

EXHIBIT D1

EQUITY IN PUBLIC SCHOOL FUNDING AND EXPENDITURES

Tuesday, June 4, 2024



2024 ADEQUACY STUDY



HISTORICAL CONTEXT

Lake View

Unconstitutional on twin grounds of **inadequacy** under Education Article and **inequity** under Equality provisions of the Arkansas Constitution.

Lake View

Must be decided on actual expenditures: “the measuring rod for equality.”

(Before categorical funds were added.)

BLR

Introduces the Court’s measures of equality into the 2016 biennial adequacy study.

EQUITY REPORT

1. Horizontal Equity (Revenues)

Distribution of funds to districts

2. Fiscal Neutrality (Revenues)

District to district property wealth inequity

3. Vertical Equity (Expenditures)

Equity of spending

REVENUE TYPES

1. Foundation Funding and Property Taxes Per-Student

- **Foundation Funding (SFF)**
- **Net Property Taxes**
 - Includes 98% of Uniform Rate of Tax (URT)
- **Miscellaneous Funds**

2. Foundation Funding, Property Taxes and Other Funding

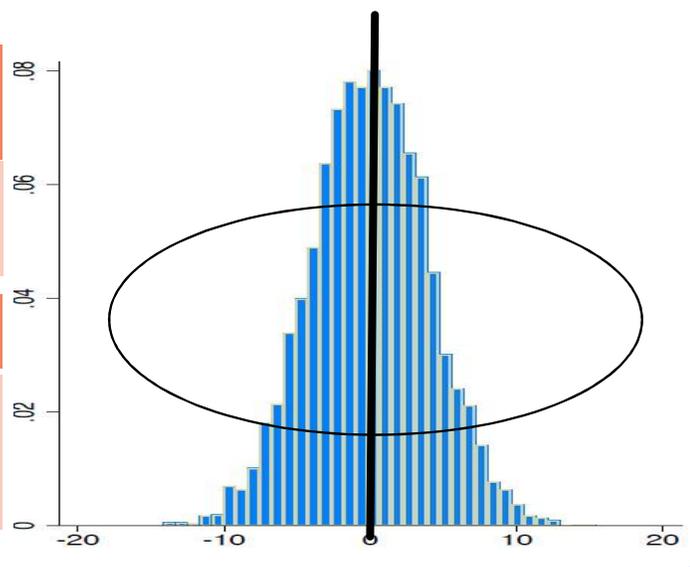
- **Revenue Type #1;** and
- **Categorical Funds** (English Learner; Alternative Learning Environment, Enhanced Student Achievement (ESA), and Professional Development); and
- **Supplemental Funds** (Isolated/Special Needs Isolated, Growth, Declining, Special Education High-Cost Occurrences, ESA Matching, Salary Equalization, Enhanced Transportation)



HORIZONTAL EQUITY

HORIZONTAL EQUITY

- Measures of Central Tendency**
Represents the center point or typical value
- Measures of Dispersion**
Represents how much the funding values vary across districts



HORIZONTAL EQUITY

Measures of Central Tendency

Mean (Average)

Arithmetic average of the data and usually characterizes the "typical" or "expected" funding value

- 1 2 2 4 6
- Average = 3

Median

Middle funding value if all values were arranged from the lowest to the highest values (or vice versa)

1 2 **2** 4 6

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HORIZONTAL EQUITY

Mean and Median

Mean	2021	2022	2023
Revenue 1	\$ 8,145.26	\$8,226.78	\$8,539.89
Revenue 2	\$ 9,141.65	\$9,323.30	\$9,773.76
Median	2021	2022	2023
Revenue 1	\$ 7,987.77	\$8,000.71	\$8,262.06
Revenue 2	\$ 8,950.38	\$9,005.96	\$9,372.18

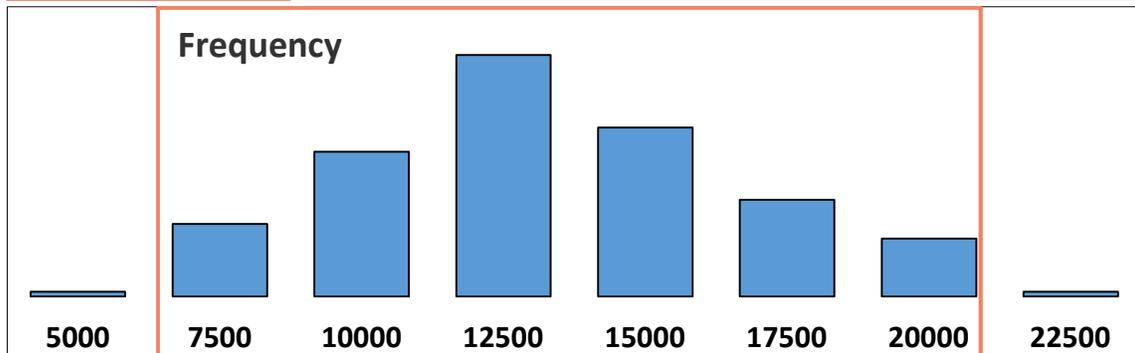
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HORIZONTAL EQUITY

Measures of Dispersion

Restricted Range

The difference between the 5th and 95th percentiles.



