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The Productivity Trend for K-12 Public Schools is Even Worse

Benjamin Scafidi
Kennesaw State University

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Richard Vedder has had a long and distinguished career as an economic historian who has analyzed a wide variety of public policy issues. Since the mid-1960s, Dr. Vedder has made important contributions to our understanding of labor mobility within and between nations, slavery, unemployment, state-level economic growth, and labor market policy. His analyses have been timely, interesting, and relevant for national and state public policy discussions. Over the past decade, Dr. Vedder has become famous—or infamous—in academic, policy, and media circles for his work on productivity in higher education. What is less well known is that Dr. Vedder got his start in the economics of education with his analysis of changes over time in productivity in American public K-12 education.

This paper reminds readers of Dr. Vedder's contribution to our knowledge of the productivity problem in American public K-12 education, updates his findings with more recent data, shows that the productivity problem in K-12 public education is worse than Dr. Vedder suggests is the case for higher education, and considers a solution Dr. Vedder proposed to ameliorate the K-12 productivity problem—parental choice combined with converting individual public schools into autonomous and employee-owned enterprises.

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Richard Vedder, From Economic Historian to Economics of Education Researcher

For about the first four decades of his career, Richard Vedder was well known among economists for his policy-relevant research on a wide variety of economic history topics—collectively, his economic history papers were cited hundreds of times. However, for the past decade, Dr. Vedder has become very well known for his research on higher education productivity. If one thinks of productivity as outputs divided by inputs, Dr. Vedder has been concerned about both sides of the higher education productivity fraction line—concerned about higher costs and concerned about stagnant or perhaps declining outputs. His 2004 book Going Broke by Degree: Why College Costs So Much created a national stir and moved policy discussions towards questions of how to increase productivity in higher education. The Center for College Affordability & Productivity, which Dr. Vedder founded and directs, has produced a voluminous amount of research on productivity issues in higher education since its creation in 2006.

for the Center for the Study of American Business at Washington University, was entitled "School Daze: Productivity Decline and Lackluster Performance in U.S. Education".

Since 1837, when Horace Mann became secretary of the Massachusetts State Board of Education, there have been nonstop and widespread calls for more funding and staffing for American public schools. To state that these calls have been successful would be an understatement. Vedder (1996) showed there have been tremendous increases in public school staffing from 1950 to 1993. Using data from the National Center for Education Statistics, he found that in 1950 there were just over five full-time equivalent (FTE) public school employees per 100 students. By 1993, there were more than 11 FTE school employees per 100 students.

What was the composition of the more than doubling of public school staffing over these two generations? Dr. Vedder showed that this staffing surge was disproportionately due to increases in employment of those who were not lead teachers. He wrote "While the number of administrators per pupil rose about 50 percent, the big increase was in support staff and in quasi-instructional staff (e.g. teacher aides, guidance counselors)" (Vedder, 1996: pgs.4-5).

Using student test results from the National Assessment of Educational Progress and the Scholastic Aptitude Test, Vedder (1996) shows that the output of K-12 public schools—average student performance on standardized exams—either decreased very slightly (1971 to 1992) or increased by about 2 percent (1978 to 1992) during the time period under study. However, this stagnant or slightly higher output occurred at the same time as a rather dramatic increase in real public school spending and staffing.

The rest of this paper updates and provides more context for Vedder (1996), compares the productivity problems in K-12 education to Dr. Vedder's findings for higher education, and uses Vedder (2000) and Vedder and Hall (2000) to consider a new direction for the delivery of K-12 education its benefits for teachers and other public school employees.

