if they do not reach these amounts). Any income beyond these amounts will be "credited as specified by the general assembly."[44]

This distribution policy fails to maintain the value of the trust. If investment income is below the distribution amount specified, it will all be spent and, given inflation, the real value of the permanent fund will shrink. If investment income is above the specified distribution amount, lawmakers can still choose to spend the entire amount, again shrinking the real value of the fund. In this case, lawmakers could also choose to retain some earnings in the fund, but they have no policy guidance on how much that should be in order to maintain the fund, neither spending too much nor too little in one year.

In Figure 7, we show the two ways in which Colorado is deviating from the whole trust model. The red arrow from nonrenewable resource income represents part of the value of the whole trust that is being distributed to beneficiaries. In this case, it represents part of the BEST distributions. The red arrow from the permanent fund represents the excess amount from the permanent fund distributed, over the amount that would maintain the real value of the trust.

Figure 7: Colorado is Diverging From the Whole Trust Model

In this figure, the blue arrow shows sustainable distributions that will maintain the value of the whole trust. The red arrow from the permanent fund signifies that Colorado is distributing more than a sustainable amount from the permanent fund, thus shrinking the value of the whole trust. The red arrow from nonrenewable resource income represents the money Colorado is siphoning from the trust before it is even placed in the permanent fund.



Colorado's distribution policy also fails to provide stable amounts to beneficiaries from year to year. In a good year, beneficiaries will receive the specified distribution amount or more, but in a bad year they could receive nothing. We need only to look to states like Arizona or New Mexico, which have long had portfolios heavily invested in stocks, to see that years of low or no investment income are frequent.

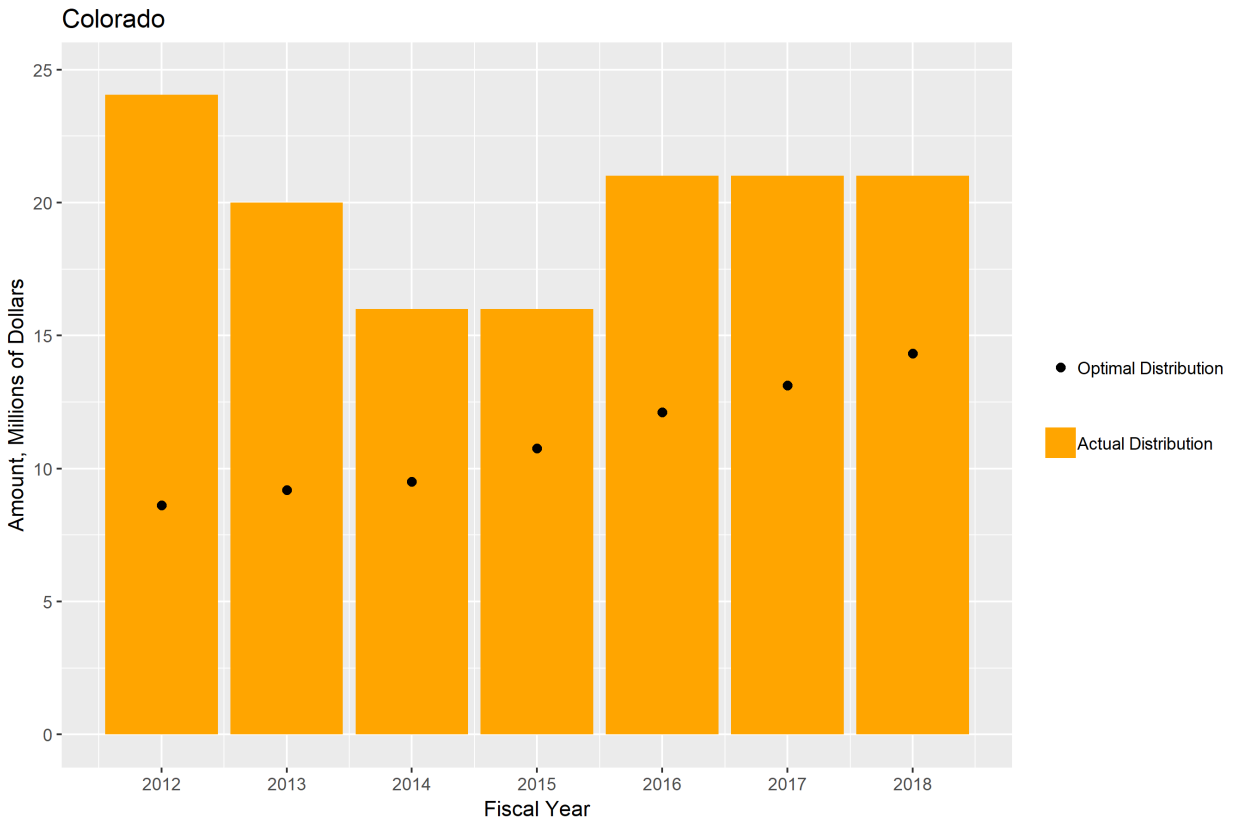
In Figure 8, we show optimal distributions if whole trust revenues (i.e., nonrenewable resource income) were not being funneled away from the fund. This diverted asset is essentially an additional permanent fund distribution, so the total distributions are actually higher than the orange bars shown in Figure 8. We see that even without accounting for these additional distributions, Colorado is distributing greater than optimal amounts of its fund (black dots below top of orange bars). If we accounted for the money siphoned away from the fund every year, this gap would be even greater.

It is important to note that our optimal distribution calculations for Figure 8 are based on Colorado's investment policies before it began investing in stocks (revenues for 2016 to 2018 suggest that Colorado has not yet transitioned its investment policies; these changes frequently take several years to implement). Therefore, these optimal distributions are appropriate for this period, which does not have stock investment income recorded yet. While the optimal percentage distributions will change with this policy change, Colorado's distribution policies mean that the state will continue to distribute amounts greater than those sustainable to maintain the fund.

For Colorado, we also don't have data for the recession years. This is likely to not bias our outcomes significantly because fixed income investment interest (the only income for Colorado in this period) is less affected by recession years. Additionally, if anything, we would be overestimating optimal distribution amounts based only on higher returns of non-recession years (the black dots in Figure 8 may be too high). Thus, our conclusion that actual distributions are higher than optimal distributions still holds.

Figure 8: Colorado Permanent Fund Optimal Distributions vs Actual Distribution

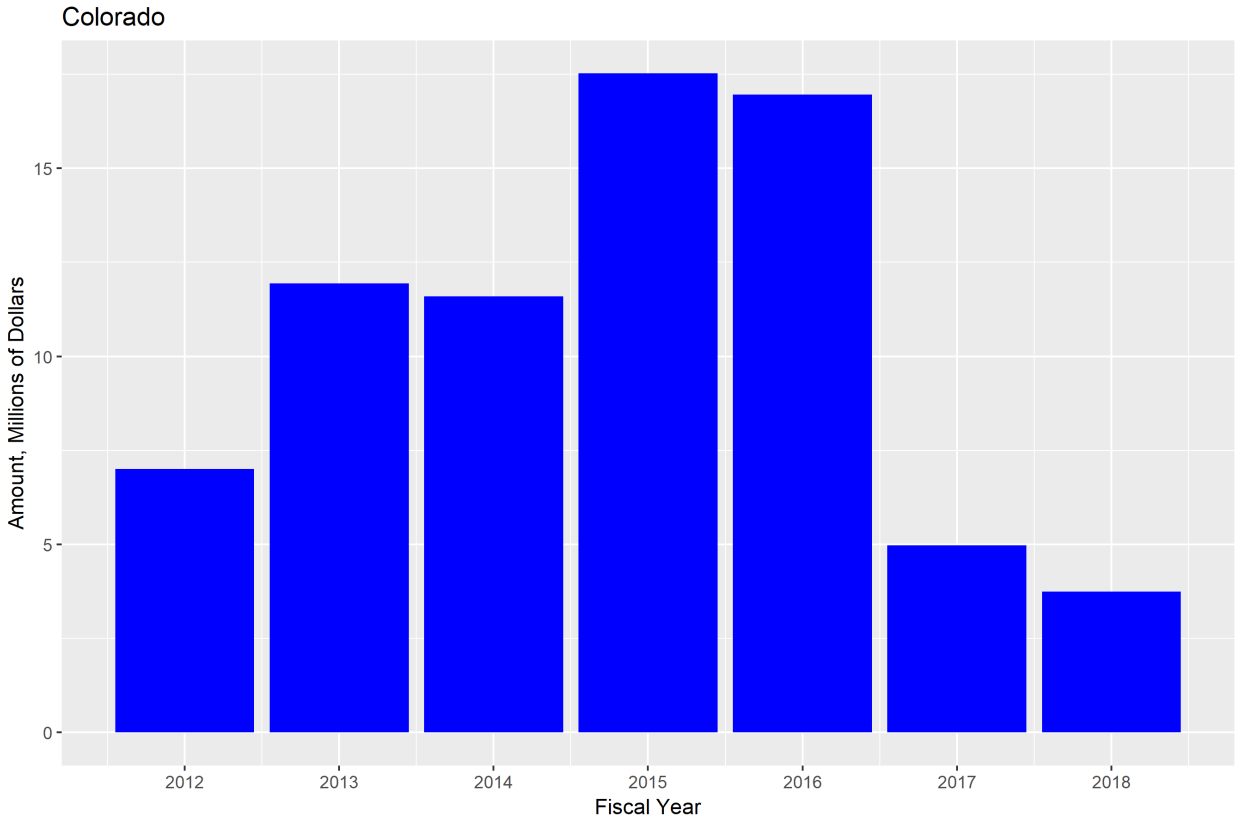
Colorado distributes more than is optimal; its permanent fund and whole trust are losing real value over time. Additionally, this graph underrepresents the gap between optimal and actual distributions since much of the whole trust value is being distributed annually before it ever reaches the permanent fund. Therefore, the actual distributions shown below underestimate the true total distribution made every year.



In Figure 9, we show investment income less the amount needed for the fund principal to grow with inflation, i.e., retain its real value over time. This graph demonstrates two main points: First, because Colorado only recently started investing in stocks, its investment income has been less volatile than other states. This will change, and year-to-year income will become more volatile as Colorado shifts its portfolio to invest in stocks. Second, because rates of return have been small in Colorado, investment return less inflation (shown in Figure 9) is much less than total investment income. This means that much of the variation in income in the graph is due to differences in inflation rates rather than differences in investment income.

Figure 9: Colorado Permanent Fund Income Less Inflation

In Colorado, the graph of income over time demonstrates two points. First, because Colorado only recently approved investments in stocks, its investment income has been less volatile than other states. As Colorado shifts its portfolio to be more heavily invested in stocks, year-to-year income will become more volatile. Second, here we have graphed income less the amount needed for the principal of the fund to grow with inflation, i.e., retain its real value over time. Since Colorado's investment income has been small relative to the size of the fund, some years most of the income will be required to compensate for inflation/retain the real value of the principal. Therefore, much of the variation in this graph is due to variation in inflation rates rather than investment income.



New Mexico

New Mexico has a large permanent fund—in 2018 the fund was valued at $17.9 billion and it distributed $689.2 million. Since 2003, New Mexico has consistently distributed more than an optimal percentage of the permanent fund. Political pressures to increase distributions from the fund continue today.

