

Future Management of the Elliott State Forest

Providing Adequate Returns for Oregon's Schools

Eric Fruits, Ph.D.

Submitted to Oregon State Land Board

December 8, 2009

Agenda Item 7

Executive Summary

A large portion (85,000 acres) of the Elliott State Forest is managed by the State Land Board as Common School Fund lands. These Common School Fund lands are known as *Trust Lands*. A trust is a legal arrangement whereby control over property is transferred to a person or organization (the trustee) for the benefit of someone else (the beneficiary). As trustee, the State Land Board has a fiduciary responsibility to act solely in the interest of the Oregon K–12 schools who are beneficiaries of the Common School Fund.

Based on economics, financial, and statistical principles applied to a range of investment possibilities, this report makes the following findings regarding the state’s management of the Elliott State Forest for the benefit of Oregon schools.

- Department of State Lands management of the Elliott State Forest yields returns of less than 1 percent. Even “risk free” investments, such as U.S. Treasuries, yield higher returns than the state is earning under its management of the Elliott.
- Because of the meager returns earned under Department of State Lands management, continued state management of the forest could raise questions whether the state is neglecting its fiduciary duty to Oregon schools.
- A superior alternative to continued state ownership and management of the forest would be to sell or lease the forest assets and place the proceeds under the management of the Oregon Investment Council. Even accounting for potentially wild swings in investment returns, this alternative would:
 - Provide 4 to 8 times as much funding to Oregon schools than current management of the forest provides, and
 - Maintain a fund balance that would provide school funding for generations into the future.

About the author

Eric Fruits, Ph.D. is President of Economics International Corp., an Oregon based consulting firm specializing in economics, finance, and statistics. He is also an adjunct professor at Portland State University and Pacific Northwest College of Art. Dr. Fruits has been engaged by private and public sector clients, including state and local governments, to evaluate the economic and fiscal impacts of business activities and government policies. His economic analysis has been widely cited and has been published in *The Economist*, the *Wall Street Journal*, and *USA Today*.

Dr. Fruits has been invited to provide analysis to the Oregon legislature regarding the state's tax and spending policies. He has been involved in numerous projects involving natural resources and Oregon forest products such as analysis for *Ross-Simmons v. Weyerhaeuser*, an antitrust case that was ultimately decided by the United States Supreme Court. His testimony regarding the economics of Oregon public employee pension reforms was heard by a special session of the Oregon Supreme Court.

His statistical analysis has been published in top-tier economics journals and his testimony regarding statistical analysis has been accepted by international criminal courts. Dr. Fruits has produced numerous research papers in financial economics, with results published in *Advances in Financial Economics* and the *Municipal Finance Journal*.

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1 Introduction and background

Approximately 2.3 million acres of state-owned lands and mineral rights are managed by the State Land Board as Common School Fund lands. The Oregon Department of State Lands acts as the administrative arm of the Land Board. Common School Fund lands managed by the Department include about 131,000 acres of forest lands, primarily in the Elliott State Forest (about 85,000 acres) in the Coast Range northeast of Coos Bay.¹

Fiduciary duty and the management of Trust Lands. The Common School Fund lands managed by the Department of State Lands are known as *Trust Lands*. A trust is a legal arrangement whereby control over property is transferred to a person or organization (the trustee) for the benefit of someone else (the beneficiary). In this case, the trustee is the State Land Board, whose members are the Governor, the Secretary of State, and the Treasurer. The beneficiary is Oregon's K-12 school system. As trustee, the State Land Board has a fiduciary responsibility to act solely in the interest of the beneficiary. That is, it is required to act as a prudent investor, and is not permitted to divert trust resources to anyone other than the beneficiary.

Declining revenues, shrinking income. In fiscal year 2009, the Elliott State Forest generated \$6.4 million in income. Exhibit 1 shows, since peaking in 2000, incomes have declined. The decline is a result of reduced revenues combined with increasing costs.² Even during the latest housing boom, income from the Elliott has been trending downward.

The Oregon Departments of Forestry and State Lands estimate that the Elliott State Forest makes up 75 percent to 85 percent of the total revenue generated from Common

¹State Land Board (2006).

²Department of Forestry (2005, 2009); Department of State Lands (2009); Departments of Forestry and State Lands (2009).

