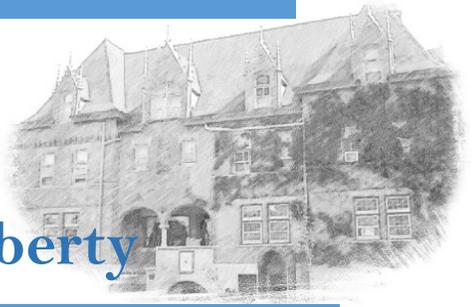


Policy Brief

Wisconsin Institute for Law & Liberty



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Pope's Fallacy: *A Brief Primer on General School Aid*

Introduction

Proponents of the status quo in education have been using a memo from the Department of Public Instruction to argue that “school aid being held at zero will cause over half of our school districts to lose funding.”¹ This is a bold claim, but it is highly misleading. State aid is not the only source of “funding” for local schools. A recent DPI memo does note, “[m]ore than half of Wisconsin public school districts will receive less general aid in the 2015-16 school year than they did for the 2014-15 school year.”² This is true. But, a freeze or change in the total amount of state shared revenue will not guarantee a corresponding change in general aid for all school districts. Rather, each district’s student membership and, to a lesser extent, property values will determine revenue allocation among districts.

By using DPI financial data for schools, this policy brief explains why the assertions propagated by some education reform critics comprise an incomplete picture and are based on a fundamental misunderstanding of how Wisconsin’s school funding mechanisms work.

How general aid works

The vast majority of public school funding comes from a mix of general aid and the local property tax levy, both of which are subject to revenue limits determined by the State of Wisconsin.^{3,4} General aid is a zero-sum game, meaning that an increase in aid for one school district will also result in a decline in aid for other districts (Ford, 2013). Less general aid does not mean less funding because districts are allowed to levy property taxes up to their revenue limit. State financial assistance to public school districts seeks: 1) to reduce a district’s reliance on property taxes for

¹ http://www.thewheelerreport.com/wheeler_docs/files/0701pope.pdf

² http://dpi.wi.gov/sites/default/files/news-release/dpinr2015_68.pdf

³ Districts also receive funding from federal sources. Federal aid comprises 7.8 percent of all aid while local and state shares make up roughly equal portions of the remainder (Wisconsin Legislative Fiscal Bureau, 2015a).

⁴ General aid has three components: equalization aid, integration aid, and special adjustment aid. Equalization aid comprises the lion’s share (98%) of general aid that flows to school districts (LFB, 2015).

funding its students' education, and 2) to allow all districts to provide a basic level of education regardless of any district's wealth (LFB, 2015).

The level of general aid that a school district receives is determined by a highly complex formula⁵ that is affected by a district's property tax base and its enrollment or "student membership."⁶ If a school district's property valuation declines relative to other districts, it will receive more general aid, other factors remaining the same, and vice versa.⁷ If a school district experiences a decline in membership relative to other districts, it will receive less general aid, other factors held constant, and vice versa. Of the 234 school districts that will receive less general aid than last year, 80 percent of these districts will also have lower student memberships.⁸

General aid is also determined by a revenue limit (a statutory limit on the amount of revenue that a local government can raise by levying taxes) and "shared costs" (the amount of school expenditures that are eligible for equalization aid). Changes in membership affect both of these components. In the simplest terms, these two components will work against each other when students move in or out of a school district. Therefore, it is difficult to predict *exactly* how the movement of students will impact equalization aid for a given school district.

Analysis

The DPI memo reports that 55% of school districts will experience a decrease in general aid from what they received in 2014-15. The remaining 45% of school districts will receive more general aid in the upcoming academic year.⁹ But this is not unusual.

- I. *It is common for the funding formula to cause some school districts to receive more general aid than the prior year, while others receive less.*

We examine the year-over-year change in general aid for each school district since 2012 by analyzing DPI data from the October 15 Certified General Aid figures for each district.¹⁰ We begin by computing the number of districts that experienced an increase or a decrease in general aid for each year (Figure 1).