Like Arizona, New Mexico has retained much of its original large land grant. Its state trust lands currently comprise about 9 million surface and 12.7 million subsurface acres (the original grant was 13 million acres).[29] In fiscal year 2018, New Mexico distributed $139 million from land revenues ($111.8 to public schools) and $689.2 million from the permanent fund ($586.5 million to public schools).[45] At the end of FY 2018, the permanent fund was valued at $17.9 billion.[46] Notably, New Mexico's permanent fund returns in the last several years have been uncommonly volatile, ranging from a 0.25% return in 2016 to 13.5% return in 2017. This has resulted in the fund growing in some years and declining (in nominal dollars) in others.

New Mexico was an early adopter of investing its permanent fund in the stock market: by 1965, 50% of the permanent fund could be invested in stocks, and this increased to 65% in 1990. Before 1996, distributions from the permanent fund consisted of dividends and income from investments.[13] However, in 1996 New Mexico changed its distribution formula, specifying a 4.7% distribution every year, an amount specifically designed to "protect the permanent trust funds of the State of New Mexico from erosion."[47] These changes were approved by the U.S. Congress.[48]

In 2003, New Mexicans voted by a margin of less than 200 votes (<0.2 %) to increase distributions.[49] This constitutional amendment increased the baseline distribution amount to 5% and created even higher distributions for two periods: 5.8% from 2006-12 and 5.5% from 2013-16. These higher rates funded increased teacher pay for higher education levels.[50] Distributions above 5% would cease if the five-year rolling average (the amount used for these calculations) dropped below $10 billion.[51, 52]

As 2016 and the end of these distributions approached, legislators attempted to put another amendment continuing high payouts on the ballot but were unsuccessful.[43, 53] More recently, in 2017 through 2019, legislators have repeatedly introduced a bill to increase payouts by between 1 and 1.5% with the additional distribution going to early childhood education. These proposals have repeatedly passed the House and have strong support from the governor but have failed in the Senate. Votes are generally along party lines, with most Democrats voting for additional payouts and most Republicans against.[54, 55, 56, 57, 58] Curiously, New Mexico doesn't seem to have faced any notable legal barriers to these changes, despite previous Enabling Act amendments.

From Figure 10, we can see that since the 2003 distribution increase, New Mexico has consistently distributed somewhat more than a sustainable fraction of the permanent fund (orange bar above black dot). This is particularly obvious during the years 2006-2012, with distributions at 5.8% and the Great Recession shrinking the fund value. However, in each year shown, distributions are larger than the calculated sustainable distribution rate of around 4%. In Figure 11, we show how New Mexico is deviating from the whole trust model. The red arrow shows distributions above long-term sustainable distribution amounts.

Figure 10: New Mexico Permanent Fund Optimal Distributions vs Actual Distribution

New Mexico has consistently distributed (orange bar) more than the optimal amount (black dot), prioritizing current beneficiaries over future beneficiaries. In recent years, at distribution levels of 5% to 5.5% (2014-2018), actual distributions have come closer to matching optimal amounts.

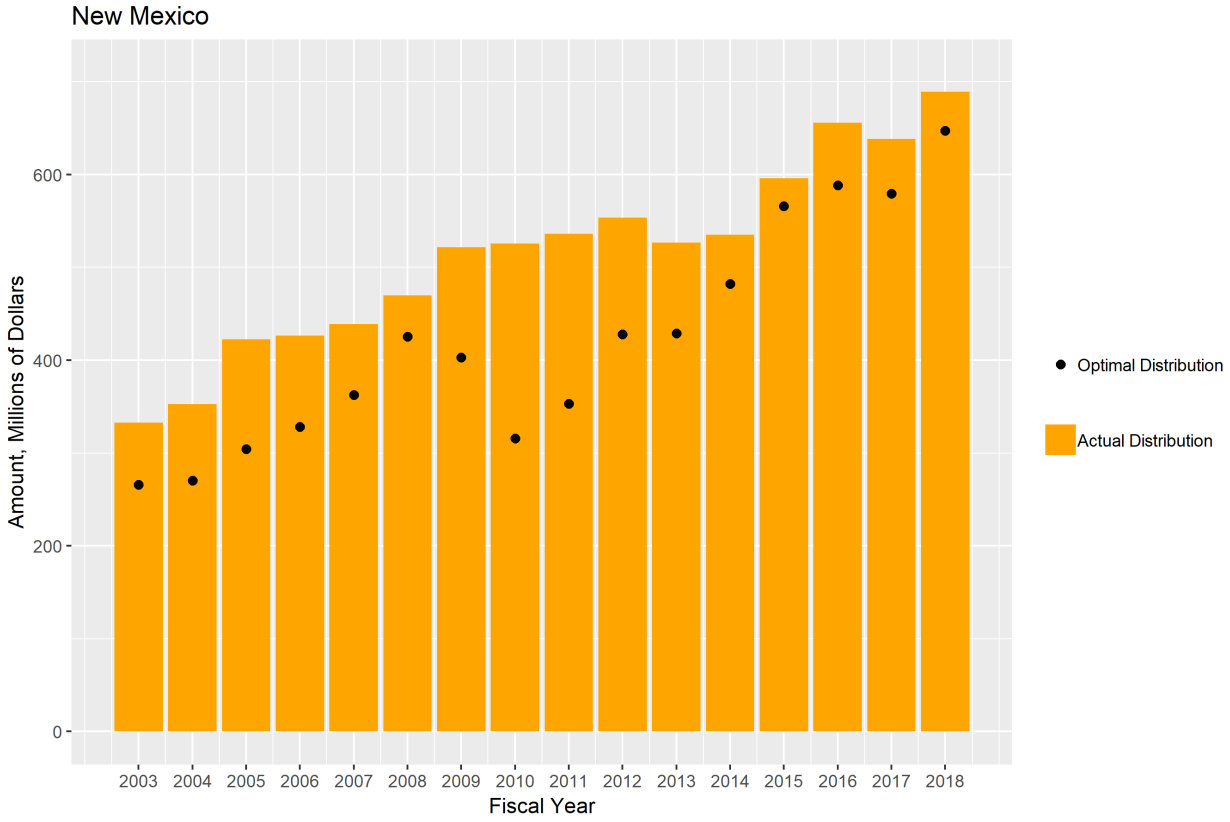
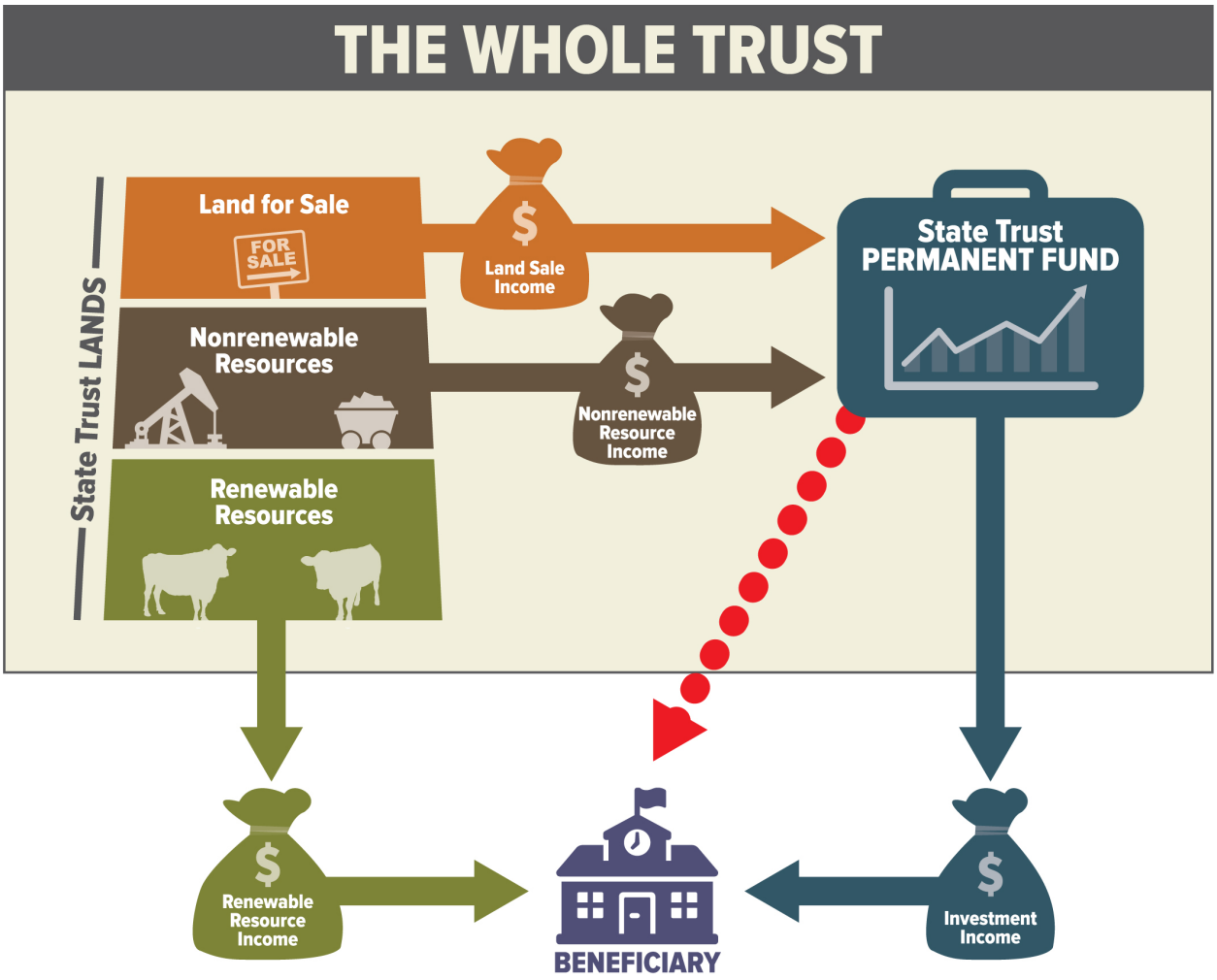