School Fund lands.³ In 2009, however, the Elliott's share declined to approximately two-thirds of the total revenue, or \$9.1 million.⁴

The Elliott State Forest is a valuable asset with yields that are lower than U.S. Treasuries. In fiscal year 2009, the Elliott State Forest generated \$6.4 million in income.⁵ Department of State Lands staff testified that the current return on assets is 0.8 percent.⁶ This indicates that Department of State Lands value the Elliott at \$802.7 million. In comparison, research presented to the State Land Board in 2006, valued the Elliott between \$359 million and \$747 million.⁷

Department of State Lands management of the Elliott State Forest produce yields of less than 1 percent per year and has a goal to produce a 3 percent to 5 percent annual yield at some point in the future.⁸ In contrast, yields on 5-year U.S. Treasuries are 2.14 percent; yields on 30-year U.S. Treasuries are 4.33 percent per year.⁹ Treasuries often are considered "risk free" because there is almost no risk of default by the issuer. For this reason they are also considered a "safe" investment.

2 Proceeds from the sale of rights to the Elliott State Forest would produce superior yields and maintain the asset for future generations

An alternative to the meager yields Department of State Lands currently produce from the Elliott State Forest, would be to sell the forest and place the proceeds in the Common School Fund where they could earn a greater return.¹⁰ One investment would be U.S. Treasuries, which would provide yields that are superior to those earned by Department of State Lands and would be relatively risk-free.

An alternative to U.S. Treasuries would be to place the proceeds within the Common School Fund for financial management by the Oregon Investment Council. The Oregon Investment Council invests all State of Oregon funds, including the Common School Fund, the Oregon Public Employees Retirement Fund (PERS), and the State Accident Insurance Fund. It maintains a diversified portfolio over a wide range of investments including privately held enterprises, publicly traded securities, and real estate. Its compound annual

³Departments of Forestry and State Lands (2009).

⁴Department of Forestry (2009).

⁵Department of Forestry (2009) reports \$9.1 million in revenues from the Elliott State Forest and \$2.7 million in total costs, producing income of \$6.4 million.

⁶Lilly (2009). The testimony is not clear whether or how the return on assets applies to the Elliott State Forest. In comparison, based on the estimated value of the Elliott provided by Lord (2005), the return on assets for fiscal year 2009 is 1.3 percent.

⁷Ragon (2007) provides a summary of the research. Lord (2005) estimates that the value of the Elliott State Forest was \$489 million in 2005.

⁸Lilly (2009).

⁹U.S. Department of Treasury (2009).

¹⁰Another alternative would be a long-term lease arrangement. While leasing allows the State to maintain ownership of the Elliott State Forest, it may also maintain the states costs and obligations associated with ownership.

(mean) return is 7.74 percent, with a standard deviation of 12.5 percent.¹¹

3 Projections of Common School Fund balance and transfers to schools under Oregon Investment Council management

While an actuarial approach tends to assume an annual return that does not vary from year-to-year, in reality investment returns can vary substantially from year-to-year. For investments in which an annual payment is mandated or expected—such as the annual transfers from Department of State Lands to the Common School Fund or from Common School Fund to school districts—variations in returns can have significant impacts on the annual payments as well and the fund’s balance.¹² Thus, cases in which Oregon Investment Council returns differ from the actuarially assumed rate of return in any year could result in liabilities far larger than those predicted by an actuarial model that assumes the same rate of return in each and every year.

To understand the effect of variability in Oregon Investment Council returns on the transfers to the Common School Fund and the annual balance in the Common School Fund this analysis uses a Monte Carlo technique to apply a large number of possible sequences of returns, all drawn from a distribution of possible returns with an expected value equal to the actuarially-assumed rate. By analyzing the distribution of possible outcomes, it is possible to better evaluate “best case” and “worst case” scenarios. In finance, Monte Carlo methods are used to value and analyze complex investments by simulating the uncertainty affecting their value, and then determining their value over the range of resultant outcomes. The technique is employed as follows.