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HORIZONTAL EQUITY

Measures of Dispersion

Federal Range Ratio

- Divides the restricted range by the 5th percentile;
- Higher the federal range ratio, the more data are spread → Suggests less equity
- Rule of thumb = preferred value is ≤ 0.25

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Horizontal Equity by Revenue Type

Restricted Range and Federal Range Ratio

Restricted Range	2021	2022	2023
Revenue 1	\$ 2,897.74	\$2,530.44	\$3,349.35
Revenue 2	\$ 3,781.47	\$3,572.00	\$4,029.86
Federal Range Ratio	2021	2022	2023
Revenue 1	0.42	0.35	0.46
Revenue 2	0.50	0.45	0.49

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HORIZONTAL EQUITY

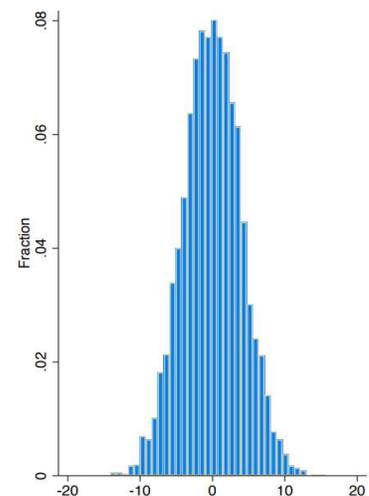
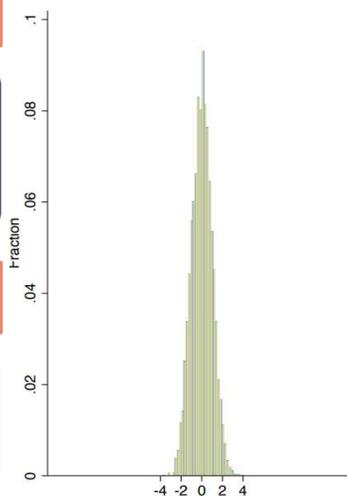
Measures of Dispersion

Standard Deviation

The extent to which the funding values deviate from the expected or typical value (mean).

Coefficient of Variation

The extent of variation in the funding values with respect to the mean expressed as fraction.



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HORIZONTAL EQUITY

Standard Deviation and Coefficient of Variance

Standard Deviation	2021	2022	2023
Revenue 1	\$ 1,223.09	\$1,265.02	\$2,231.16
Revenue 2	\$ 1,304.59	\$1,428.50	\$2,618.19
Coefficient of Variation	2021	2022	2023
Revenue 1	0.15	0.15	0.26
Revenue 2	0.14	0.15	0.27

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HORIZONTAL EQUITY

McLoone Index

- Looks at lower half of distribution
- Ranges from 0 to 1
- Values closer to 1 indicate more equality

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HORIZONTAL EQUITY

Hypothetical World

Median District D	<div style="width: 100%; height: 15px; background-color: #f47920;"></div>	\$1,000
District C	<div style="width: 100%; height: 15px; background-color: #f47920;"></div>	\$1,000
District B	<div style="width: 100%; height: 15px; background-color: #f47920;"></div>	\$1,000
District A	<div style="width: 100%; height: 15px; background-color: #f47920;"></div>	\$1,000

\$0
\$1,000
\$2,000

How does the sum of the revenue values in the bottom half of districts compare to a hypothetical world where each district in the bottom half were to have funding equal to the district at the median?

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HORIZONTAL EQUITY

McLoone Index

McLoone Index	2021	2022	2023
Revenue 1	0.929	0.942	0.925
Revenue 2	0.929	0.941	0.928

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HORIZONTAL EQUITY

Gini Coefficient of Inequality

- Measures cumulative dollars vs cumulative population
- Ranges from 0 to 1
- Values closer to 0 indicate more equality

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HORIZONTAL EQUITY

Gini Coefficient of Inequality

Gini Coefficient of Inequality	2021	2022	2023
Revenue 1	0.068	0.023	0.024
Revenue 2	0.068	0.014	0.011

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Introduction

Horizontal Equity

Fiscal Neutrality

Vertical Equity



FISCAL NEUTRALITY

FISCAL NEUTRALITY

Wealth Neutrality Correlation

- How do property tax and per student funding amounts move together?
- Correlations range -1 to +1, with 0 = no relationship

FISCAL NEUTRALITY

Wealth Elasticity

- How much does one variable cause the other to move
- Large correlations between property wealth and funding are not relevant to policy when wealth elasticity coefficients are small
- Looking at difference with and without URT districts
- Same revenue categories

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FISCAL NEUTRALITY BY REVENUE TYPE

Revenue 1 - All Districts	2021	2022	2023
Wealth-Neutrality Correlation	0.801	0.800	0.744
Wealth Elasticity	0.179	0.016	0.024
Revenue 1 - No URT Districts	2021	2022	2023
Wealth-Neutrality Correlation	0.584	0.652	0.726
Wealth Elasticity	0.122	0.011	0.028