Figure 11: New Mexico is Diverging from the Whole Trust Model

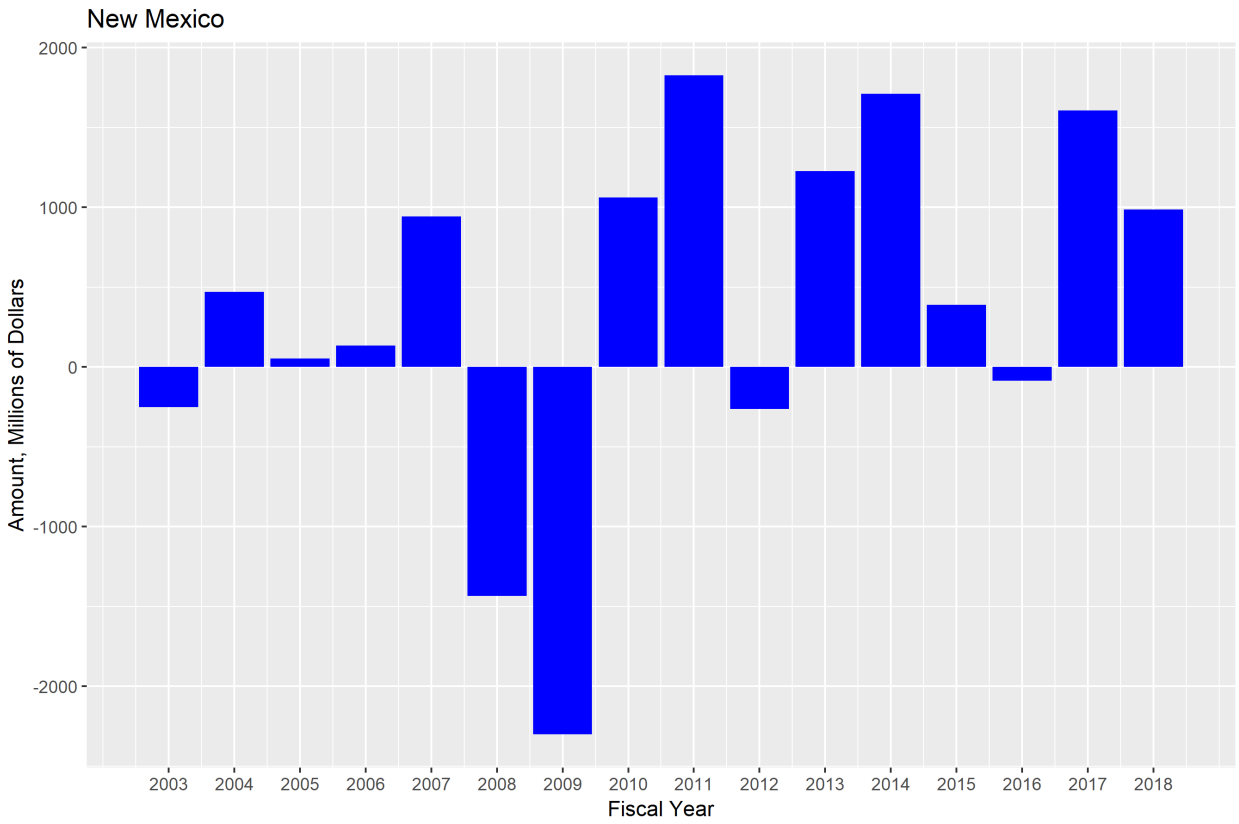
In this figure, the blue arrow shows sustainable distributions that will maintain the value of the whole trust. The red arrow signifies that New Mexico is distributing more than a sustainable amount from the permanent fund, thus shrinking the value of the whole trust.



New Mexico's annual investment income is even more volatile than Arizona's (see Figure 12). Its investment strategy results in a relatively high average annual rate of return, but negative returns in five of the 16 years shown. This volatility would clearly be undesirable for beneficiaries.

Figure 12: New Mexico Permanent Fund Income Less Inflation

The blue bars illustrate the volatility of permanent fund income given a portfolio heavily invested in stocks. If New Mexico simply distributed income less inflation every year, beneficiaries would receive windfalls some years, near zero distributions other years, and in recession years would theoretically owe money back to the fund.



Oregon:

Oregon has a relatively small permanent fund, which in 2018 was valued at $1.6 billion and it distributed $57.6 million. Data is not available on Oregon's permanent fund, so we are not able to evaluate its total distribution policies in maintaining the trust. However, in 2018 Oregon passed legislation diverting a fraction of this income away from schools to help fund its enormous unfunded teacher pension system.

Compared to other states, Oregon's state lands and revenues are small, but the associated permanent fund has significant value and, uniquely, is entirely dedicated to K-12 public schools. Oregon has retained only 23% of its original land grants for a current holding of about 776,000 surface acres.[29] Oregon distributes all land revenues, less management expenses, to the permanent fund.[59] All distributions to schools, therefore, come from permanent fund annual distributions. In fiscal year 2018, Oregon distributed $57.6 million from the common school fund. Oregon's common schools financial permanent fund has a market value of about $1.6 billion.[60]

Like other states, Oregon's permanent fund has faced changes through the years as policy responds to market conditions and external pressures. Beginning in 1999, the amount of the permanent fund distributed varied on a sliding scale from 2% to 5% of the balance. The highest amount (5%) was distributed for years when the balance grew 11% or more. In 2005, this policy was revised so distributions depended on three-year rolling averages of the permanent fund balance to reduce year-to-year variation.[61]

However, in 2009 as the Great Recession took hold and Oregon's education funding felt the squeeze, this policy was changed to a distribution of 4%, with a distribution of 5% if yearly principal growth exceeded 11%.[62]

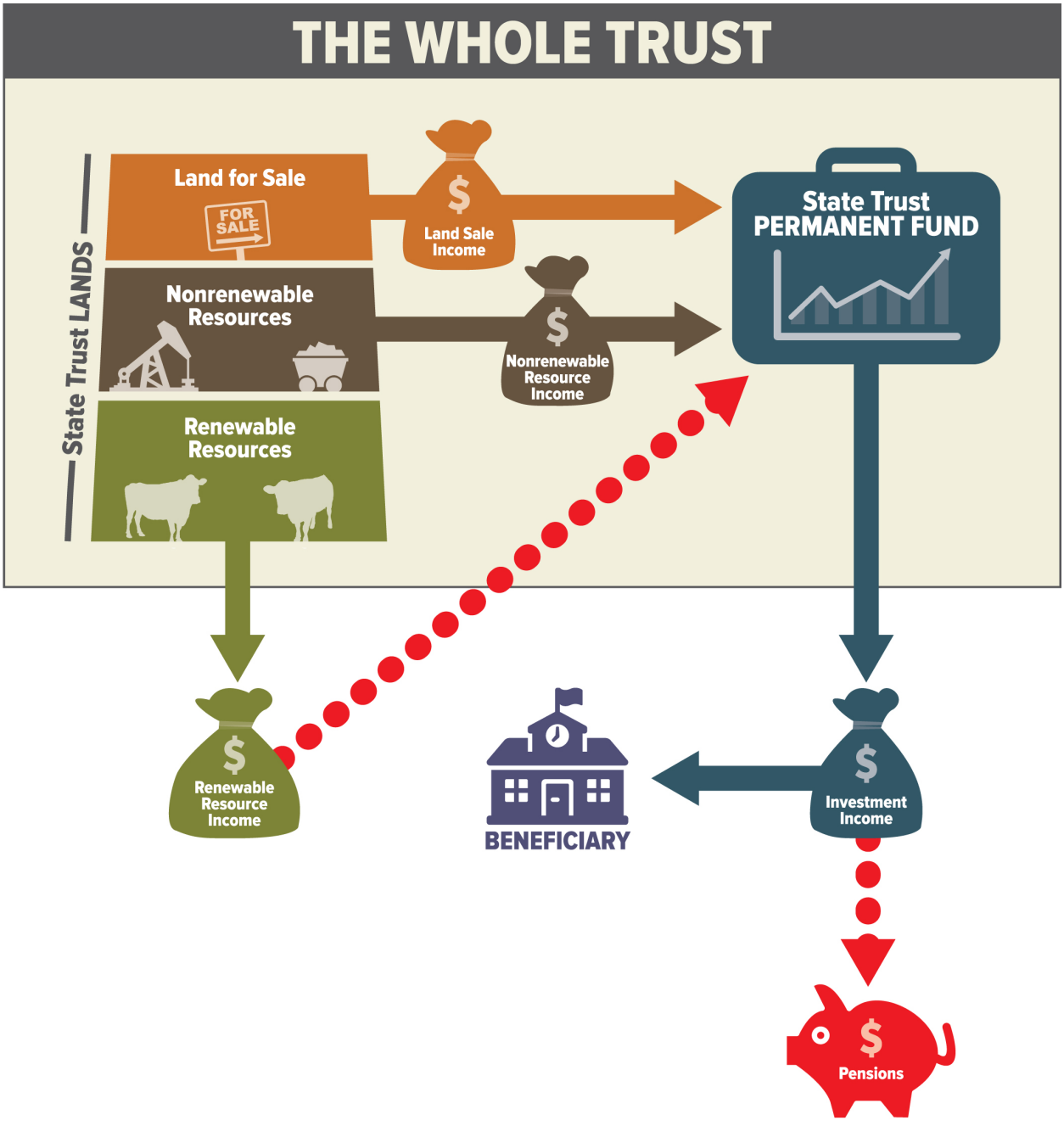
In June 2018, Oregon again changed its common school fund distribution policies in response to budget shortfalls. In response to overwhelming unfunded retirement fund obligations, the state passed legislation (SB 1566) mandating some income from unclaimed property (which otherwise goes into the permanent fund) be directed to these funds instead of school district budgets. In response to this redirection of funds, the Land Board opted to cut the distribution percentage for schools to 3.5%. Analyses of the change predict that this distribution amount will result in an overall (schools and retirement fund) distribution of around 4.5%, and that this will lead to a stable inflation-adjusted common school fund balance over time.[62]

Figure 13 shows how Oregon is deviating from the whole trust model. The red arrow from investment income demonstrates that some income is going to fund pensions, reducing the amount distributed directly to schools. Additionally, Oregon has chosen to distribute renewable resource income into the permanent fund instead of distributing it to schools.

Data on Oregon's permanent fund is unavailable, so we cannot judge the sustainability of its distribution policies. Like other states, however, the fund is facing political pressure that, in this case, is directly reducing funding for schoolchildren.

Figure 13: Oregon is Diverging from the Whole Trust Model

In this figure, the blue arrow shows sustainable distributions that will maintain the value of the whole trust. The red arrow from investment income demonstrates that some income is going to fund pensions, reducing the amount distributed directly to schools. The red arrow from renewable resource income demonstrates that Oregon is choosing to deposit these revenues in the permanent fund instead of distributing them directly to schools.



Utah

Utah has a distinct history of having spent down its modest permanent fund in the 1980s, and then enacted unique policies in response. Current distributions are 4% of the fund balance, but no land-based income is distributed directly.

Utah retains about 3.4 million of its approximately 6 million granted state trust acres.[3] Utah distributes all land revenues, less management expenses, to the permanent fund.[15] All distributions to the beneficiaries, then, come from permanent fund annual distributions. In 2018, $60 million in combined land sales and other lands revenue was deposited in the permanent fund. The total amount distributed from the permanent fund that year was $78.6 million. At the end of FY 2018, Utah's permanent fund was valued at $2.5 billion.

In the 1980s, Utah raided its permanent fund and spent most annual land revenues in response to funding needs during a recession.[3] In 1983, Utah's permanent fund was valued at about $69 million.[15] However, in the following five years, recession-year needs from schools led Utah to spend the majority of the fund; at its smallest it held only $22 million. In these years, the fund was not only spent down, but nearly all income (renewable and nonrenewable) was distributed to beneficiaries instead of being saved.[15]

This devaluing of the trust has directly influenced permanent fund and trust land management in the years since. In 1987, Utah amended its constitution to prevent raids of the permanent fund and distribute only interest. Then in 1994 a separate organization—the Utah School and Institutional Trust Lands Association (SITLA)—was created to maximize land revenues. Utah changed its constitution and policy such that all land revenues, renewable and nonrenewable, would be deposited in the permanent fund.[63, 64] The primary goal of both these changes was to rebuild the permanent fund.[15]

In alignment with this goal, in 1995 Utah allowed up to 80% of its permanent fund to be invested in stocks but retained its policy of distributing only interest.[15] This meant that dividends and capital gains would go to rebuilding the permanent fund.