1. The mean and standard deviation of Oregon Investment Council returns are used to produce a random draw from normal distribution of returns ($\mu = 0.0774$, $\sigma = 0.125$) over then next 100 years. This process is repeated 100 times, to provide a range of potential outcomes and transfers that vary with the year-to-year variations in returns.
2. The randomly generated returns are constrained to be within the range of -0.6 and $+0.6$ for any given year. By comparison, the largest year-to-year swings in the Standard & Poor’s 500 Index has been no lower than -0.4 and no higher than $+0.4$.
3. The Elliott State Forest is assumed to sell for \$750 million in 2010, an amount that is less than the current Department of State Lands implied value and approximately the same as the most reasonable value calculated by Ragon (2007).
4. Schools are assumed to be credited with the *greater* of either (a) one-half of the year-over-year gains in the fund, or (b) 2.5 percent of the outstanding balance in the fund. Under this assumption, if the fund earns less than 2.5 percent in a given year, then schools will be credited with 2.5 percent (this means that some of the fund’s principal will be diminished by the transfers to schools) On the other hand, if the fund earns more than 2.5 percent in a given year, then one-half of the returns will be transferred

¹¹Hallmark and Larrabee (2009).

¹²For example, failure to accurately anticipate such statistical possibilities contributed to the PERS crisis earlier this decade.

to schools and the other half will be added to the fund's balance. These parameters can be varied, however, this analysis finds that the parameter used here perform the best at both providing funds to schools while maintaining resources in the fund for future generations.

4 Results and conclusions

Even under a "worst case" scenario, management of proceeds from the sale of the Elliott State Forest managed by the Oregon Investment Council would produce average yields that are significantly larger than those provided under the current management and operation of the forest.

End-of-year balances. Exhibit 2 shows the end-of-year balance in the Common School Fund if the Elliott State Forest were sold and the proceeds managed by Oregon Investment Council.

- Under the "worst case" scenario (the scenario that provides the lowest present value of payments to schools), the balance in the fund at the end of 100 years would be 1.6 times higher than the amount placed in the fund in the first year.
- Under the "best case" scenario (the scenario that provides the highest present value of payments to schools), the balance in the fund at the end of 100 years would be 52 times higher than the amount placed in the fund in the first year.
- Exhibit 3 shows the result providing the median net present value of payments to schools. It shows that the balance in the fund at the end of 100 years would be almost 15 times higher than the amount placed in the fund in the first year.

Thus, Oregon Investment Council management of investments under the transfer system described above would provide for an increase in the fund balance for the life of the fund.

Income transferred to Oregon K-12 schools. Exhibit 4 shows the annual payments to schools from the Common School Fund if the Elliott State Forest were sold and the proceeds managed by Oregon Investment Council.

- Under the "worst case" scenario, in the first 10 years, schools would receive an average of \$25.7 million a year, or more than four times as much as they currently receive from the Elliott.
- Under the "best case" scenario, in the first 10 years, schools would receive an average of \$51.8 million a year, or more than eight times as much as they currently receive from the Elliott.
- Exhibit 5 shows the result providing the median net present value of payments to schools. It shows that in the first 10 years, schools would receive an average of \$34.6 million a year, or more than five times as much as they currently receive from the Elliott.

Thus, Oregon Investment Council management of investments under the transfer system described above would provide for a substantial—and sustainable—increase in the amount of support provided to Oregon’s schools.