Figure 1: Year-over-year change in general aid for Wisconsin public school districts, 2012-2016

⁵ This formula is sometimes called the "general school aid formula" and "equalization aid formula." For a detailed explanation of general aid, please refer to Wisconsin Legislative Fiscal Bureau (2015) and Ford (2013). Both papers provide examples of how general aid is computed.

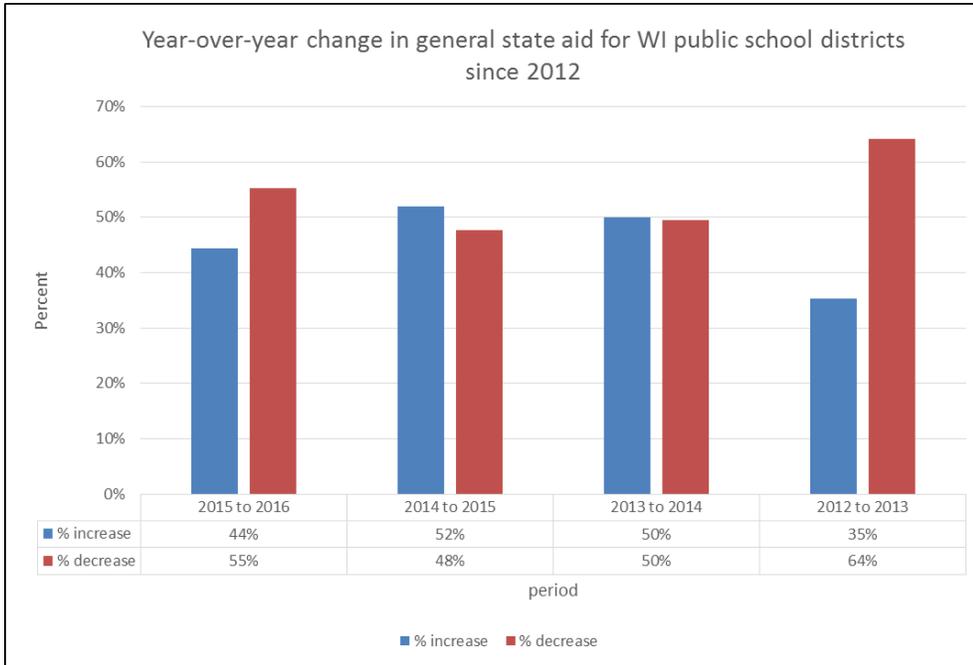
⁶ Membership is the number of students in a district allowed by law to be counted for determining the level of student aid and can differ from actual enrollment. The definition of membership for Milwaukee Public Schools was changed in 2009 and is determined by a three-year rolling average (LFB, 2015).

⁷ This is because the state "guarantees" a tax base per member to districts. If a district's property tax base valuation is below this guaranteed base, then the state makes up the difference in the form of equalization aid (not to exceed its revenue limit). This calculation is based on a highly complex interaction of all districts throughout the State so that the impact of any increase or reduction in tax base will vary from year to year, although it should not change dramatically.

⁸ This proportion is similar to the 2013-14/2014-15 period, where 82% of districts that experienced a decline in general aid also had declining memberships. It is possible for a district to receive more aid while losing students and vice versa. For example, the additional aid that would, *ceteris paribus*, be caused by an increase in membership might be overcome by an increase in property values.

⁹ Two school districts will receive the same amount of general aid in 2015-16.

¹⁰ We employ publicly available data from the Wisconsin DPI, http://sfs.dpi.wi.gov/sfs_aid_worksheets



Source: calculations based on DPI financial data, http://sfs.dpi.wi.gov/sfs_aid_worksheets

The shares reported in the DPI memo for 2015-16 are not much different from the previous three years, even though the total amount of general aid actually *increased* during 2012-2014 (Table 1). From 2012 to 2013, over one-third of school districts received an increase in aid while the other two-thirds had their general aid reduced. From 2013 to 2014, the share of districts that received an increase in general aid jumped to 50%. These shares changed slightly between 2014 and 2015, with 52% of school districts having had their aid increased and 48% of districts having aid reduced.