In the mid-1990s, Dr. Vedder was not the only one warning about too much central administration in K-12 public schools. The following quote on bureaucracy in American public education is notable because it comes from well-known advocates for public schools—David Berliner and Bruce Biddle—whose book, The Manufactured Crisis: Myths, Fraud, and the Attack —

From the school year in which NCLB was passed (FY 2002) until FY 2009, the number of students rose 3 percent while the number of public school teachers and administrators increased at about the same rate, 7 percent. The primary difference between the NCLB era and the prior time period is that the trend toward increasing non-teaching staff at a greater rate than teachers was halted; in the NCLB era, teachers and non-teaching staff both increased at the same rate, which was more than twice as fast as the increase in students. In both the NCLB and the pre-NCLB eras under study, overall staffing in public education increased about 2.3 times faster than student growth.

Comparing Staffing in U.S. Public Schools to Publicly Funded Schools in the OECD

The Organisation for Economic Co-operation and Development (OECD) collects information on a wide variety of economic and social statistics on member nations, including staffing in publicly funded schools in the U.S. and the other 33 OECD nations. According to the OECD, publicly funded schools in OECD n001 Tw 0.39 0 Td5.9.97 0 14(n)10(tw)10 d4(h)-4(e1(vog S)-2(t)-4(e)-1
v)10 t ns-4(e)2(re)-1-ndodreg8(D(n)]TJ0 Tc 0 5.42.78 0 (.( )J.25.19 0 Td( )J-0(n)1Tc 0.003 w 10.23 0 TdU(pe.(peS.(pe [p)-4(p))6
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In 2009, a sample of K-12 students from each of the 34 OECD nations, and 31 other nations and provinces, were given international exams called the Programme for International Student Assessment (PISA). The U.S. Department of Education's summary of American students' achievement in math relative to other countries on the PISA exam is as follows:

> "Among the 33 other OECD countries, 17 countries had higher average scores than the United States, 5 had lower average scores, and 11 had average scores not measurably different from the U.S. average. Among the 64 other OECD countries, non-OECD countries, and other education systems, 23 had higher average scores than the United States, 29 had lower average scores, and 12 had average scores not measurably different from the U.S. average score." (U.S. Department of Education, 2011)

In our globalized world, low or mediocre student achievement will harm Americans in the labor market. In particular, many studies have shown achievement in mathematics to be an important predictor of future labor market productivity and earnings (see, for example, Johnson and Neal (1998)). Although mathematics achievement in the U.S. is not at the top in international comparisons, America's education spending per student is. Only two out of 31 OECD countries spend more per student on elementary and secondary public school students than the U.S. (U.S. Department of Education, 2010). Further, higher scores on those international exams seem to be assothe

The National Assessment of Educational Progress (NAEP) is a series of exams on various

Are American Students Getting Worse Over Time?

Perhaps all the extra public school staff were necessary because American students have become more disadvantaged over recent decades. Many believe children enrolled in schools today are “harder to teach” than children a generation ago; Berliner and Biddle (1995) may be the most prominent and oft-cited proponents of that view.

Educational Progress scores by per-pupil spending, adjusted by the Consumer Price Index.... If one adjusts for the family background of student test-takers, the estimated decline in productivity grows slightly larger, to 68 (percent) or 69 percent. (The 68 percent figure is based on using coefficients from 1998-99 and the 69 percent figure is

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considerable. Accordingly, state governments and local public school boards should have been more concerned with improving teacher effectiveness than lowering class sizes.

Analogously, hiring more non-teaching personnel likely lowers the average quality of that workforce as well. Another concern with hiring more non-teaching staff is the possibility it increases bureaucracy and reduces the amount of time and energy teachers can devote to their students. Berliner and Biddle (1995) called excessive "bureaucratization" one of the "real problems of American education"—and their information on bureaucracy comes before the post-1992 time period under study here. Thus, there has been a rather dramatic increase in bureaucracy even since public school advocates Berliner and Biddle claimed that excessive bureaucracy was a problem.