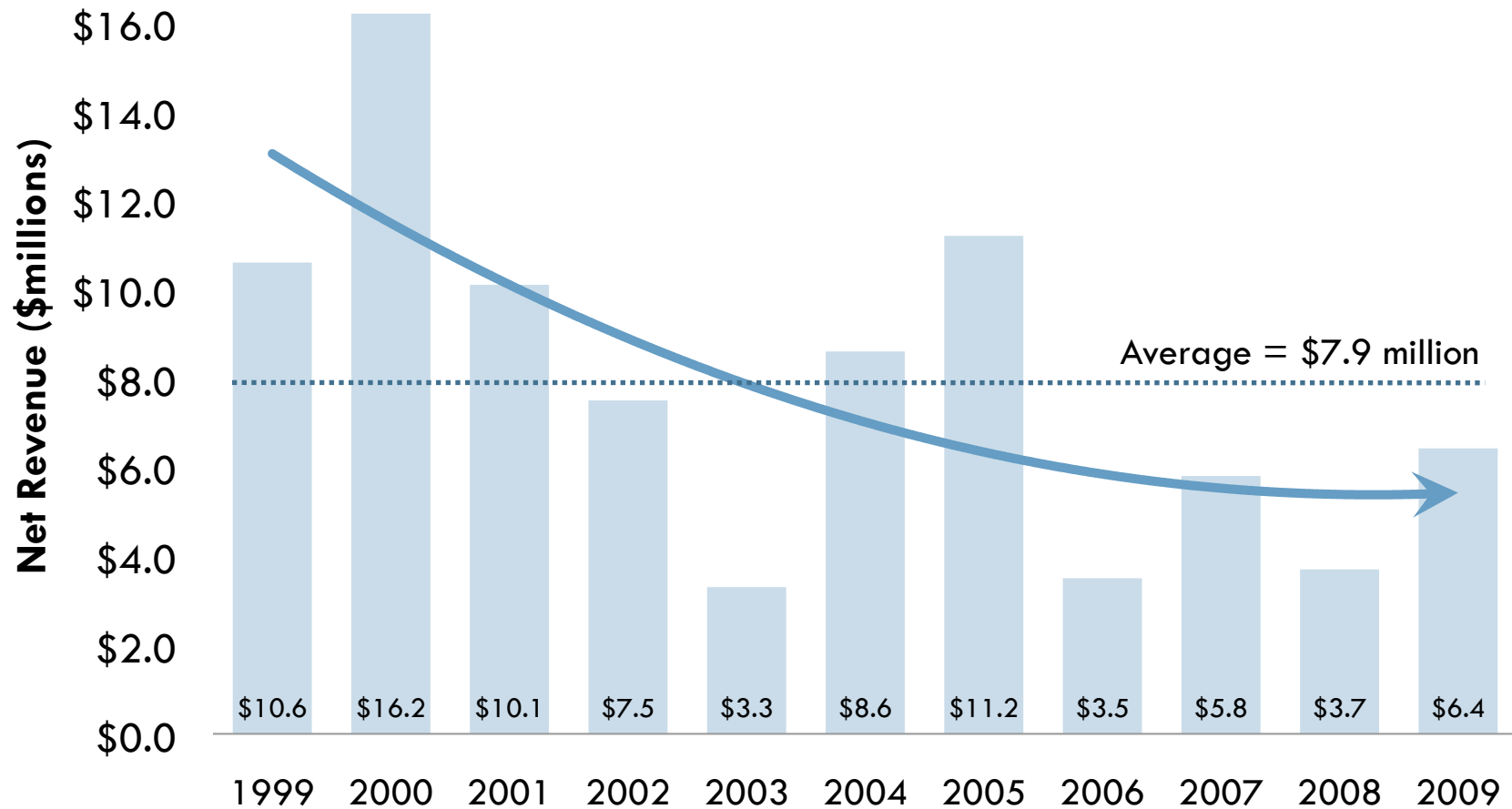
References

- Department of Forestry (2005). Status of Common School forest land management. State of Oregon.
- Department of Forestry (2009). The Common School Forest Lands annual report. Prepared for the Department of State Lands by the Oregon Department of Forestry.
- Department of State Lands (2009). Annual performance progress report (APPR) for fiscal year (2008–2009); proposed KPM’s for biennium (2009–2011). State of Oregon.
- Departments of Forestry and State Lands (2009). 2009–2011 backgrounder: Elliott State Forest. State of Oregon.
- Hallmark, B. and Larrabee, M. (2009). Oregon Public Employees’ Retirement System experience study for December 31, 2008: Actuarial valuation actuarial methods and economic assumptions. Prepared by Mercer for Oregon Public Employees’ Retirement System.
- Lilly, J. E. (2009). Testimony to State Land Board. Manager, Asset Management Section, Land Management Division, Oregon Department of State Lands. October 13.
- Lord, R. (2005). Cost-benefit analysis of the Elliott State Forest Common School Fund lands. Presentation to Western Forest Economists Meeting. Prepared by Mason, Bruce & Girard, Inc. for Oregon Department of State Lands and Oregon Department of Forestry.
- Ragon, B. (2007). Should the state of oregon sell the elliott state forest? Presentation to Western Forest Economists Meeting.
- State Land Board (2006). Asset management plan: A plan to guide the care and management of land, waterways, mineral and energy resources to benefit the Common School Fund. Prepared by Cogan Owens Cogan, LLC and PGP Valuation, Inc. and Mason, Bruce & Girard, Inc. for the State of Oregon.
- U.S. Department of Treasury (2009). Daily Treasury yield curve rates. Retrieved December 3.