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FISCAL NEUTRALITY BY REVENUE TYPE

Revenue 2 – All Districts	2021	2022	2023
Wealth-Neutrality Correlation	0.762	0.763	0.715
Wealth Elasticity	0.180	0.017	0.028
Revenue 2– No URT Districts	2021	2022	2023
Wealth-Neutrality Correlation	0.540	0.568	0.718
Wealth Elasticity	0.133	0.012	0.034

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VERTICAL EQUITY

VERTICAL EQUITY

Per-student expenditures by the following district characteristics (deciles):

- School district size (Average Daily Membership or ADM)
- Percentage of students that are non-white (minority)
- Percentage of students eligible for free and reduced price lunches (FRL)
- District property wealth

TWO EXPENDITURE VARIABLES TO BE EXAMINED

- *Select* state funding per-student expenditures
- All funding per-student expenditures

Note: Both *select* state funding and *all* funding expenditures do not include expenditures for capital projects, facilities acquisition/construction, or debt service.

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SELECT STATE FUNDS EXPENDITURES

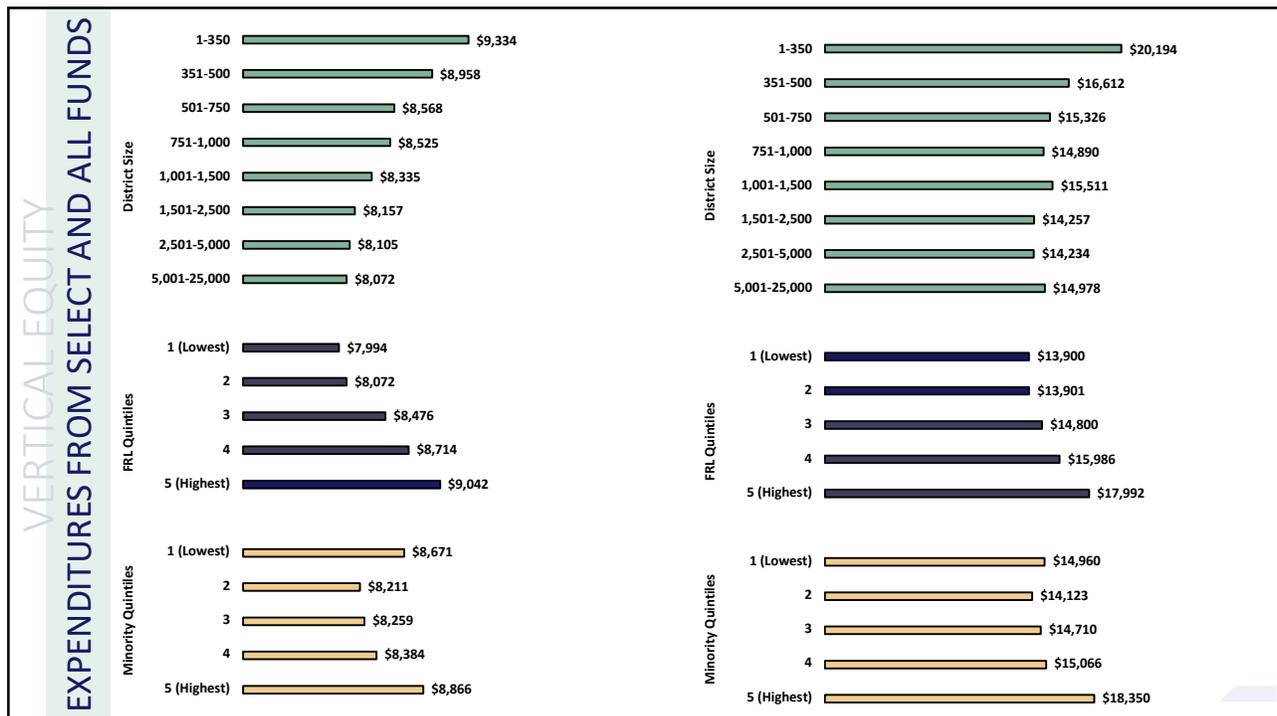
Includes expenditures from the following funding sources:

- **State Foundation Funding and Net Property Tax**
- **Other Adequacy-Related Funding, including Categorical and Supplemental Funding Streams:**
 - Enhanced Student Achievement (ESA) state categorical funding
 - English Language Learner funding
 - Professional Development funding
 - Alternative Learning Environment funding
 - Student Growth funding
 - Declining Enrollment funding
 - Isolated and Special Needs Isolated funding
 - Special Education High-Cost Occurrences funding
 - ESA Matching Grant
 - Enhanced Transportation
 - Teacher Salary Equalization

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EXPENDITURES FROM ALL FUND SOURCES

Includes district and charter school expenditures from all funding sources available to districts and charters including federal funds and other state/local funds.