"I used to be up late preparing creative lessons that I loved. Now I'm up late getting my data in," a Fairfax, Virginia teacher told the Washington Post in 2011. The Postreporter continued, "

not appeared to boost student achievement.[8] Regardless of the reasons, public schools have increased staffing dramatically, especially non-teaching

"The Staffing Surge" does not imply classroom expenditures are better or worse than other expenditures; it merely points out there have been dramatic increases in the employment of teachers and even more dramatic increases in the employment of administrators and other non-teaching personnel in public schools over the past few decades. And, those significant increases in staffing have not been accompanied by increases in measurable outcomes for students.[11]

Comparing Productivity Changes in American Higher Education and K-12 Education

In his 2004 book Going Broke by Degree: Why College Costs Too Much, Dr. Vedder shows that real current spending per student in U.S. higher education increased from $5,008 per student in 1929-30 to $18,396 in 1999-00—a real increase of over 267 percent (Vedder, 2004: Table 3-1). Current spending excludes capital expenditures, and his data included public and private colleges and universities.

From 1976-77 to 1999-00, Dr. Vedder finds the increase in university staffing per hundred students increased from 18.52 to 20.83, an increase of 12.5 percent. During these

12 education are compared in figure 8. As shown in figure 8, the increase in real public school spending per student was more than three times the increase that occurred in higher education over this 70-year period.

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arrangement for a significant increase in their wealth plus a greater say in how the school will operate." (Vedder, 2000: pg. 30)

Vedder and Hall (2000) find there is another benefit to teachers from governments allowing more competition and choice into K-12 education. They point out that, theoretically, more competition among schools for students would also lead to more competition among schools for teachers. More competition for teachers would lead to higher pay and better benefits and working conditions. Using 1996 data on Ohio public school districts, Vedder and Hall find that teachers in public schools would experience a $1,084 salary increase if the share of the students in their school districts increased from zero to 20 percent. This salary increase was equal to about 3 percent of the average district teacher salary in Ohio at that time.

Surely, some education reformers are skeptical that public school employees should be given ownership and control over tens of thousands of public schools worth billions of dollars. But skeptics should consider this significant transfer of wealth in light of the other piece of the Vedder-ESOP plan—universal school choice. Employee-owned schools would face a market test—students and the funds dedicated to their education would flow to the schools their parents deem best. If the employee-owned schools could not attract enough students, then the employee-owners would face a stark reality. Their choices would be to (a) improve the quality of their academic and social offerings, (b) hcadets,d1( )-10(s-2(od4(ld)6(frth)-4(at)5(e)-1 a)10(( )-ag())4

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policymakers, parents, and other citizens should debate and some enterprising states or school districts should pursue.[12]