Exhibit 1

Net Revenue to CSF from Elliott State Forest

Revenue, less total costs, fiscal years 1999 through 2009

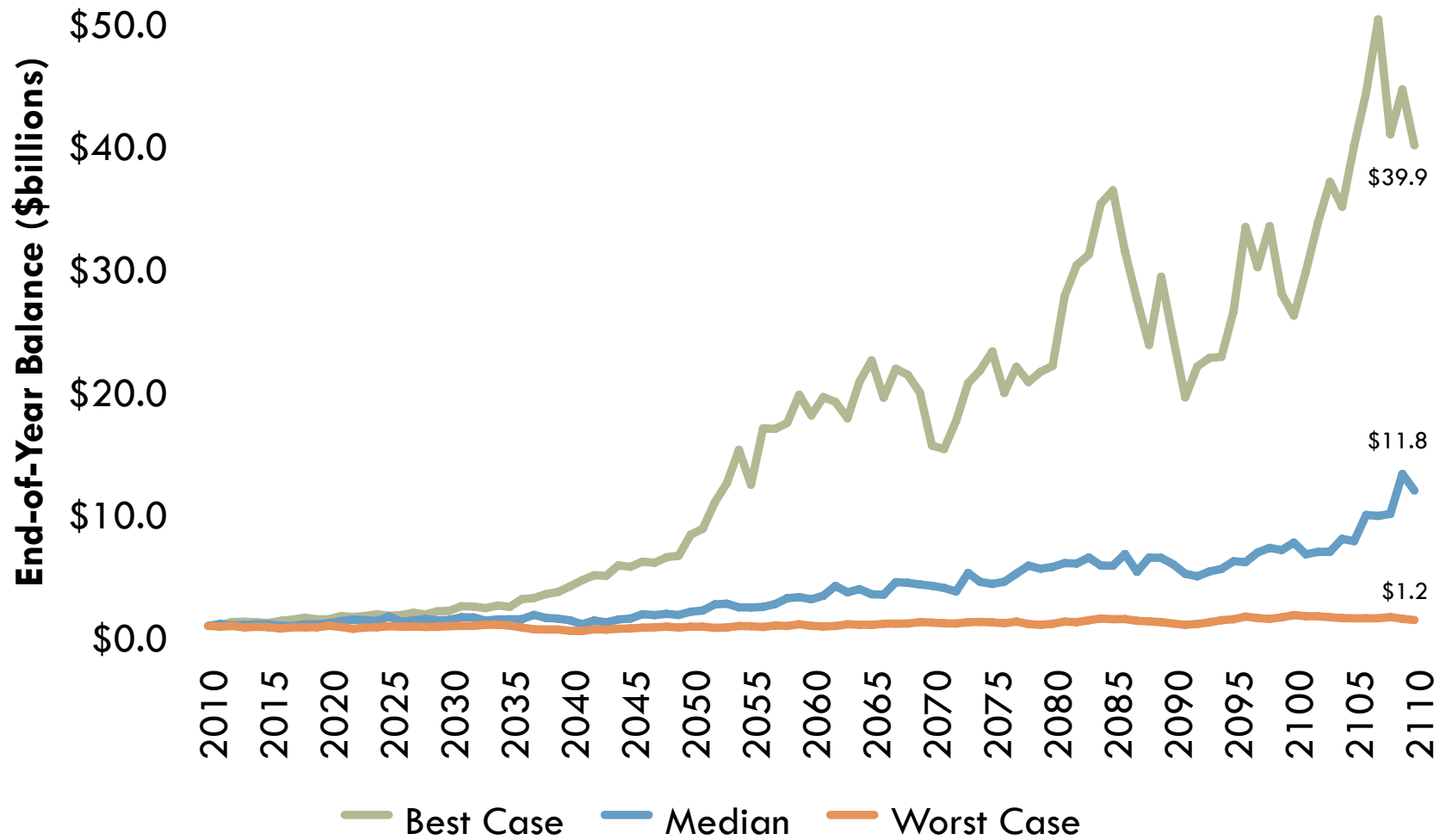


Source: Author's calculations based on Department of Forestry (2005, 2009); Department of State Lands (2009); Departments of Forestry and State Lands (2009).