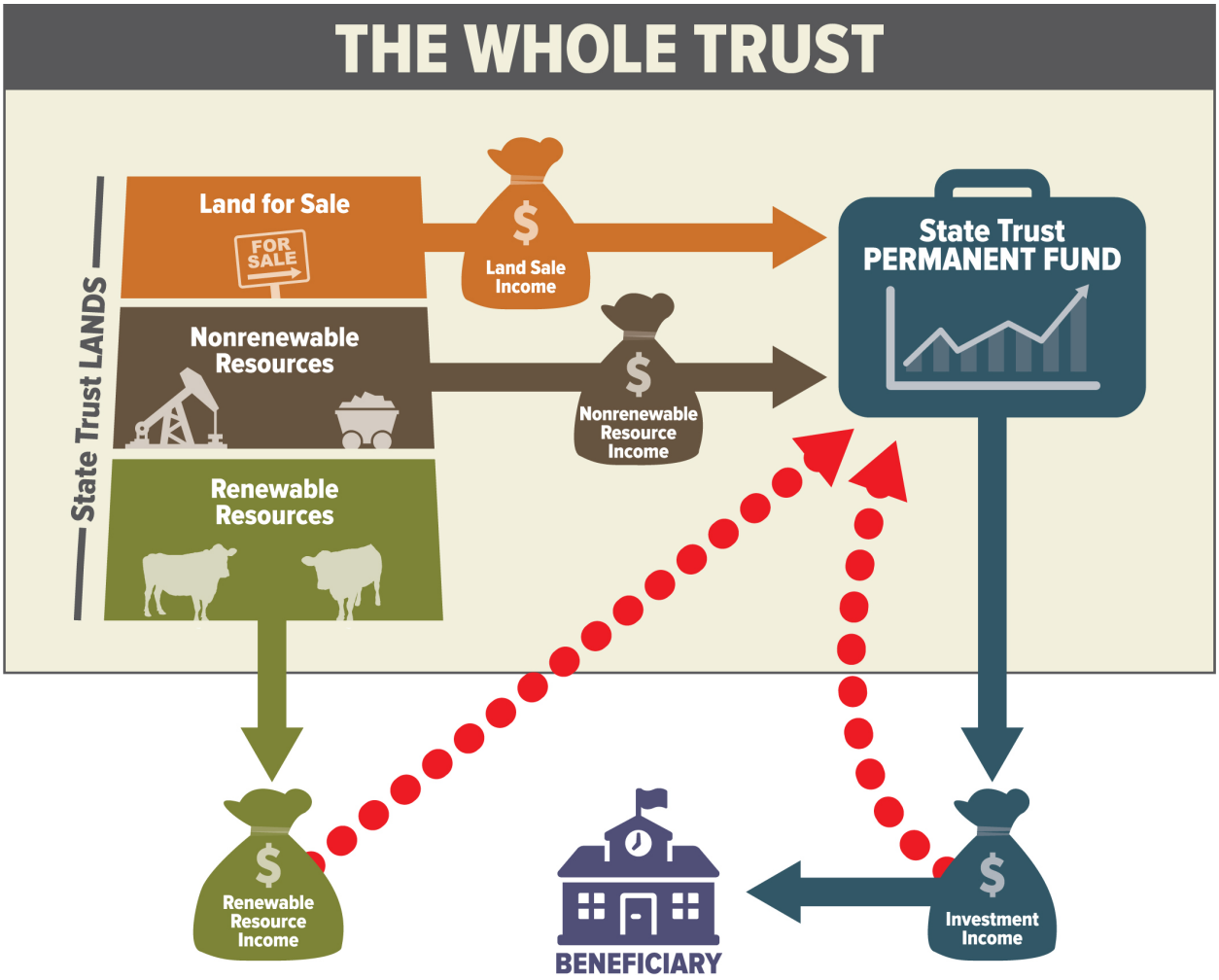
In the 2000s, these policies have been loosened somewhat. In 2002, voters approved a constitutional amendment allowing distribution of interest and dividend investment revenues and abandoned the measure that some be retained as a protection from inflation.[65]

More recently, in 2016 voters again backed a constitutional amendment, this time allowing distribution of any type of investment earning and specifying a 4% distribution.[66] This policy shift at least doubled annual distributions to each beneficiary. However, distributions remain below optimal distribution rates to keep the whole trust at its current value. The permanent fund is still growing at a rate that prioritizes future generations above current beneficiaries.

Figure 14 shows how Utah deviates from the whole trust model. The red arrow from investment income demonstrates that they are not distributing the optimal amount to the beneficiary, but directing some back to grow the permanent fund. The red arrow from renewable resource income demonstrates that instead of distributing this income to beneficiaries, it too is going to grow the permanent fund.

Figure 14: Utah is Diverging from the Whole Trust Model

The red arrow from investment income shows that the state is redirecting investment income to grow the permanent fund. The red arrow from renewable resource income demonstrates that renewable resource income is also going to grow the permanent fund.



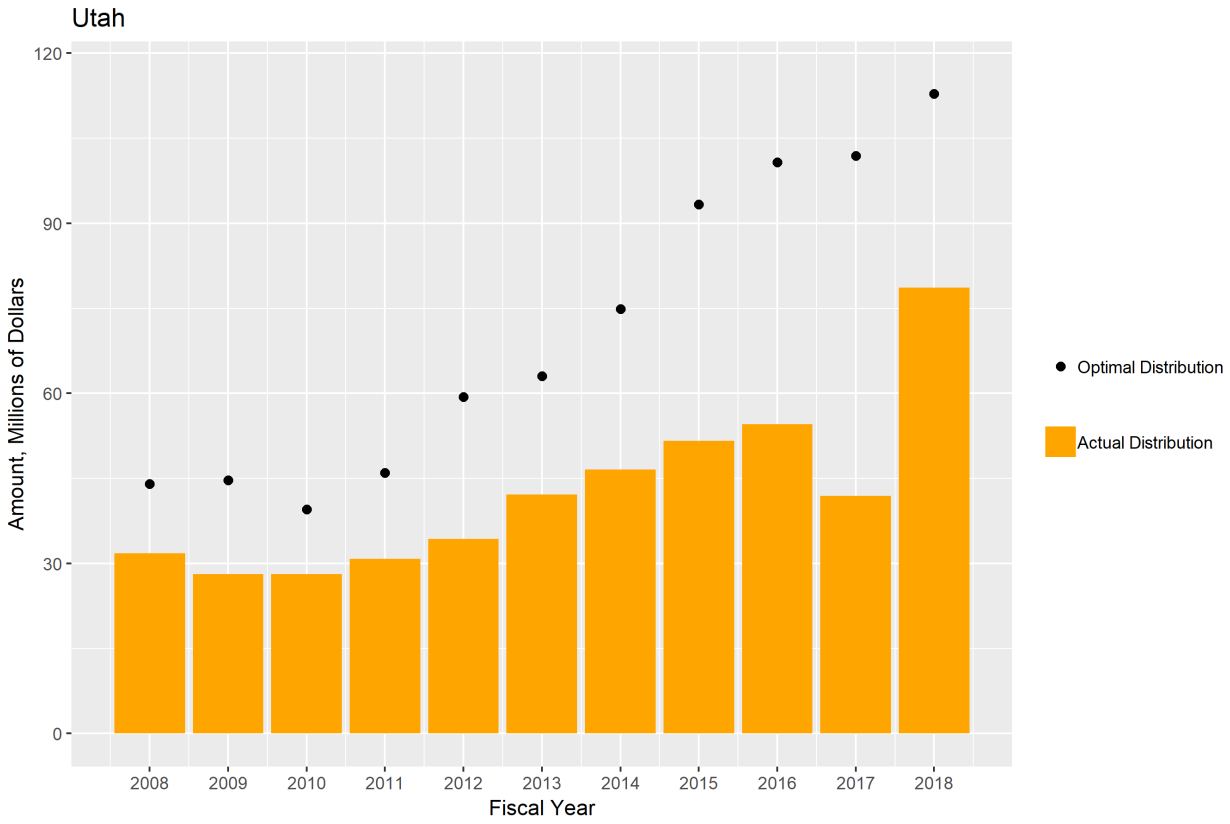
Because Utah deposits nonrenewable and renewable revenues in its permanent fund each year, interpreting the chart of optimal versus actual distributions will be slightly different in this case. This is because renewable resource revenues are additions to the value of the whole trust, not just a conversion of a land asset to a financial asset. In the graphic, we can think of this in one of two ways. Either (1) the annual distributions (orange bars) are an overestimate (i.e., they should be lower), or (2) the calculated optimal distributions (black dots) are an underestimate (i.e., should be higher) since we don't include the extra deposits to the permanent fund from renewable resources in these calculations.

If we look at Figure 15, then, we have either overestimated annual distributions (orange bars should be shorter) or underestimated optimal distributions (black dots should be higher). We can see that even without these corrections, Utah is distributing less than our optimal calculation. In 2018 we first see the new distribution policy (4% of the fund value) come into effect and actual distributions jump up closer to optimal distributions for maintaining the whole trust. However, they still fall short of this metric.

This is in line with Utah's goal of building the permanent fund balance. This policy of saving will benefit future generations at the expense of current beneficiaries.

Figure 15: Utah Permanent Fund Optimal Distributions vs Actual Distribution

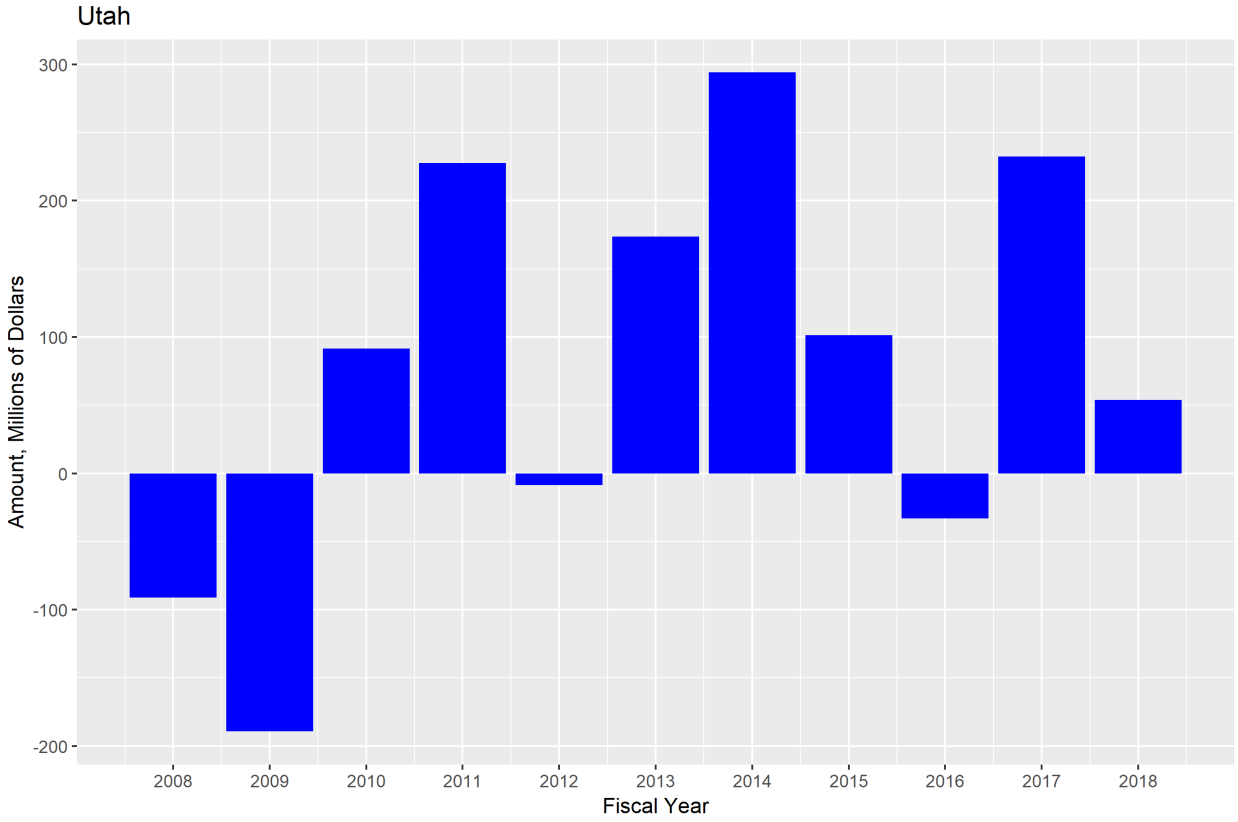
Utah consistently distributes less than the optimal distribution (orange bars below black dots), increasing the value of its whole trust each year. With this larger future whole trust, it will be able to make larger distributions to schools. However, current students are receiving less than they would if distributions were designed to maintain a constant whole trust value (black dots show this amount). Note that because Utah distributes all land revenues to the permanent fund, the gap between optimal and actual distributions in this figure underestimates the gap between actual distributions and whole-trust-maintaining distribution levels.