Figure 1

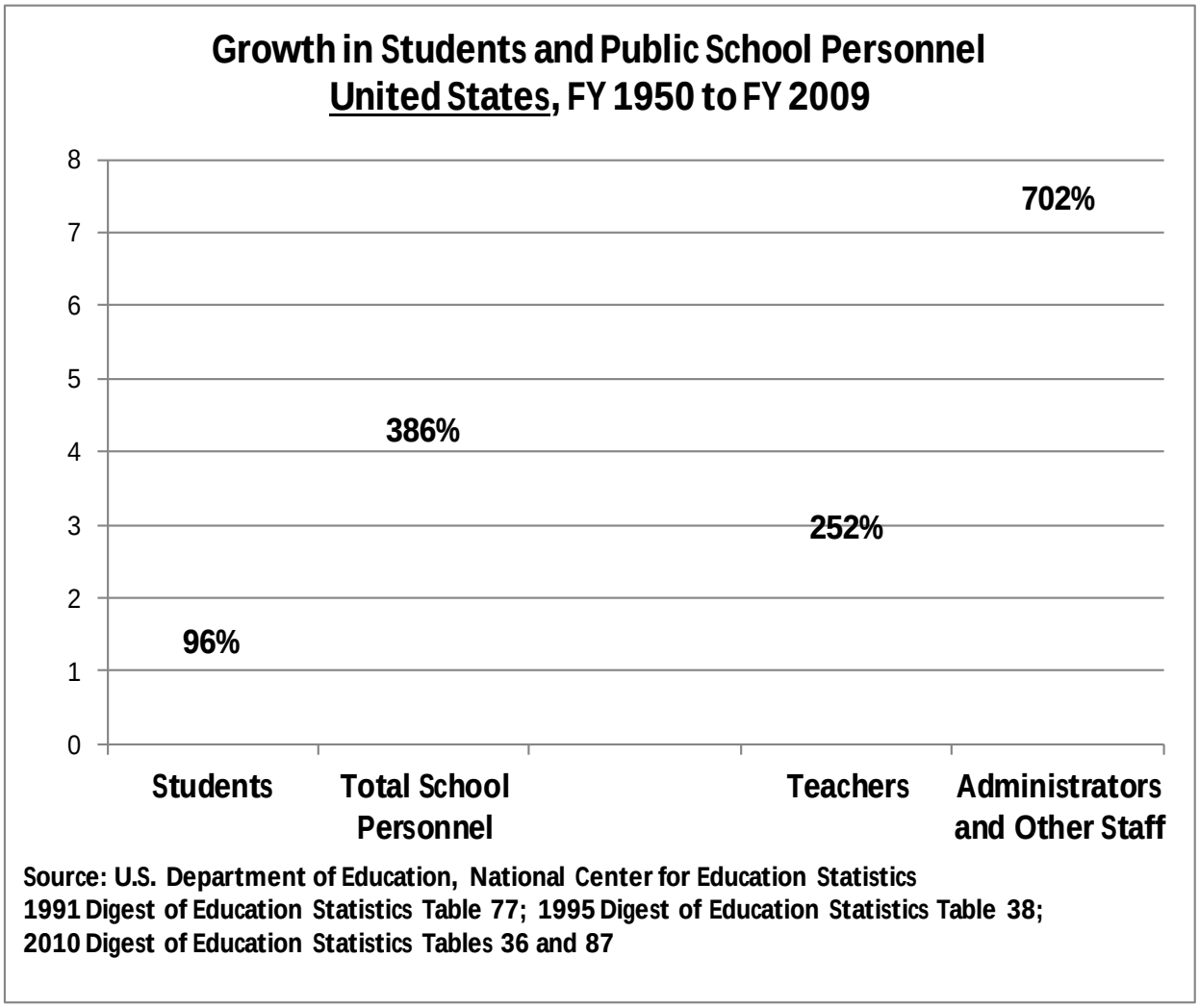