Exhibit 2

Projected Annual Value of Fund

Assuming \$750 million initial endowment from sale/lease of Elliott State Forest

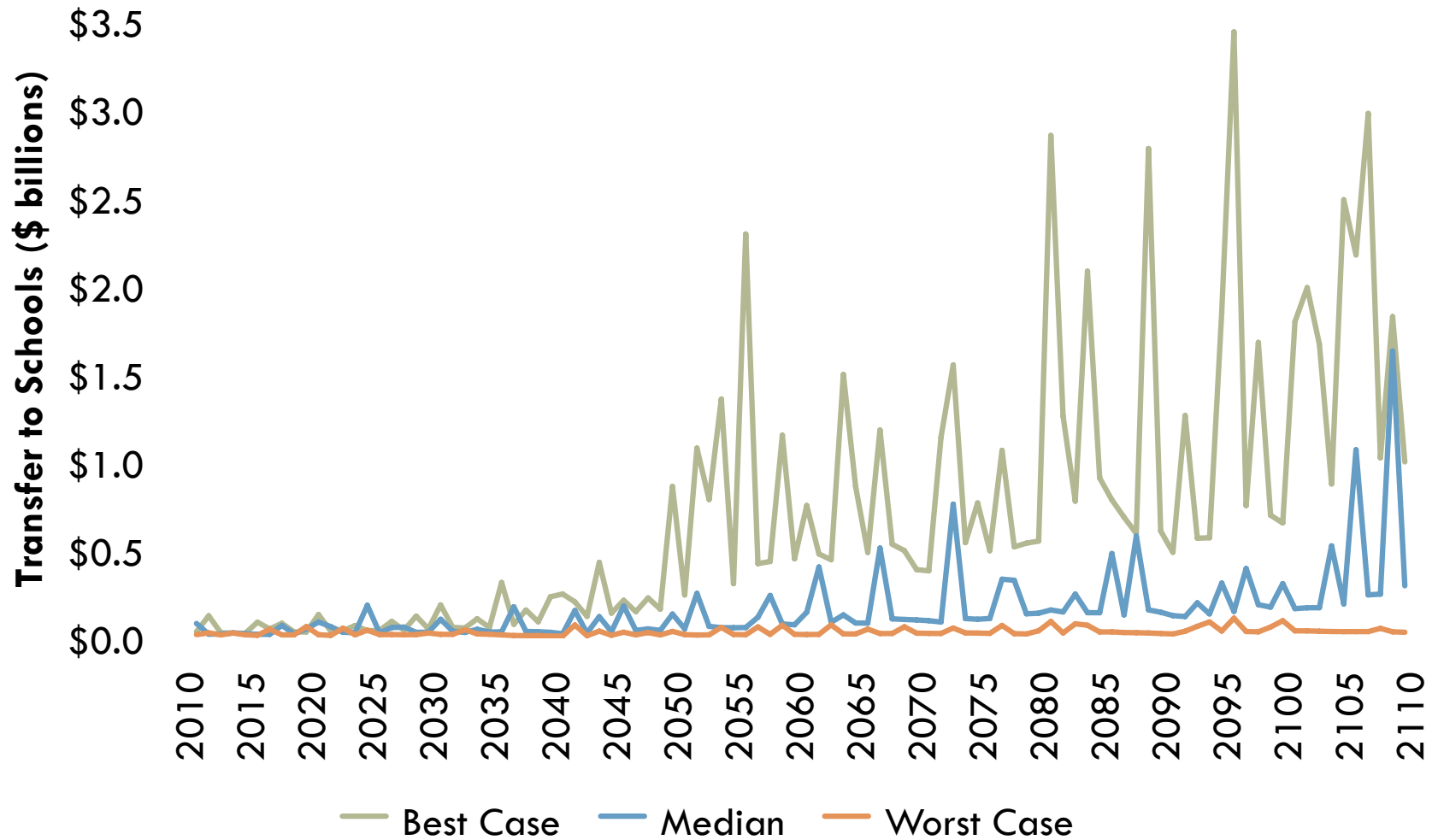


Source: Author's calculations based on Hallmark and Larrabee (2009).