Like other states, the graph of Utah's permanent fund income less inflation shows the volatility of investment returns given a portfolio heavily invested in stocks and the large losses during the Great Recession.

Figure 16: Utah Permanent Fund Income Less Inflation

Again, we see the volatility of income given a portfolio heavily invested in stocks. Seemingly, Utah's institutional structure and its policy during the recession years of distributing only interest and dividends protected it from major policy changes in response to these losses.



Washington

Washington holds a fairly modest permanent fund—in 2017 it was valued at $1 billion and distributed about $31 million. Distributions from the fund are decided by the investment board under a mandate that they "balance…growth and income." Washington seems to be distributing near-optimal amounts.

Washington holds approximately 2.3 million acres of trust lands (most of its original grant) although this acreage is an approximation as Washington manages trust lands and lands acquired after statehood as a pooled resource.[29] In fiscal year 2017, Washington distributed about $70.6 million from trust lands income ($53.3 million to common schools, used for school construction) and deposited about $13.1 million in permanent funds ($1.1 million to common schools).[67] At the end of FY 2017, Washington's permanent fund was valued at $1 billion.[68]

Washington was late to adopt stocks as part of its permanent fund investment portfolio. In 1999 a court ruled that investment in equities should be allowed, but this was not codified into law until 2007.[17]

Washington's laws still reflect an odd and somewhat contradictory mix of mandates from before and after this change. For example, Washington's constitution states that the "interest accruing on the permanent

common school fund…[less expenses]…shall be exclusively applied to current use of the common schools,"[69] but also states that "the fund may retain or distribute income and investment earnings in order to achieve the appropriate balance between growth and income."[70] Additionally, it states that the "principal…as the same existed on June 30, 1965, shall remain permanent and irreducible"[71] —with this last requirement giving no indication whether nonrenewable land sales are to be held in addition to this value, or whether adjustments for inflation are to be made.

Despite these contradictory mandates, Washington's permanent fund managers have distributed amounts that vary around the optimal distribution in the years shown. On average, Washington's distributions from 2007 to 2018 have been about 4.1%, which is almost exactly the same as the optimal distribution amount: the average rate of return less inflation. Thus, while Washington's distributions are somewhat more volatile than our optimal recommendation, they are adhering to the principle of maintaining the whole trust value. Its policy of giving financial managers the "appropriate balance between growth and income" mandate may allow them to avoid the politics that surround permanent fund distribution policy in other states.

Figure 17: Washington Permanent Fund Optimal Distributions vs Actual Distribution
While Washington's distributions are more volatile than the optimal distributions, the average percentage distribution is equal to the optimal percentage distribution.

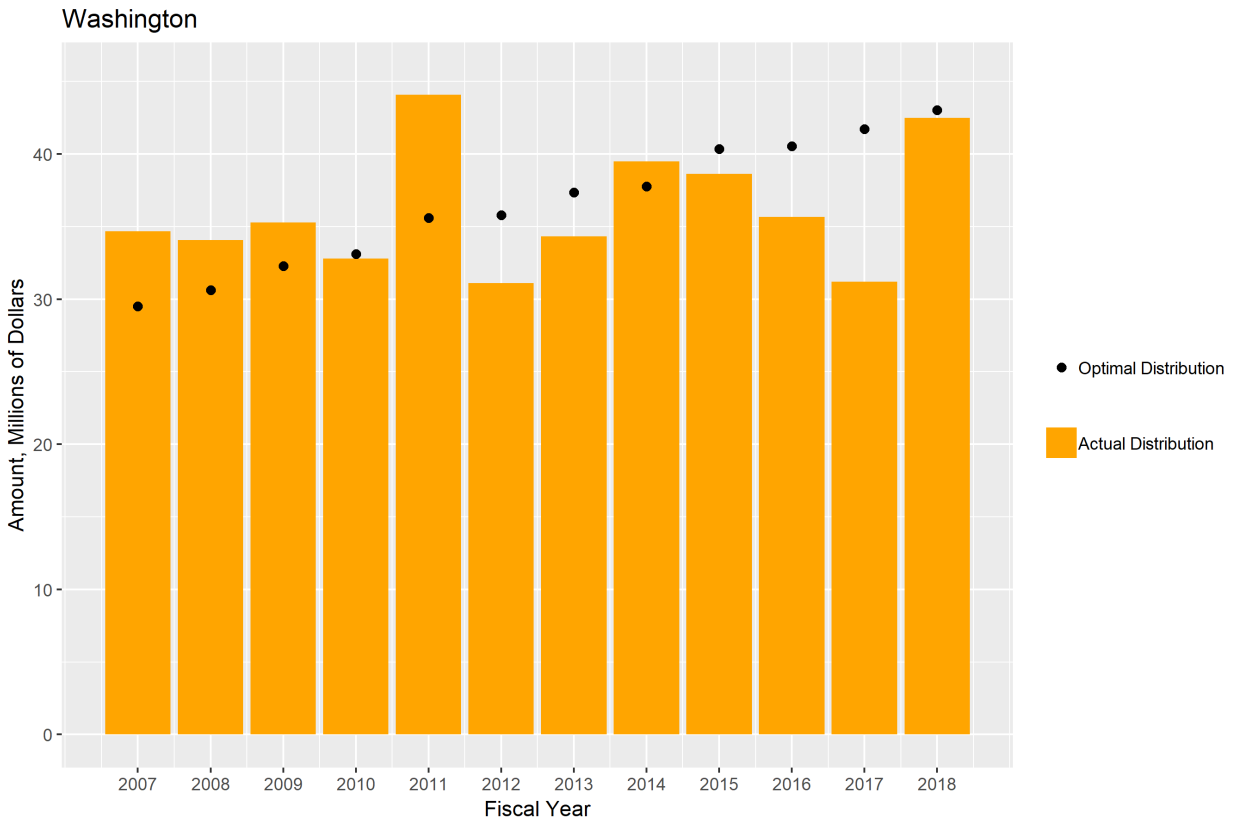
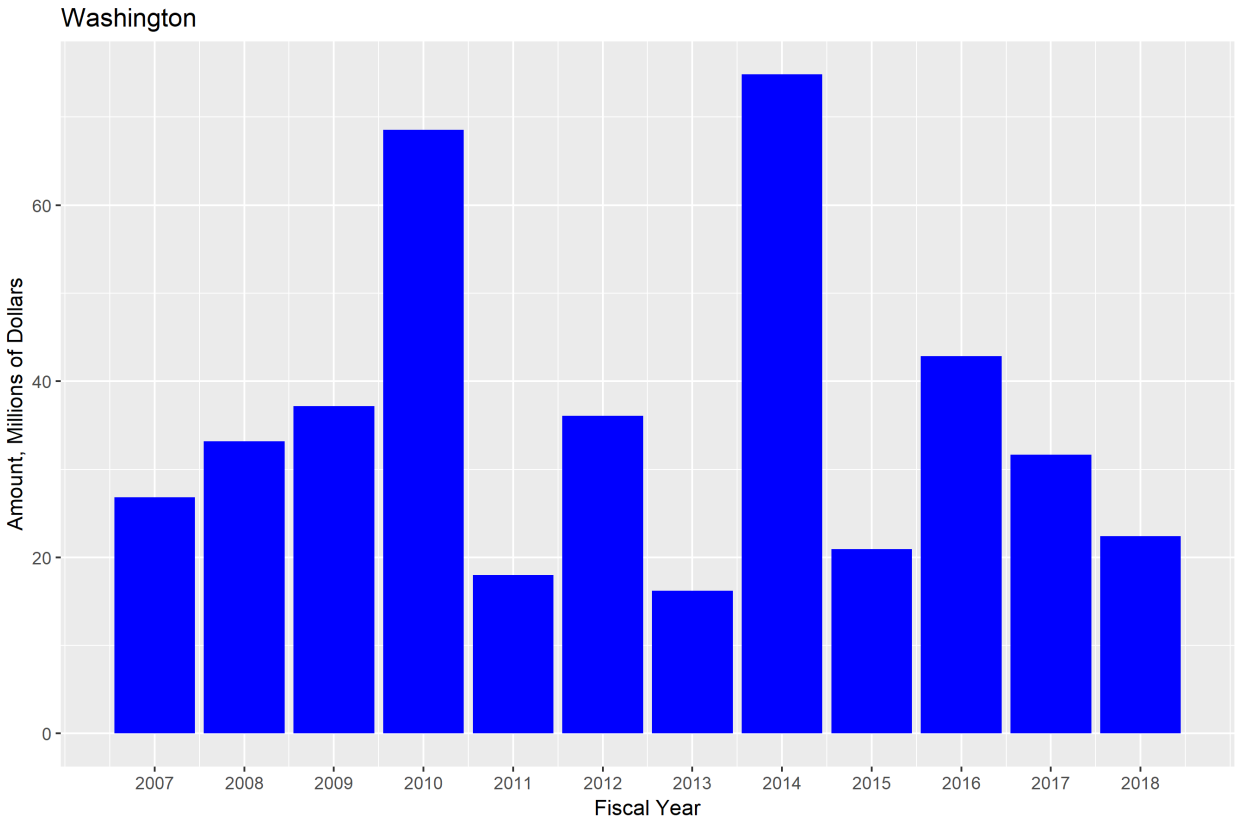


Figure 18: Washington Permanent Fund Income Less Inflation

While Washington's investment income is less volatile than some other states (as a result of different investment portfolios), receiving these varying amounts year-to-year would still be much less ideal for beneficiaries than the slowly increasing optimal distribution shown in Figure 17.



V. DRIVERS OF OVERSPENDING

As we saw in the previous section, specific pressures on state permanent funds vary. Advocates of increased permanent fund spending come from both political parties. Their reasons for doing so are many and varied. However, these reasons can be simplified to two motivations:

First is the drive for additional services. Arizona's teachers want higher salaries, Oregon's teachers want the pensions they were promised, and New Mexico's governor wants more early childhood education. The demands by these and other groups result in intense political pressure to spend down the value of the whole trust.