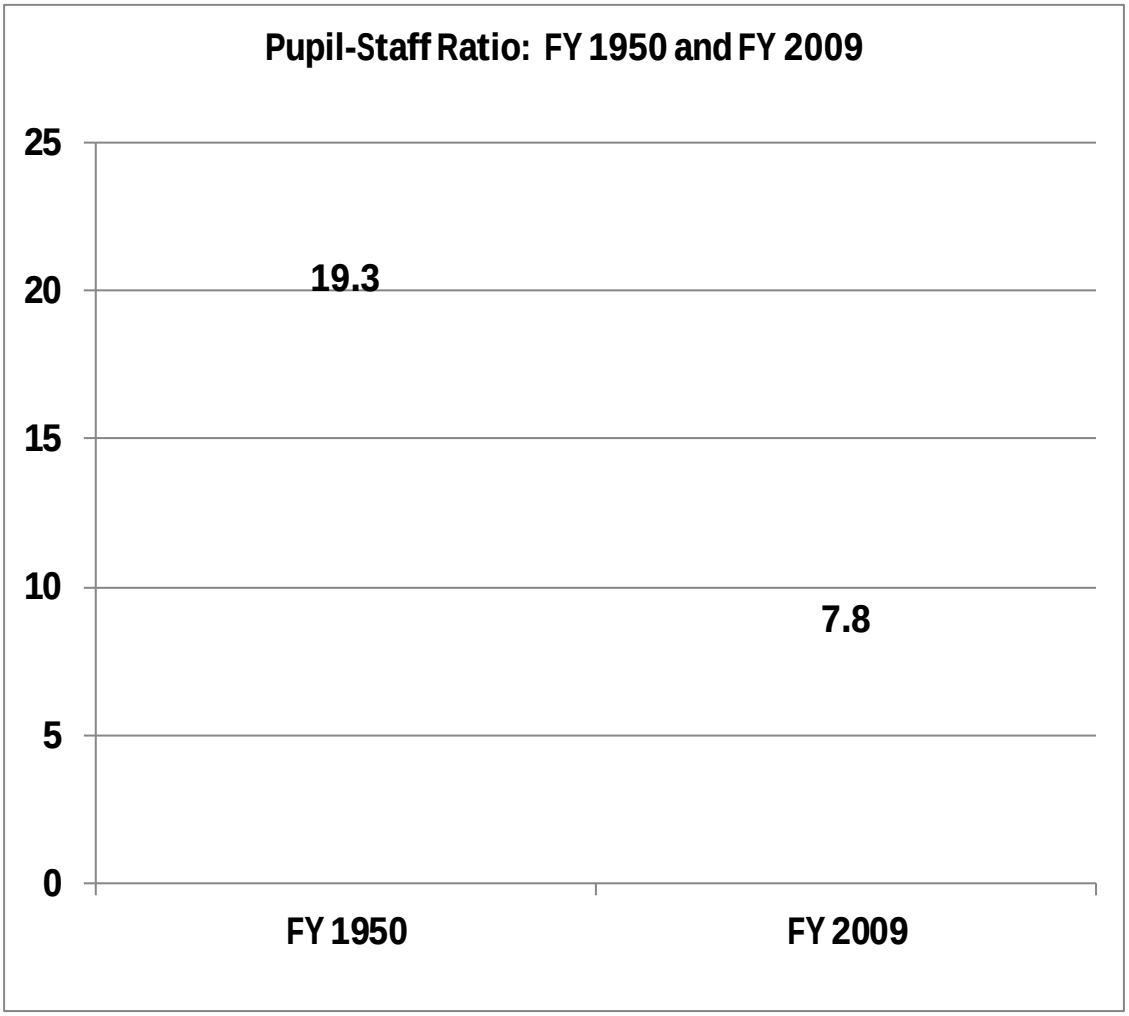