Exhibit 3

Projected Annual Transfer to Schools

Greater of 50% of annual growth in fund or 2.5% of value of fund

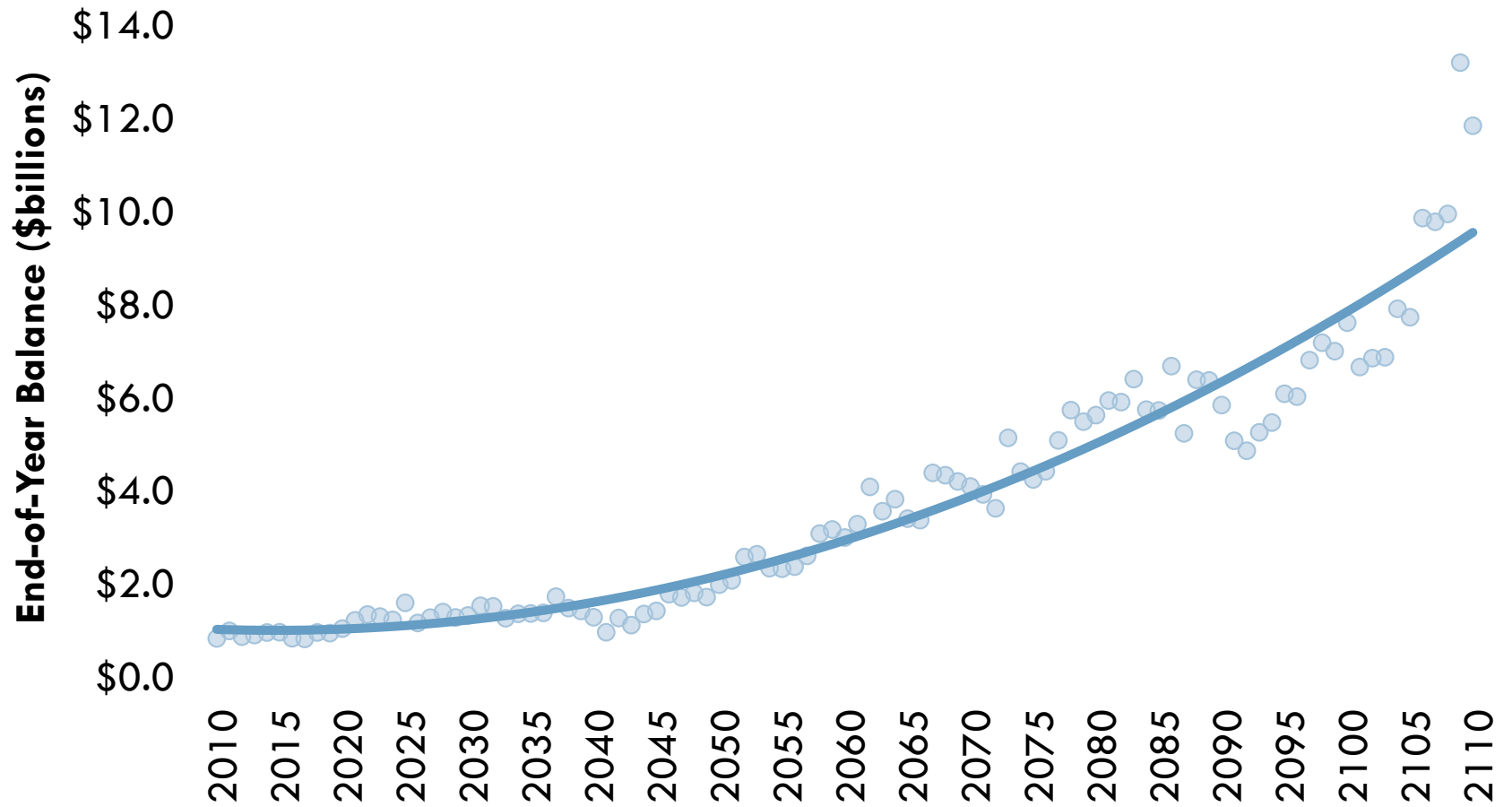


Source: Author's calculations based on Hallmark and Larrabee (2009).