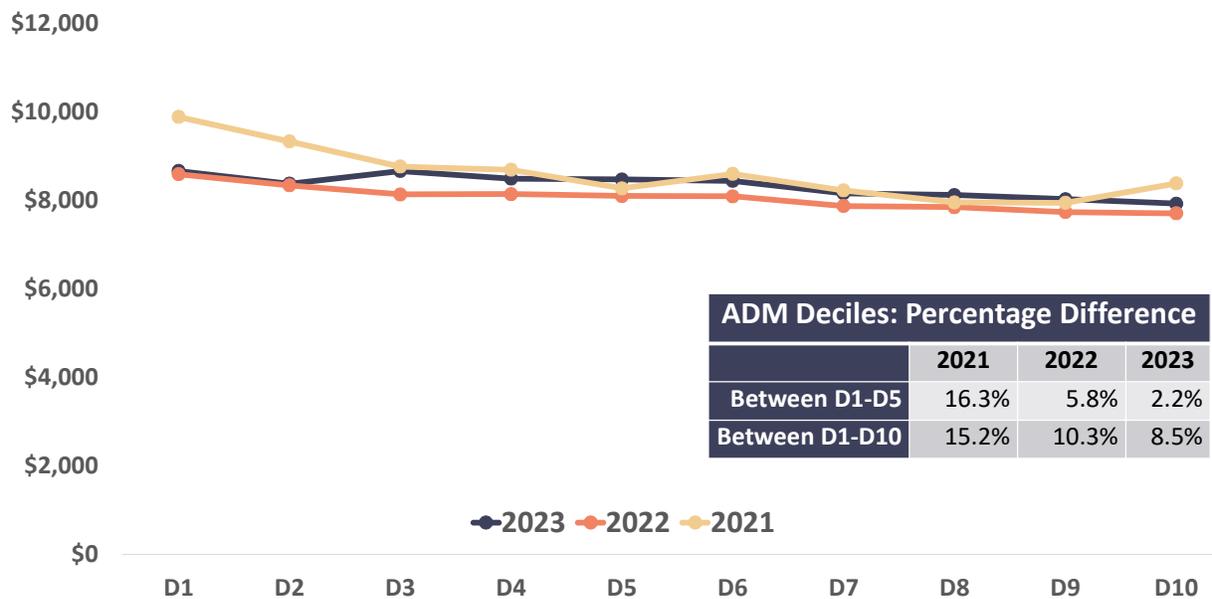


VERTICAL EQUITY BY ADM DECILES

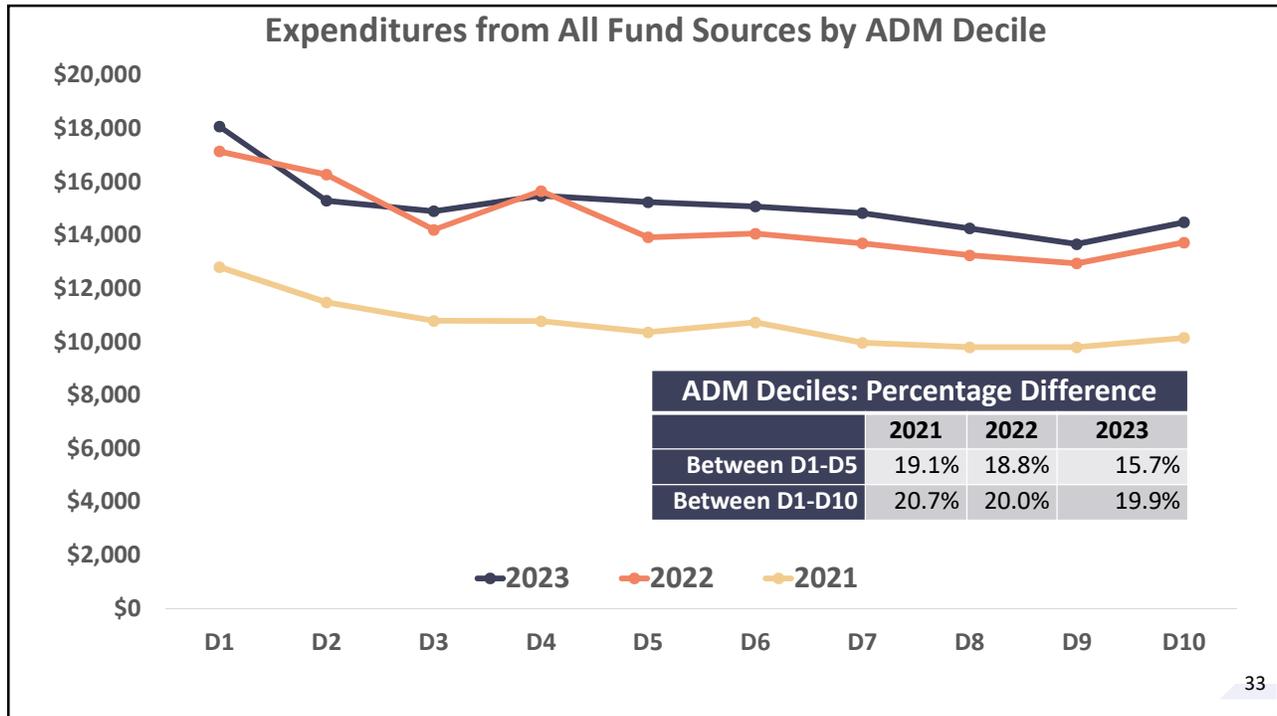
Average ADM Values by Decile			
	2021	2022	2023
D1	264	259	296
D2	445	441	454
D3	549	555	571
D4	695	675	690
D5	811	815	825
D6	1,019	1,021	1,009
D7	1,309	1,310	1,321
D8	1,840	1,830	1,851
D9	2,953	3,020	3,049
D10	8,250	8,312	8,348