The second pressure is that the public often does not want to pay for services with increased taxes, so politicians instead seek to spend more from the permanent fund. Scott Beaulier of the Center for the Study of Economic Liberty summed up this attitude, writing that "taxes…are higher than they would be if funds added to the Permanent Fund from land sales were directly paid out." Instead of raising taxes (or even maintaining the same tax levels) to pay for education, he argues for selling off state trust lands and spending the revenues, thereby devaluing (or eventually eliminating) the whole trust.[35]

VI. DISCUSSION: POTENTIAL CONSEQUENCES

The permanent fund policies described above will have real and serious consequences for both education funding and, potentially, land management. If political pressures lead to increased permanent fund spending, the trusts will provide less future education funding, incentivizing sales of land and nonrenewable resources to make up the difference.

Impacts on Education Funding

Regardless of the reason for permanent fund policy changes, the changes will primarily affect trust distributions in one of four ways:

1) Spending may be less than a sustainable level to maintain the fund balance. In this case, the size of the fund will grow and produce more investment income for future education spending, but current distributions will be lower. We see this with Arizona's 2.5% distribution between 2012 and 2015.

2) In the opposite case, distributions from the permanent fund may be unsustainably high and the value of the whole trust will shrink. In this case, distributions in the present will be greater, and future funds available for education funding from investment income will be smaller. Arizona's 6.9% distribution between 2016 and 2019 is an example of spending that will shrink the whole trust.

   In Utah, we saw an extreme case of this policy in the 1980s when the permanent fund was nearly liquidated. The result, in this case, has been reduced trust distributions in the succeeding years for two reasons. First, the reduced size of the fund means that investment income is much less than it would have been. Second, Utah has chosen to rebuild its permanent fund, reinvesting most of this (relatively small) investment income and all nonrenewable and renewable land resources instead of distributing these amounts.

3) Nonrenewable or land sales revenue may be diverted and spent before being deposited in the permanent fund. This will have identical results to spending unsustainably from the fund (point 2, above): the value of the whole trust will shrink and future distributions will be lower. We see this type of policy in Colorado's BEST Act.

4) Legislators may funnel money away from direct K-12 education spending to fund other programs. This type of legislation, if permanent, would reduce both current and future distributions for K-12 education. We see this, for example, in Oregon where a portion of permanent fund distributions is now channeled to teacher pensions.

Combinations of the above policy changes are also possible—for example, in New Mexico the proposed 1% increase in distributions for early childhood education would both reduce future fund distributions and direct money away from K-12 education.

How these changes in permanent fund education distributions affect per-student spending depends heavily on how the money is distributed to schools. For example, in Oregon where the money goes directly to school districts, if distributions fall, schools will have less money to spend. Alternatively, in states like New Mexico where the distributions are pooled with state general fund education spending, changes in distributions may not affect school budgets at all. (See Table 3 for an accounting of these policies in different states.) If distributions increase, the general fund might just spend less on education, and vice-versa. In this case, the effects would be felt by taxpayers making up the difference in the general fund.

Table 3: Method of Permanent Fund Distribution to Schools

In some states, money is distributed directly to schools so reductions would reduce per-child spending. In other states, distributions offset general fund spending so reductions would reduce other general fund spending or require additional tax income.

State	Method of Distribution to Schools
Arizona	First $72 million (of combined lands and permanent fund revenue) to school facilities and general fund, income beyond that to teacher salaries, classroom size reduction, dropout prevention, etc., programs[72]
Colorado	General fund[73]
Montana	Offsetting general fund (through Guarantee Account)[74, 75, 76, 77]
New Mexico	General Fund, offsets other spending (except for temporary 2006 to 2016 increases, which were directed to teacher pay incentives)[41]
Oregon	Directly to school districts[78]
Utah	Directly to school districts[79, 80]
Washington	School construction[81]

Impacts on Land Sales and Resource Management

Spending from the permanent fund may not seem closely related to management of state trust lands, but distribution policies can create strong incentives for trust land management. If distribution policies consistently spend more than investment earnings, they are effectively spending investment earnings plus some fraction of money from land or nonrenewable resource sales.

In the whole trust model, these land and nonrenewable resource sale proceeds are not really income, but simply the transfer of resources from a land investment to a financial investment. However, in the scenario where distributions are consistently higher than long-term investment income (which, as we have seen, is common), beneficiaries may begin to see these sales as sources of additional immediate income.

This attitude toward nonrenewable land revenues is also common; for example, in 2005, Arizona's land revenue reports began to include a "Total Receipts" column, which summed renewable land revenue, permanent fund investment revenue, *and* nonrenewable land revenue, indicating that managers think of these land sales as income, not a transfer to a different type of investment. If taxpayers and beneficiaries see land and nonrenewable resource sales as sources of immediate income, they have a strong incentive to maximize that revenue in the short term. In this case, pressure will grow to sell more land and extract more resources.

Additionally, this incentive could lead to suboptimal choices in land management. Managers may sell off land piecemeal or in a poor market and receive less than its full potential value. Similarly, managers may face pressure to extract and sell nonrenewable resources when prices are low.

We see an example of excessive trust spending in Utah. The consequences of this are described in a 2006 audit of SITLA's operations.[15] During the 1980s, Utah's permanent fund was spent down to a fraction of its previous value and nonrenewable resource value was not retained as part of the whole trust. Utah has chosen to rebuild its permanent fund; to do so, it has pursued a strategy of aggressive land sales and oil extraction, with 20% of its income between 1994 and 2005 coming from land sales and nearly 60% coming from mineral extraction.[15] This is a marked change from the period before the permanent fund raids, when the land management agency's policy was to "encourage the lease, rather than sale, of trust lands" and sold land only when "there was an overriding need for private or local ownership."[15] Similarly,

in the 1970s, the decade before the permanent fund raids, in an average year only about 40% of revenue came from mineral extraction.[15]

In some cases, there may be a real danger of a downward spiral in this trend: lands are sold to fund unsustainable spending, funds are put into the trust, politicians spend from the trust at unsustainable rates, which creates pressure to sell more lands, and so on.

VII. CONCLUSION AND RECOMMENDATIONS

In this report we have described in-depth an obscure part of an obscure topic—the permanent funds associated with state trust lands. As we see from the potential consequences above, however, these lands and their permanent funds are too important to remain little-known policy topics.

State trust lands make up a large fraction of lands in the West. Permanent funds are important sources of school funding and are the mechanism by which the whole trust retains its value. The whole trust model, in which we treat the land and financial assets as two parts of a whole, allows us to more easily assess whether that whole value is being maintained to provide long-term returns to beneficiaries.

In the sections above, we see that some states are doing a good job maintaining the whole trust value, while others are spending it down to increase services and/or avoid taxes. Recognizing the whole trust model, having a theoretically optimal benchmark by which to measure permanent fund distribution policy, and having a time series of data on permanent funds to measure will allow the permanent funds to be more easily understood and policy changes to be more easily assessed.

Political Trends and Implications

From the states we have analyzed, we can draw several general conclusions:

- Permanent fund spending is highly political and often subject to short-term thinking.
- Several states are spending unsustainably high levels of their permanent funds or even diverting nonrenewable revenue directly to spending instead of to the permanent funds. This diminishes the whole trust value and its ability to generate returns for beneficiaries.
- Two key motivations exist for overspending from permanent funds: funding needs for public services and resistance to taxes.
- Implications of overspending include:
    - Fewer resources for future beneficiaries, primarily schoolchildren, or increased tax burden for future taxpayers;
    - Increased incentives to sell state lands and extract nonrenewable resources.

Overall, we find that the allocation of trust land revenue and permanent fund distribution policy is highly political and there are strong incentives for governments to raid the permanent funds to pay for services.

By treating the permanent funds as disposable income, the value of the whole trust is reduced. This runs counter to the requirement that the whole trust value be maintained in perpetuity. It also reduces resources for future beneficiaries and incentivizes land and nonrenewable resource sales.

Recommendations

Our analysis suggests several recommendations for future state policy on permanent fund distributions. Overall, we recommend that states maintain the whole trust value in perpetuity; the below suggestions are designed to facilitate that goal.

1) First, to maintain the value of the whole trust, states must deposit all nonrenewable resource revenue in the permanent fund. To do otherwise diminishes the value of the lands without adding to the value of the permanent fund, thus reducing the overall value held for beneficiaries. Allowing direct spending of nonrenewable resource revenues also increases incentives to sell land or extract resources to fund current spending needs or to finance new political proposals.

2) Second, state distribution policies should reflect the expected volatility and return of their portfolio. Investing in stocks has allowed these funds to grow much more quickly and/or distribute more than had funds only been invested in fixed-income securities. This policy change necessitates states acknowledging changes in type, amount, and consistency of annual returns and adjusting distribution policies accordingly. We recommend that a relatively stable fraction of the fund be distributed every year, and that it match the fund's long-term rate of return, less inflation.

3) Finally, after choosing a distribution policy that maintains the trust value, stabilizes distributions, and matches their investment strategy, states should put in place legal safeguards so that the policies are harder to change, making politically motivated raids on the trust (i.e., diminishing the value of the whole trust) more difficult. Putting these decisions in the hands of financial managers who do not face the pressure of reelection may be one solution.

APPENDIX A: DATA SOURCES

Data used to describe how trust land revenue is generated, how it is allocated to beneficiaries, permanent savings and expenses, and to describe permanent fund performance are gathered from a variety of state sources, including annual reports, audit and legislative reports, and personal communication with trust agency staff. These data sources are listed here by state. The data collected and used in this report also are available for download in Microsoft Excel format. All data are presented in inflation-adjusted dollars.

Arizona

Trust Land Revenue and Income Data:

- Arizona State Land Department, Annual Reports available from FY 2003 to 2016. https://land.az.gov/about/annual-reports.
- Data for 2017 and 2018: Kristen Desmangles, Legislative Policy Research Assistant, Arizona State Lands Department. Personal communication, July 22, 2019.

Permanent Fund Data:

- State Treasurer of Arizona, Board of Investment Reports, 2008-2018. June reports contain fiscal year-end data for each year. https://aztreasury.gov/boi-reports-archive/.
- State Treasurer of Arizona, Financial Report, Fiscal Year 2007. http://web.archive.org/web/20080616174346/http://www.aztreasury.gov/AR2007/FY07FinancialStatementReport.pdf.
- State Treasurer of Arizona, 2007 Endowment Quarterly Meeting: http://web.archive.org/web/20080309025905/http://www.aztreasury.gov/presentations/FY081stqtrEndowment.pdf.
- 2006: State Land Endowments Report. http://web.archive.org/web/20070614193649/http://www.aztreasury.gov/pdfs/State%20Land%20Endowments%20NRRA%201-24-07.pdf.

Colorado

Trust Land Revenue and Income Data:

- Colorado State Board of Land Commissioners, Income and Inventory Report, Fiscal Years 2015-2018, Denver, Colorado, https://www.colorado.gov/pacific/statelandboard/reports-2.
- Colorado State Board of Land Commissioners, Annual Report, Fiscal Years 2015-2018, Denver, Colorado, https://www.colorado.gov/pacific/statelandboard/reports-2.

Permanent Fund Data:

- Colorado State Board of Land Commissioners, Income and Inventory Report, Fiscal Years 2015-2018, Denver, Colorado, https://www.colorado.gov/pacific/statelandboard/reports-2.
- 2014 and earlier: Nick Massie, Assistant Director (CFO-COO) MBA, Colorado Department of Natural Resources. Personal communication, September 25, 2019.

Idaho

Trust Land Revenue and Income Data:

- Idaho Land Board, Department of Lands. Annual Report, 2018. https://www.idl.idaho.gov/land-board/about-idl/annual-reports/index.html.