Table 1: General aid statewide, 2012-2016

Year	total general aid	\$ change from prior year	% change from prior year
2016	4,346,009,213	(191,326)	-0.004%
2015	4,346,200,539	85,486,102	2.006%
2014	4,260,714,437	87,507,654	2.097%
2013	4,173,206,783	21,906,885	0.528%
2012	4,151,299,898		

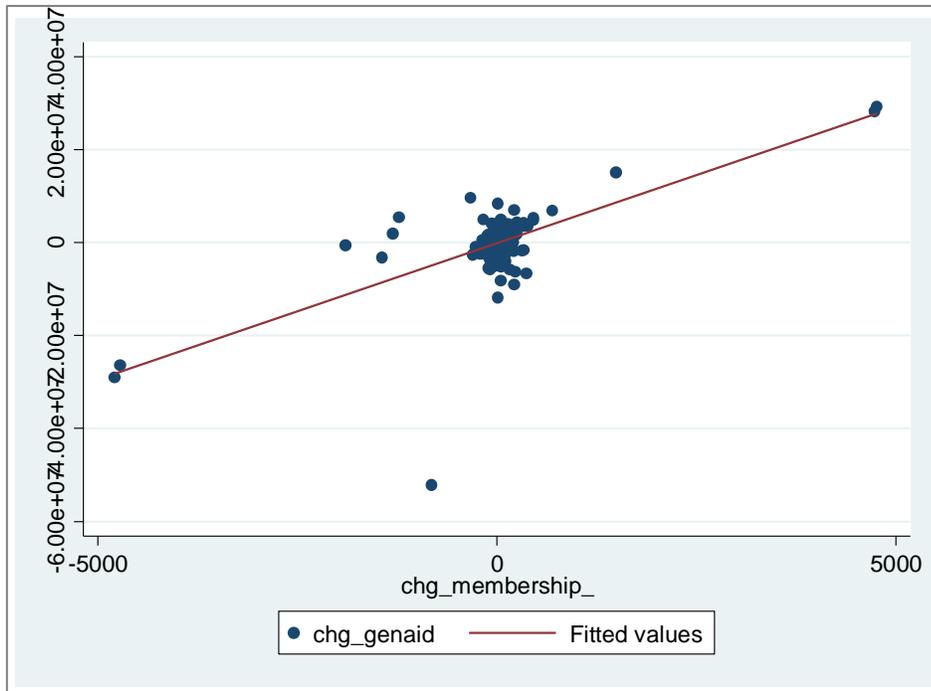
Notes: figures based on October 15 Certified General Aid data from the Wisconsin Department of Public Instruction, obtained from http://sfs.dpi.wi.gov/sfs_aid_worksheets#2015-2016; data for 2016 are based on July 1 general aid estimates (the most recent estimates reported by the DPI)

Moreover, the districts experiencing increases and decreases are different from year to year. Of the 424 school districts in Wisconsin, 41 districts experienced an increase every year since 2012 while 77 experienced a decrease in every year since 2012. The remaining 306 school districts experienced fluctuations in both directions over the same period.

II. *General aid for school districts fluctuates year to year primarily due to changes in membership.*

To further explore why general aid changes, we construct a scatterplot to examine the relationship between changes in general aid and changes in membership. It indicates that a strong positive correlation exists between changes in general aid and changes in membership.

Figure 2: Correlation between changes in general aid (vertical axis) and changes in membership (horizontal axis) for all Wisconsin school districts, 2012-2016



Notes: Slope = \$5,861; t-statistic = 45.17 (indicating statistical significant at a very high level of confidence).