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Expenditures from Select State Funding by ADM Decile

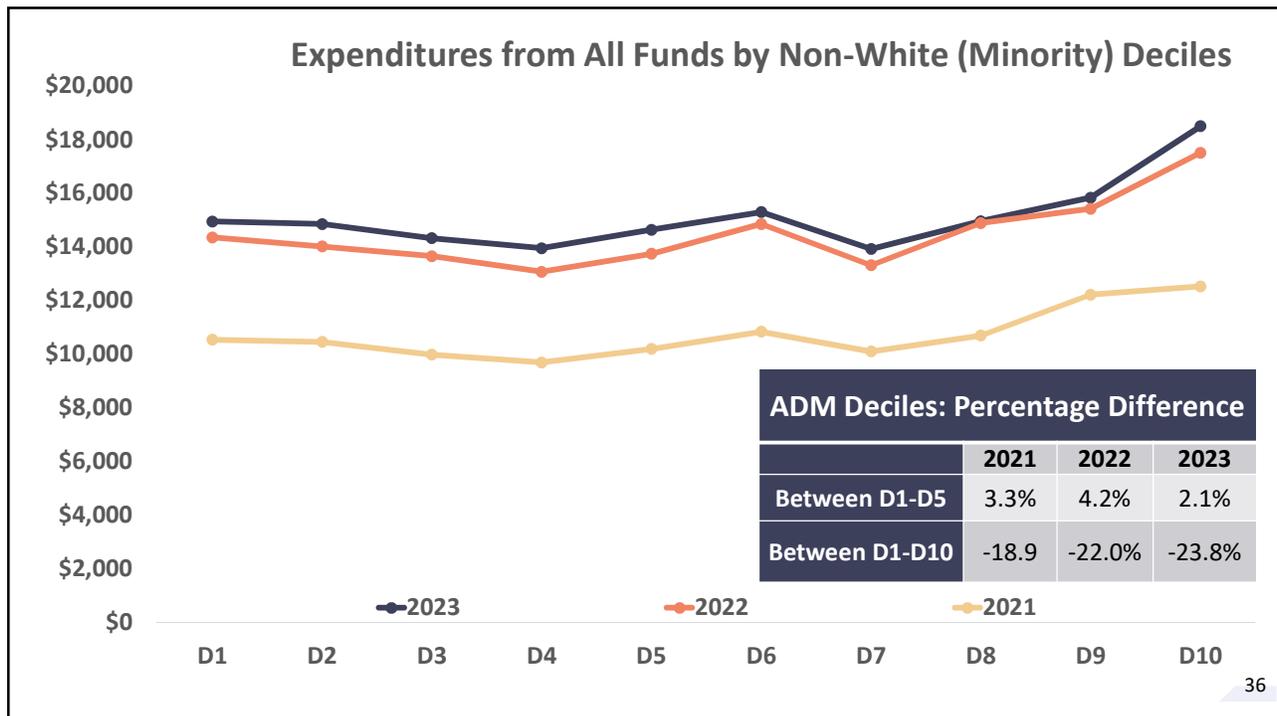
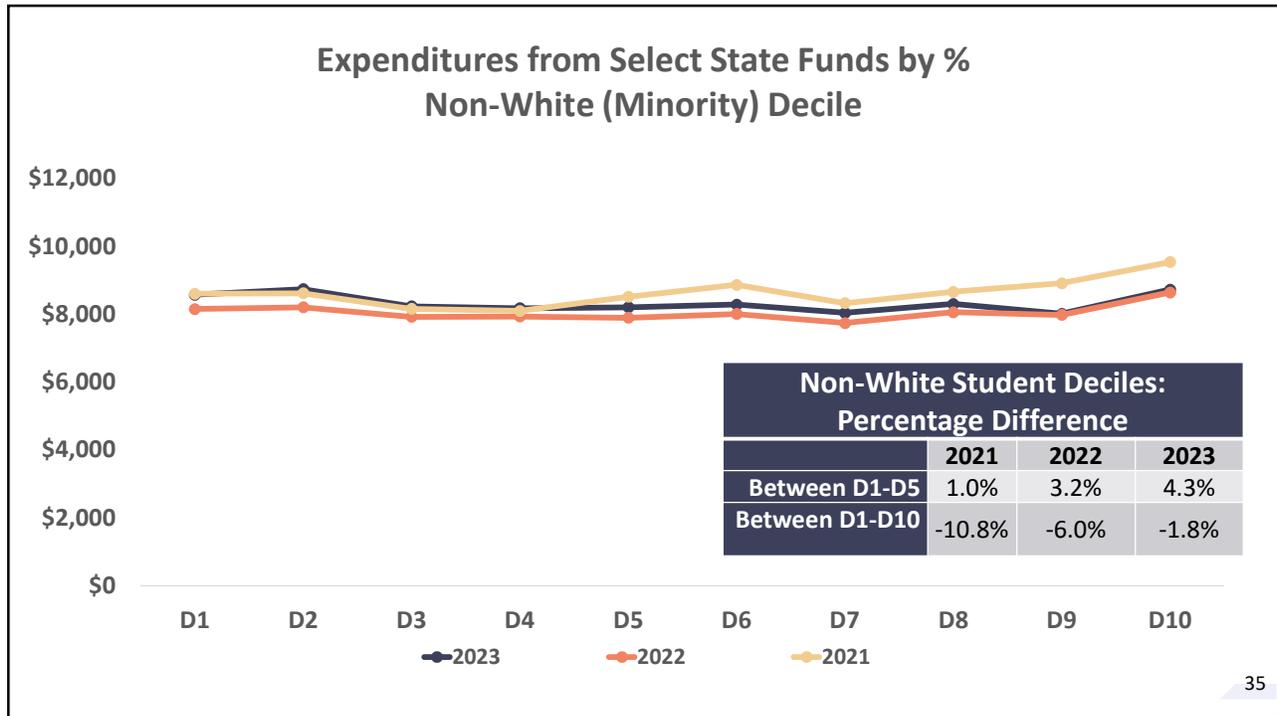