Permanent Fund Data:

- Idaho Land Board, Department of Lands. Annual Report, 2018. https://www.idl.idaho.gov/land-board/about-idl/annual-reports/index.html.

Montana

Trust Land Revenue and Income Data:

- Montana Trust Land Gross Revenue Generated by Activity, 1999-2018. Montana Department of Natural Resources, Annual Reports, Trust Land Management Division. http://dnrc.mt.gov/divisions/trust/docs/annual-report.

Permanent Fund Data:

- Montana Department of Natural Resources, Annual Reports, Trust Land Management Division. http://dnrc.mt.gov/divisions/trust/docs/annual-report.

New Mexico

Trust Land Revenue and Income Data:

- New Mexico State Land Office Annual Reports, Fiscal Years 2009-2018. State Land Commissioner, Santa Fe, New Mexico, http://www.nmstatelands.org/Reports.aspx#5.

Permanent Fund Data:

- 2003 – 2018: New Mexico State Investment Council Annual Audit Reports, Fiscal Years 2013-2018. https://www.sic.state.nm.us/sic-annual-audit-reports.aspx.
- Charles Wollmann, Director, Communications, Legislative & Client Relations, New Mexico State Investment Council. Personal Communication, August 1, 2019.

Oregon

Trust Land Revenue and Income Data:

- Oregon Department of State Lands. 2018. Annual Report on Common School Fund Real Property for Fiscal Year 2018. https://www.oregon.gov/dsl/Land/Documents/AnnualReportRealPropertyFY2018br2.pdf.

Permanent Fund Data:

- Oregon Department of State Lands. 2018. Common School Fund Annual Financial Report for Fiscal Year 2018. https://www.oregon.gov/dsl/About/Pages/AgencyPub.aspx.

Utah

Trust Land Revenue and Income Data:

- State of Utah School and Institutional Trust Lands Administration. 2018. Annual Report. https://trustlands.utah.gov/resources/public-document-search/.

Permanent Fund Data:

- State of Utah School and Institutional Trust Lands Administration. 2018. Consolidated Balance Sheet Fiscal Year 2018 Year to Date. https://trustlands.utah.gov/resources/public-document-search/.

Washington

Trust Land Revenue and Income Data:

- 2010-2018: Washington State Department of Natural Resources Annual Reports. https://www.dnr.wa.gov/about/fiscal-reports/dnr-annual-reports.

Permanent Fund Data:

- Chris Phillips, Director, Institutional Relations and Public Affairs, Washington State Investment Board. Personal Communication, October 28, 2019.
- 2010-2018: Washington State Investment Board, Quarterly Investment Reports: https://www.sib.wa.gov/financial/invrep.asp?subs=%2Ffinancial%2Fpdfs%2Fquarterly%2Fqr063019.pdf&x=19&y=25

Wyoming

Trust Land Revenue and Income Data:

- State Board of Land Commissioners, Summary of State Trust Land Revenue, Fiscal Year 2018. https://sites.google.com/a/wyo.gov/osli/boards/sblc.

  Notes: The *Agenda and Matters* documents for each year's August meeting include a Summary of State Trust Land Revenue. "Schedule 3 Trust Land Revenue Distributions" presents revenue distributions to the permanent land funds, land income funds, and the general fund, as designated by W.S. § 9-4-310. Additional presentation is made showing distribution of revenue to the individual funds within these fund classes. "Schedule 4 Mineral Royalty Revenue by Source" details subsurface revenues by source and as a percentage of total revenue collected by the division. "Schedule 5 Other Trust Land Revenue by Source" details trust land revenue collected by the trust land management division and revenues by source and as a percentage of total collections.

Permanent Fund Data:

- Wyoming State Treasurer, Annual Report, Fiscal Year 2018. https://statetreasurer.wyo.gov/Reports.aspx.

APPENDIX B: PRACTICAL IDEAS FOR DISTRIBUTION POLICIES

To choose distribution policies, states could look to a variety of practical payout rules that have stood the test of time. Most of these plans require states to first have an estimate of long-term rate of return less inflation. Somewhat surprisingly, many sources agree that approximately 4 to 5% is a good estimate; for example, Litvack, Malkiel, and Quandt estimate 4%,[24] a 2018 Oregon report estimates 4.5%,[62] Washington's distribution, which has approximately matched our optimal distribution, has varied slightly around 4%, Massachusetts Institute of Technology uses 5.1%,[82] Yale uses 5.25%,[83] and Princeton sets a range of 4 to 5.75%.[84]

After estimating their long-term rate of return, a variety of policies estimate our optimal distribution but allow small year-to-year changes in distributions as markets change. One of the simplest is a variation on Tobin, which is a weighted average of the previous year's distribution and the estimated rate of return times the current balance:

$$D(y) = a*D(y-1) + (1-a)*r*B(y)$$

where D is distribution, y is the current year, a is the fraction weighting last year's distribution, r is the estimated long-term rate of return, and B is the fund balance. Both Yale and MIT use this distribution formula, with a = 0.8. This policy is particularly appropriate when fund managers are prioritizing year-to-year stability in distributions.[23, 63, 64]

Another policy option, proposed by Litvack et. al. in 1974, proposes holding each year's trust income in a "stabilization fund" from which the long-term rate of return times the total fund balance[85] (r*B) is distributed every year. If the stabilization fund drops below 50% of the last three years' income, the distribution rate is dropped slowly, reaching a baseline (in this case 3.2%) if the fund drops below 5% of the last three years' income.[24] Under this approach, distributions react more quickly to changes in the market but are less stable.

These are just two of many possible options that states may choose for distribution policies. Regardless of what specific policy a state chooses, the key metric remains that the value of the whole trust is maintained. It is our hope that this paper will allow citizens who benefit from these trusts to evaluate whether their state's distribution policies are maintaining this value for future generations.

ENDNOTES

[1] This legal mandate was weakened somewhat in Arizona when a rider on the 2018 U.S. Omnibus spending bill approved Arizona's most recent permanent fund spending policy.
[2] Plus about 85 million acres in Alaska.
[3] Souder, John A. and Sally K. Fairfax. 1996. *State Trust Lands: History, Management, and Sustainable Use*. Lawrence, KS: University Press of Kansas.
[4] The first was Ohio, in 1809, and the lands benefitted only public schools; in later-admitted states, lands were also granted for other beneficiaries such as universities and penitentiaries.
[5] States that sold the entirety of their initial granted lands are Alabama, Arkansas, Florida, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nevada, Ohio, and Wisconsin. States retaining less than 40% of their original granted lands are California (11%), North Dakota (29%), Oklahoma (38%), and South Dakota (30%).
[6] See, for example, Nebraska's State Constitution: https://nebraskalegislature.gov/FloorDocs/Current/PDF/Constitution/constitution.pdf.
[7] The first was the Colorado Enabling Act of 1875.
[8] *Branson School District Re-82 v. Romer*, 161 F.3d 619 (10th Cir. 1998). https://casetext.com/case/branson-school-district-re-82-v-romer-2
[9] Arizona, New Mexico, Utah, Wyoming, Colorado, Montana, Idaho, and Washington. Here we discuss only these states and Oregon, but several other states (including Oklahoma) have similar state trust lands/permanent fund policies.
[10] Except for Oregon, which has similar language in its constitution (Article VIII, Section 2), though not in its enabling act.
[11] *Pierce v. Ducey et al.,* 2:2016cv01538-Document 113 (D. Ariz. 2018). https://law.justia.com/cases/federal/district-courts/arizona/azdce/2:2016cv01538/982086/113/
[12] The exception is Utah.
[13] New Mexico State Investment Council. 2018. *60 Years: Anniversary Report 2018*. Santa Fe, NM. https://www.sic.state.nm.us/uploads/FileLinks/5344f5ea807f40d7a58c0498891a649a/NMSIC_60thAnniversaryReport_2018.pdf
[14] Oregon Department of State Lands Office of the Director. (n.d.) About the Common School Fund. https://web.archive.org/web/20090201125712/http://statelands.dsl.state.or.us/DSL/DO/aboutcsf.shtml
[15] Osterstock, T. et al. 2006. *A Performance Audit of the School & Institutional Trust Land Administration (SITLA)*. Report to the Utah Legislature No. 2006-01. https://le.utah.gov/audit/06_01rpt.pdf
[16] State Treasurer of Arizona. 2019. PLETF Investment Performance, Asset Allocation, and Strategy. https://aztreasury.gov/investments/endowment-details/
[17] H.B. 2396. 2007. An act relating to investment of moneys in the permanent common school fund. 60th Legislature, State of Washington. http://lawfilesext.leg.wa.gov/biennium/2007-08/Pdf/Bills/Session%20Laws/House/2396.SL.pdf?cite=2007%20c%20505%20%C2%A7%201
[18] Colorado Legislative Council Staff. 2016. Final Fiscal Note, SB16-035. Denver, CO. https://leg.colorado.gov/sites/default/files/documents/2016A/bills/fn/2016a_sb035_f1.pdf
[19] In recession years, total revenue could even be negative, so beneficiaries would receive nothing and the overall value of the trust would shrink.
[20] Alternatively, the general fund/taxpayers might make up the funding difference in bad years, but the burden would simply be shifted.
[21] Eisner, Robert and Stanley W. Black. 1974. Discussion. *The American Economic Review* 64(2): 438-442. https://www.jstor.org/stable/1816079
[22] See Appendix 1 for more detail and examples of practical rules for distribution amounts.
[23] Tobin, James. 1974. What Is Permanent Endowment Income? *The American Economic Review* 64(2): 427-432. https://www.jstor.org/stable/1816077
[24] Litvack, James M., Burton G. Malkiel, and Richard E. Quandt. 1974. A Plan for the Definition of Endowment Income. *The American Economic Review* 64(2): 433-437. https://www.jstor.org/stable/1816078
[25] Since these publications, some have questioned whether these goals are the correct choice for university endowment funds. We will not examine those arguments here, but accept that the state lands whole trust, including the permanent fund, is required to maintain its real value.