Figure 2 plots the year-over-year change in general aid (vertical axis) for each Wisconsin school district and the year-over-year change in membership (horizontal axis). We use DPI data from 2011-12 to 2015-16. Because student membership plays a prominent role in how the general aid formulas work, we should observe a positive relationship. That is, we should observe districts grouped in a pattern that lies along a diagonal from the bottom-left to the upper-right.

As Figure 2 indicates, the fitted line is indicative of a positive relationship. The slope implies that, on average, a decrease in membership by one student will result in \$5,861 less general aid for the district.¹¹ To be clear, this does not mean that the departure of one student will cause exactly a \$5,861 reduction in aid for the originating district. Other factors could have an impact on marginal changes. But membership is certainly an important contributing factor.

¹¹ We also estimated a fixed effects model that regresses general aid on membership and property value per member. A discussion and output for these results are included in the appendix.



Discussion

According to a recent memo by Rep. Sody Pope, “School aid being held at zero will cause over half of our school districts to lose funding, and that is plainly unacceptable... Public education funding in our state is on a dangerous trend. Whether it’s cutting resources to public schools... leeching money off public education for unaccountable voucher programs, or any of the other ludicrous proposals for public education in this budget...”¹² Unfortunately, statements such as these deflect attention from policy discussions that Wisconsin citizens should be having. Rep. Pope’s statement reflects common but fundamental misunderstandings about how school funding works.

First, the number and identity of districts that experience increases is determined mostly by membership, not the size of the whole pie.

Second, K-12 education (in inflation-adjusted terms) has increased for many decades. Current expenditures per student throughout the United States, in inflation-adjusted dollars, has risen by nearly 150% since 1970 (NCES, 2012). While this is a very long time for a policy experiment to play out, the results have been much less dramatic – student outcomes have remained flat. The preponderance of scholarly evidence on the relationship between spending and student outcomes has failed to establish a consistent relationship between the two (Hanushek, 2003).

Wisconsin is no exception, where public spending has increased for decades, though it has tapered off recently. [A recent analysis by WILL](#) could not find a significant link between changes in spending and corresponding changes in student outcomes that included ACT scores, college readiness, graduation, and WKCE proficiency (Lueken, Esenberg, & Szafir, 2015). It is unlikely that the mere act of increasing spending will have any material effect on what truly matters. Rather, education policy in Wisconsin would be better served by placing more focus on *how* dollars are spent on education.

References

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¹² http://www.thewheelerreport.com/wheeler_docs/files/0701pope.pdf



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Appendix

We estimated a fixed effects model that regresses general aid on membership and property value per member. This allows us to examine, within each school district, how student membership (`membership_`) and property valuation (`propvaluepermbr_`) relate to general aid (`genaid_`). Data cover 2012-2015. The coefficients are both significant at the 99% confidence level and have expected signs (positive on membership and negative on property value). Results from the model imply that an increase in membership by one student will increase general aid, on average, by \$5440, holding property values constant; and a \$1,000 increase in property value per member is associated with, on average, an \$822 decline in general aid, holding membership constant.

```

Fixed-effects (within) regression           Number of obs   =   1696
Group variable: districtcode              Number of groups =   424

R-sq:  within = 0.5556                    Obs per group:  min =    4
        between = 0.9428                  avg   =   4.0
        overall = 0.9422                  max   =    4

                                           F(2,423)       =   30.17
corr(u_i, Xb) = 0.2948                    Prob > F        =   0.0000
    
```

(Std. Err. adjusted for 424 clusters in districtcode)

<code>genaid_</code>	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
<code>membership_</code>	5439.655	863.9697	6.30	0.000	3741.447	7137.864
<code>propvaluepermbr_</code>	-.822189	.3373256	-2.44	0.015	-1.485232	-.1591458
<code>_cons</code>	-333938	1846878	-0.18	0.857	-3964140	3296264
<code>sigma_u</code>	7389875.8					
<code>sigma_e</code>	920738.26					
<code>rho</code>	.9847135	(fraction of variance due to <code>u_i</code>)				