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VERTICAL EQUITY BY NON-WHITE (MINORITY) DECILES

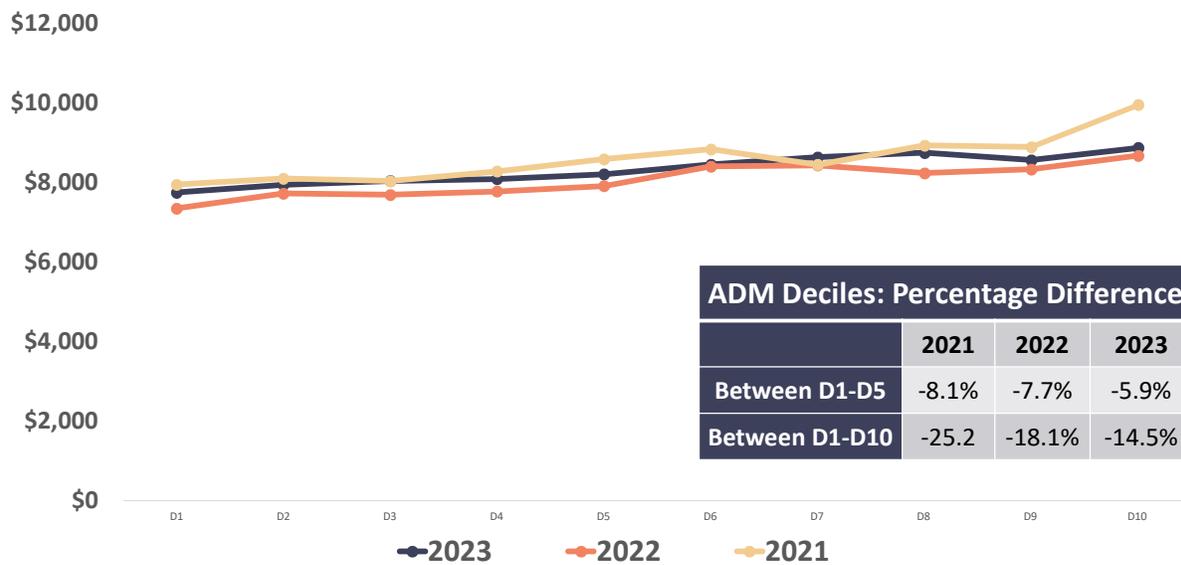
Average Non-White (Minority) Percentages			
	2021	2022	2023
D1	4%	4%	4%
D2	6%	6%	6%
D3	9%	9%	9%
D4	12%	12%	12%
D5	17%	17%	17%
D6	25%	25%	25%
D7	35%	35%	35%
D8	49%	48%	48%
D9	69%	68%	67%
D10	93%	91%	90%