Exhibit 4

Projected Median Annual Value of Fund

Assuming \$750 million initial endowment from sale/lease of Elliott State Forest

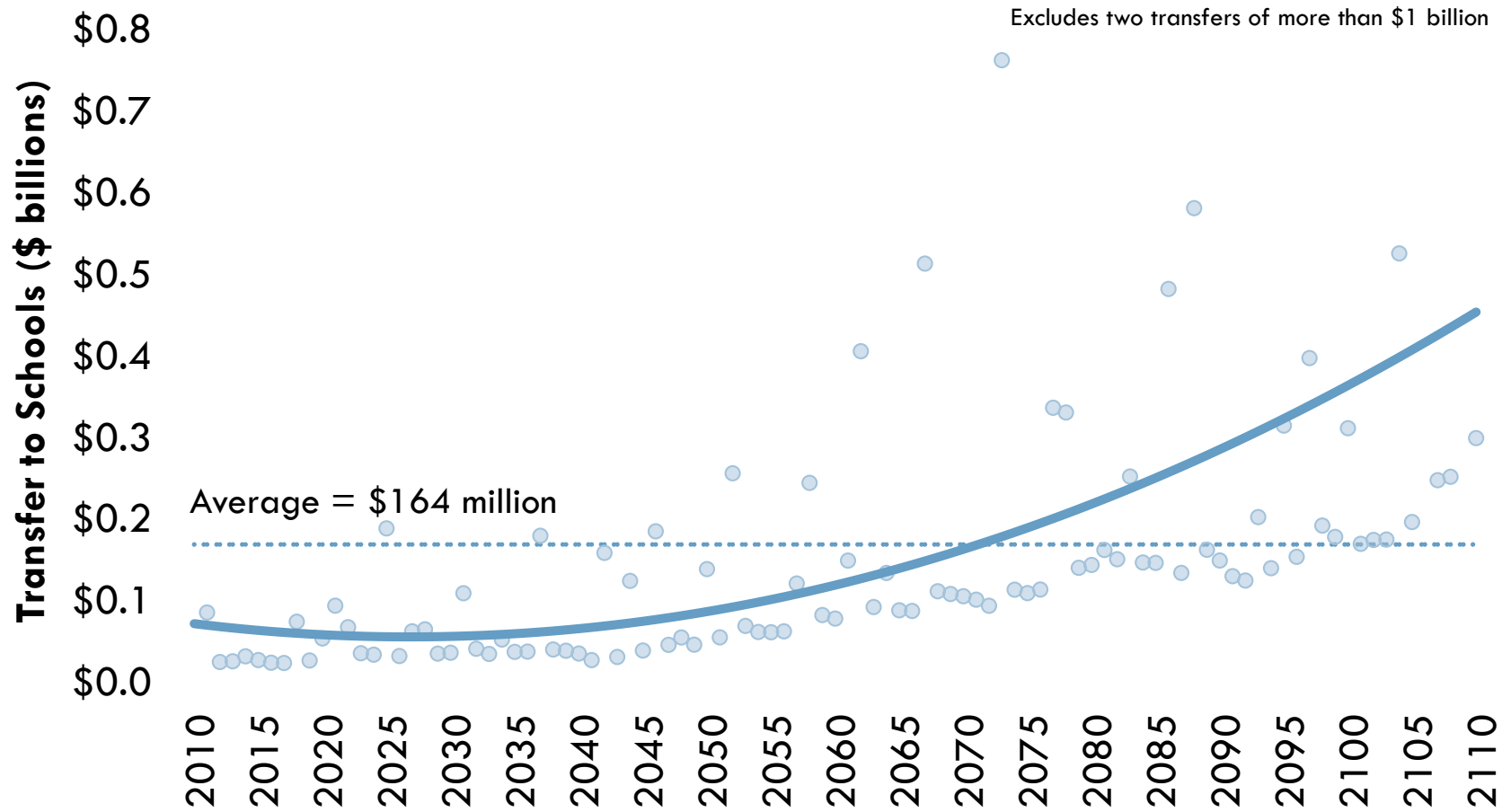


Source: Author's calculations based on Hallmark and Larrabee (2009).

Exhibit 5

Median Annual Transfer to Schools

Greater of 50% of annual growth in fund or 2.5% of value of fund



Source: Author's calculations based on Hallmark and Larrabee (2009).