[26] We are aware that Nichols and Tobin suggest a slightly different formulation.[24,75] We use this formula as it is simpler, easier to estimate, and is supported by both Robert Eisner and Stanley Black (1974) in their discussion of these papers.[22]
[27] United States 59th Congress, Session 1. 1906. H.R. 12707. Chap. 3335 – An Act To enable the people of Oklahoma and of the Indian Territory to form a constitution and State government and be admitted into the Union on an equal footing with the original States; and to enable the people of New Mexico and of Arizona to form a constitution and State government and be admitted into the Union on an equal footing with the original States. https://www.loc.gov/law/help/statutes-at-large/59th-congress/session-1/c59s1ch3335.pdf
[28] Personal communication. Arizona State Lands Department 2018 Annual Report (not public as of Sept. 2019).
[29] Culp, Peter W., Andy Laurenzi, Cynthia C. Tuell, and Alison Berry. 2015. *State Trust Lands in the West: Fiduciary Duty in a Changing Landscape*. Policy Focus Report. Cambridge, MA: Lincoln Institute of Land Policy. https://www.lincolninst.edu/sites/default/files/pubfiles/state-trust-lands-in-the-west-updated-full.pdf
[30] Yee, Kimberly. June 2019. State Treasurer's Report. Phoenix, AZ: Office of the Arizona State Treasurer. https://aztreasury.gov/BOI_Reports/2019/June_2019.pdf
[31] State Treasurer of Arizona. 2019. PLETF Investment Performance, Asset Allocation, and Strategy. https://aztreasury.gov/investments/endowment-details/
[32] This average return less inflation was then multiplied by the five-year average of the trust balance to calculate distributions.
[33] State Treasurer of Arizona. 2007. *State Land Endowments*. http://web.archive.org/web/20070418161438/http://www.aztreasury.gov/pdfs/State%20Land%20Endowments%20NRRA%201-24-07.pdf
[34] Fischer, Howard. 2015. ASU study backs Ducey school trust land plan. *Arizona Capitol Times*. Oct. 7. https://azcapitoltimes.com/news/2015/10/07/asu-study-backs-ducey-school-trust-land-plan/
[35] Beaulier, Scott. 2015. *Should the Permanent Fund Sit on its Assets?* Center for the Study of Economic Liberty Policy Report No. 2015-02. Tempe, AZ: Arizona State University. https://research.wpcarey.asu.edu/economic-liberty/wp-content/uploads/2015/03/CSEL-Policy-Report-2015-02-State-Land-Trust-Education-003.pdf
[36] Ballotpedia. 2016. Arizona Education Finance Amendment, Proposition 123 (May 2016). https://ballotpedia.org/Arizona_Education_Finance_Amendment,_Proposition_123_(May_2016)
[37] Poole, Brad. 2018. $344 Million School Funding Headache in Arizona. *Courthouse News Service*, March 28. https://www.courthousenews.com/344-million-school-funding-headache-in-arizona/
[38] U.S. 115th Congress. 2018. Consolidated Appropriations Act. P.L. 115-141. https://www.govinfo.gov/content/pkg/PLAW-115publ141/html/PLAW-115publ141.htm
[39] While Colorado was granted lands for a variety of beneficiaries, only school lands have an associated permanent fund and therefore a perpetuity mandate.
[40] Colorado State Land Board. n.d. *Annual Report, Fiscal Year 2017-2018*. Denver, CO. https://drive.google.com/file/d/1TfPpiemc0BvJrmV41UIHDZgUu8Du94n8/view
[41] Colorado Department of Natural Resources. n.d. *State of Colorado Department of Natural Resources*. Denver, CO. https://web.archive.org/web/20061017142534/http://dnr.state.co.us/NR/rdonlyres/994FD115-F98A-4755-A23D-FE605998AF22/0/DNRInfoBookletWeb.pdf
[42] Donaldson, Kori. 2018. Building Excellent Schools Today (BEST) Program. IssueBrief # 18-08. Denver, CO: Legislative Council Staff. https://leg.colorado.gov/sites/default/files/update_best_cop_issue_brief_8042018.pdf
[43] Colorado Legislative Council Staff. 2006. Report on the State Education Fund. Denver, CO. https://leg.colorado.gov/sites/default/files/summary_of_2006_school_finance_bill_hb06-1375.pdf
[44] General Assembly of the State of Colorado. 2016. Senate Bill 16-035. Denver, CO. https://leg.colorado.gov/sites/default/files/2016a_035_signed.pdf
[45]Strickler, E. (ed). 2018. *Annual Report*. Santa Fe, NM: New Mexico State Land Office. http://www.nmstatelands.org/uploads/files/Communication/201%20Annual%20Report%20PDF.pdf
[46] New Mexico State Investment Council. n.d. SIC Annual Audit Reports. https://www.sic.state.nm.us/sic-annual-audit-reports.aspx (*see* Audit Report FY 2018)
[47] New Mexico Legislative Education Study Committee. 2013. Bill Analysis HJR 10a. 51st Legislature, 1st Session. https://www.nmlegis.gov/Sessions/13%20regular/LESCAnalysis/HJR10.PDF
[48] New Mexico Legislative Council Service. 2016. *Piecemeal Amendment of the Constitution of New Mexico Since 1911*. Santa Fe, NM. https://www.nmlegis.gov/Publications/New_Mexico_State_Government/Piecemeal_Amendment_Dec2016.pdf

[49] Ballotpedia. 2003. New Mexico Amendment 2, Public Education Funding Act. https://ballotpedia.org/New_Mexico_Amendment_2,_Public_Education_Funding_Act_(September_2003)
[50] Monteleone, James, 2013. House: Extend permanent fund payout. *Albuquerque Journal*, March 1. https://www.abqjournal.com/173692/house-keep-permanent-fund-payout-level.html
[51] Ballotpedia. (n.d.) New Mexico Constitution Section 7: Investment of Permanent School Fund. https://ballotpedia.org/Article_XII,_New_Mexico_Constitution#Section_7
[52] Like Arizona, New Mexico uses the five-year average of the fund balance as the multiplier for the distribution percentages.
[53] Ballotpedia. 2016. New Mexico Permanent Fund Distribution Amendment (2016). https://ballotpedia.org/New_Mexico_Permanent_Fund_Distribution_Amendment_(2016)
[54] Ballotpedia. 2018. New Mexico Land Grant Permanent Fund Distribution to Early Childhood Education Amendment. https://ballotpedia.org/New_Mexico_Land_Grant_Permanent_Fund_Distribution_to_Early_Childhood_Education_Amendment_(2018)
[55] LegiScan. 2019. New Mexico House Joint Resolution 1. https://legiscan.com/NM/bill/HJR1/2019
[56] State of New Mexico. 2019. 54th Legislature, 1st Session. House Joint Resolution 1. https://www.nmlegis.gov/Sessions/19%20Regular/resolutions/house/HJR01.pdf
[57] Boyd, Dan. 2019. NM permanent fund plan clears House. *Albuquerque Journal*, Feb. 15. https://www.abqjournal.com/1281484/nm-permanent-fund-plan-clears-house-now-heads-to-senate.html
[58] Ballotpedia. 2018. 2017 legislative session. https://ballotpedia.org/New_Mexico_Land_Grant_Permanent_Fund_Distribution_to_Early_Childhood_Education_Amendment_(2018)#2017_legislative_session
[59] Oregon Department of State Lands. 2017. *Protecting Oregon's Natural and Fiscal Resources*. Salem, OR. https://www.oregon.gov/dsl/About/Documents/2017AgencyFactSheet.pdf
[60] Oregon Department of State Lands. 2018. *DSL by the Numbers*. Salem, OR. https://www.oregon.gov/dsl/About/Documents/dsl_by_the_numbers.pdf
[61] Oregon Department of State Lands Office of the Director. (n.d.) About the Common School Fund. https://web.archive.org/web/20090201125712/http://statelands.dsl.state.or.us/DSL/DO/aboutcsf.shtml
[62] Hullinger, Lee and Star Thomson. 2018. *Common School Fund Distributions*. Salem, OR: Oregon Department of State Lands. https://www.oregon.gov/dsl/About/Documents/Common_School_Fund_Distributions_FY_2019_web.pdf
[63] Adam R Brown. n.d. Amendment viewer. https://adambrown.info/p/research/utah_constitution/amendment?year=1995&amendment=HJR15+1994+General+Session
[64] Note that this is only true for the public schools permanent fund; the other permanent funds receive all land revenues every year.[17]
[65] Ballotpedia. 2002. Utah School Fund Investment, Amendment 1. https://ballotpedia.org/Utah_School_Fund_Investment,_Amendment_1_(2002)
[66] Ballotpedia. 2016. Utah School Funds Distribution, Amendment B. https://ballotpedia.org/Utah_School_Funds_Distribution,_Amendment_B_(2016)
[67] Washington Department of Natural Resources. (n.d.) *2017 DNR Annual Report*. Olympia, WA. https://www.dnr.wa.gov/publications/em_annual_report_2017.pdf?hqlmzi
[68] Data sent by Washington State Investment Board.
[69] Washington State Legislature. (n.d.) Common school construction fund—Sources—Use—Excess moneys in, availability, repayment. RCW 28A.515.320. https://app.leg.wa.gov/RCW/default.aspx?cite=28A.515.320
[70] Washington State Legislature. (n.d.) Permanent common school fund—Allowable investments—Irreducible principal. RCW 28A.515.330. https://app.leg.wa.gov/RCW/default.aspx?cite=28A.515.330
[71] Washington State Legislature. (n.d.) Permanent common school fund—Sources—Use. RCW 28A.515.300. https://app.leg.wa.gov/RCW/default.aspx?cite=28A.515.300
[72] Arizona State Land Department. 2016. *Natural Resources Annual Report, 2015-2016*. Phoenix, AZ. https://land.az.gov/sites/default/files/documents/files/2016%20Annual%20Report%2004042017.pdf
[73] Colorado State Board of Land Commissioners. (n.d.) *Income and Inventory Report, Fiscal Year 2017-18*. Denver, CO. https://drive.google.com/file/d/1-CSRdJ2EPBoZpx0WWW6Kuv0il0YXh7M6/view
[74] If total land and permanent fund income are greater than $56 million, half of the excess is "distributed to schools on a per-quality-educator" basis. This amount is likely to be zero or extremely small.[67,68]

[75] Montana Department of Natural Resources and Conservation. 2018. *Annual Report Fiscal Year 2018: Trust Lands Management Division*. Helena, MT. http://dnrc.mt.gov/divisions/trust/docs/annual-report/FY2018TrustLandsAnnualReport.pdf p 23
[76] https://leg.mt.gov/content/Committees/Interim/2015-2016/School-Funding/Meetings/Apr-2016/guarantee-account-2015.pdf
[77] Montana Legislative Fiscal Division. 2015. *Guarantee Account*. Helena, MT. https://leg.mt.gov/content/Committees/Interim/2015-2016/School-Funding/Meetings/Apr-2016/GTB-one-pager.pdf
[78] Oregon Department of State Lands. 2018. *Common School Fund Benefits Oregon Schools*. Salem, OR. https://www.oregon.gov/dsl/About/Documents/csf_fact_sheet.pdf
[79] Utah State Treasurer. 2018. Treasurer Damschen announces record-breaking Permanent State School Fund distribution to Utah schools. Salt Lake City, UT. https://treasurer.utah.gov/2018/09/27/treasurer-damschen-announces-record-breaking-permanent-state-school-fund-distribution-to-utah-schools/
[80] Utah State Office of Education. School LAND Trust. Program. http://www.schoollandtrust.org/program/
[81] Personal communication, Chris Phillips (WA SIC), 8/7/2019.
[82] Alexander, Seth and Herring, Ahron. 2008. Endowment Spending Policy at MIT. *MIT Faculty Newsletter* 20(5). Cambridge, MA: Massachusetts Institute of Technology. http://web.mit.edu/fnl/volume/205/alexander_herring.html
[83] Yale. 2018. Introduction to the Endowment Spending Policy. New Haven, CT: Yale University. https://your.yale.edu/sites/default/files/endowment-policy.pdf
[84] Princeton University. 2001. Endowment Spending Policy Fact Sheet. Princeton, NJ: Office of Communications, Princeton University. https://pr.princeton.edu/news/01/q1/0127-endowspend.htm
[85] Of note, in this paper and in many states' distribution formulas, a 3-5 year average of past years' fund balances is multiplied by the chosen distribution percentage. This provides some additional year-to-year smoothing of distribution amounts.
[75]Nichols, Donald A.1971. *A New Measure of Income from Wealth*. Cowles Foundation Discussion Paper No. 321. New Haven, CT: Yale University. https://cowles.yale.edu/publications/cfdp/cfdp-321


HEADWATERS
ECONOMICS