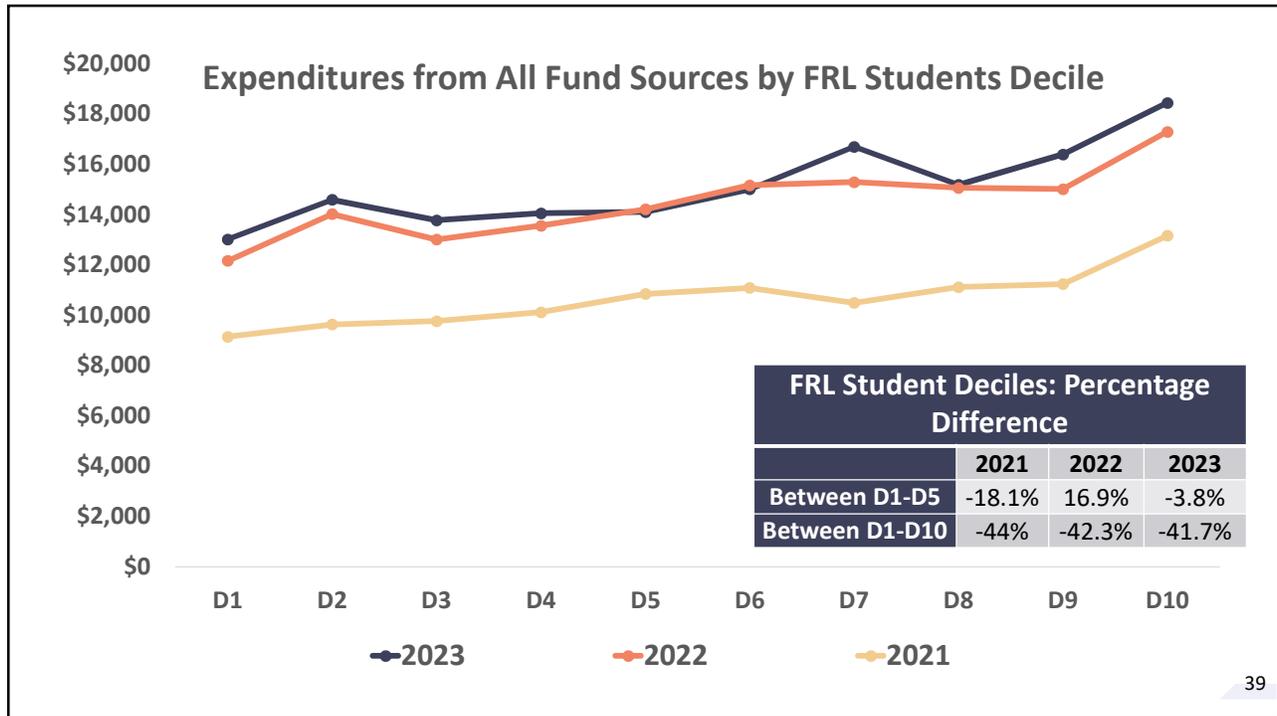


VERTICAL EQUITY BY FRL DECILES

Average FRL Percentages			
	2021	2022	2023
D1	34%	32%	32%
D2	48%	47%	46%
D3	56%	55%	53%
D4	62%	62%	60%
D5	69%	68%	65%
D6	72%	71%	71%
D7	73%	73%	72%
D8	76%	75%	74%
D9	80%	79%	78%
D10	91%	91%	89%

Expenditures from Select State Funds by FRL Students Decile

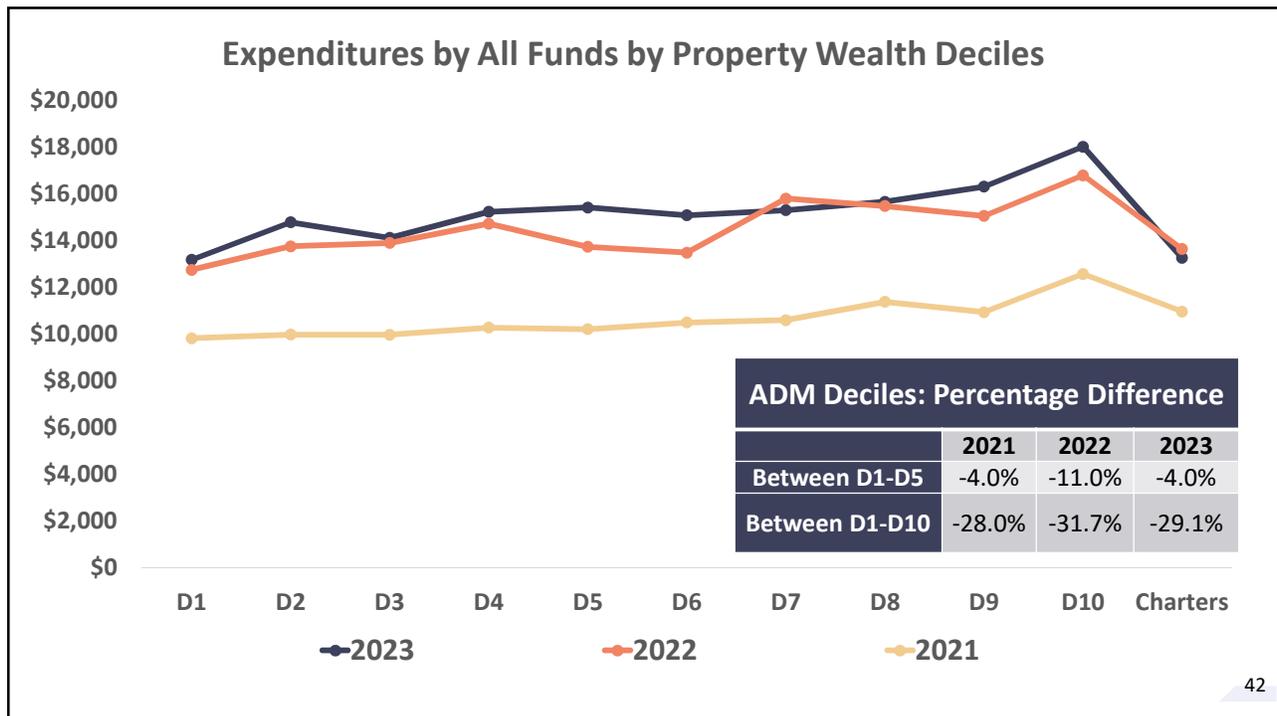
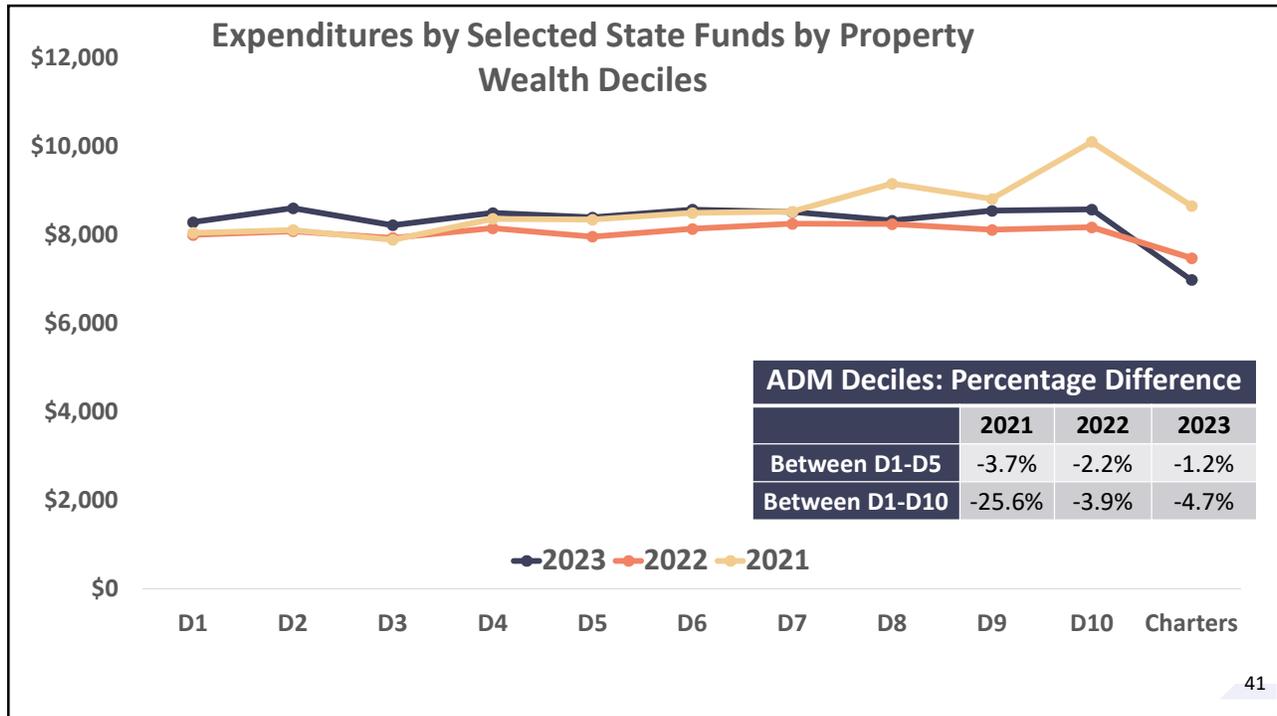




VERTICAL EQUITY BY PROPERTY WEALTH DECILES

Average Property Wealth Values			
	2021	2022	2023
D1	\$53,740	\$56,717	\$60,197
D2	\$67,264	\$71,472	\$75,842
D3	\$74,627	\$78,337	\$82,777
D4	\$82,964	\$86,274	\$91,419
D5	\$90,578	\$94,716	\$100,593
D6	\$99,415	\$103,436	\$108,398
D7	\$109,339	\$114,207	\$119,987
D8	\$126,467	\$132,766	\$139,547
D9	\$154,474	\$160,064	\$165,689
D10	\$243,966	\$254,880	\$260,752

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Federal Range Ratio

Funding Source	2021 Federal Range Ratio	2022 Federal Range Ratio	2023 Federal Range Ratio
Per-Student Select State Funding Expenditures	0.29	0.25	0.5
Per-Student Total Expenditures from All Fund Sources	0.39	0.91	0.86

In its 2002 decision, the Arkansas Supreme Court stated that, “Using expenditures in the calculation of the Federal Range Ratio, this court finds that there is more than a 25% difference between the 5th and 95th percentile in amount spent per pupil, which is not in compliance with the 1994 Order.”



Introduction

Horizontal Equity

Fiscal Neutrality

Vertical Equity



UP NEXT

Learning Expectations / Academic Standards