Growth in Students and Public School Personnel
United States, FY 1950 to FY 2009
8
7
6
5
4
3
2
1
0
96%
386%
252%
702%
Students
Total School Personnel
Teachers
Administrators and Other Staff
Source: U.S. Department of Education, National Center for Education Statistics
1991 Digest of Education Statistics Table 77; 1995 Digest of Education Statistics Table 38;
2010 Digest of Education Statistics Tables 36 and 87

Figure 2



Source: U.S. Department of Education, National Center for Education Statistics, 1990 Digest of Education Statistics, Table 76; 2011 Digest of Education Statistics, Table 89.

Figure 4

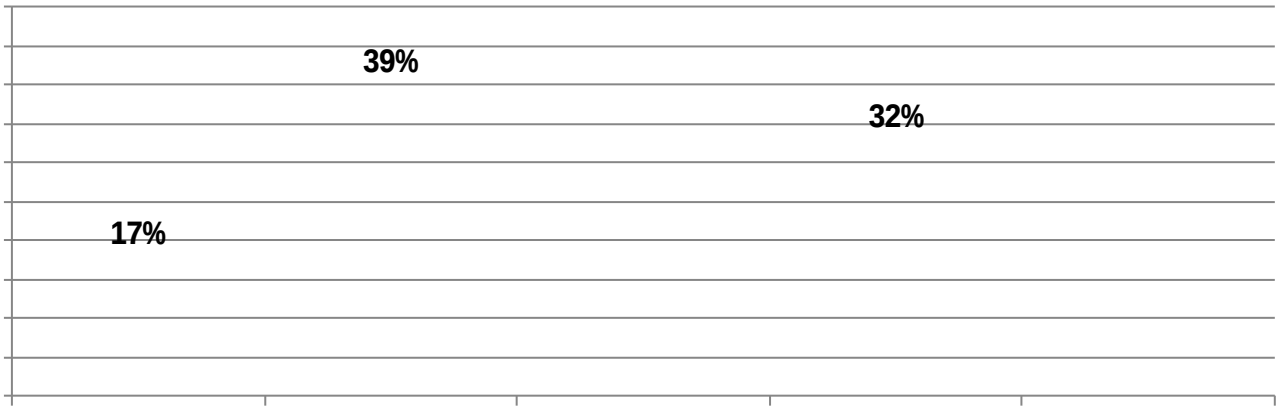
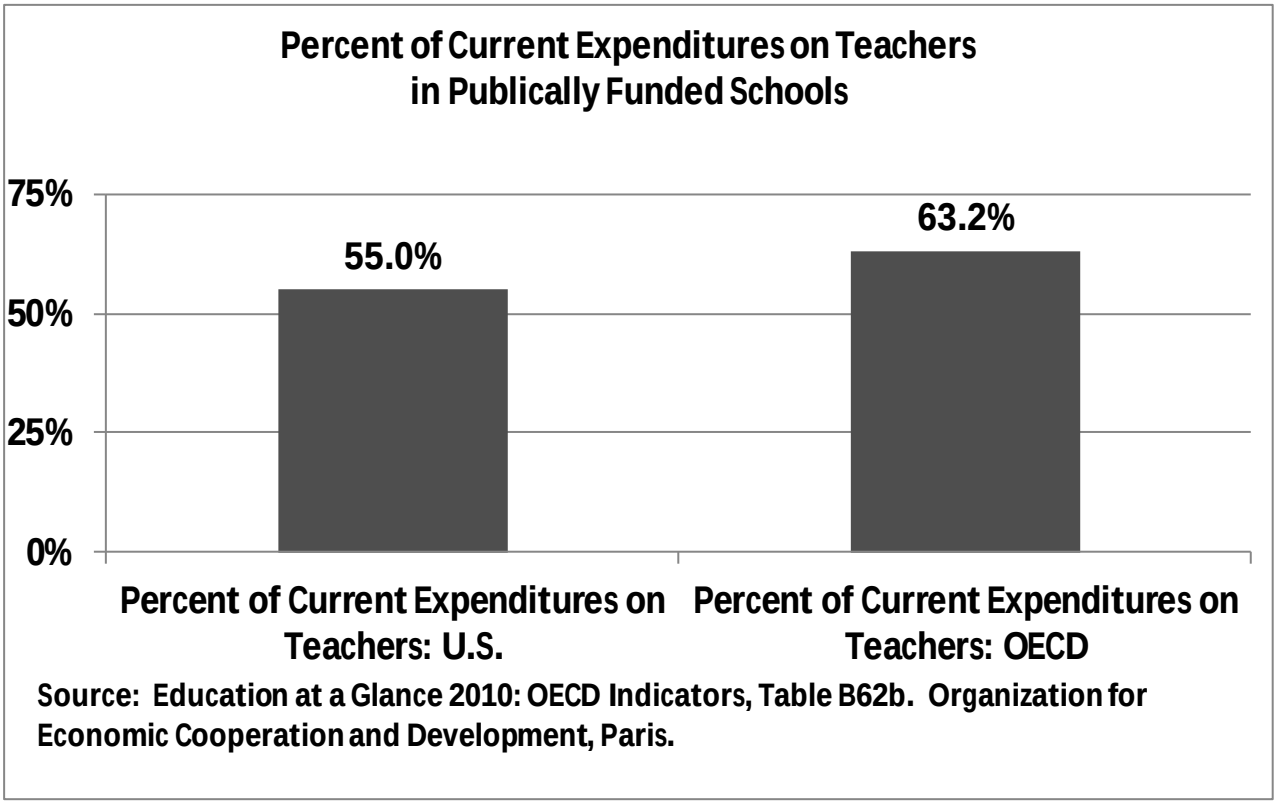
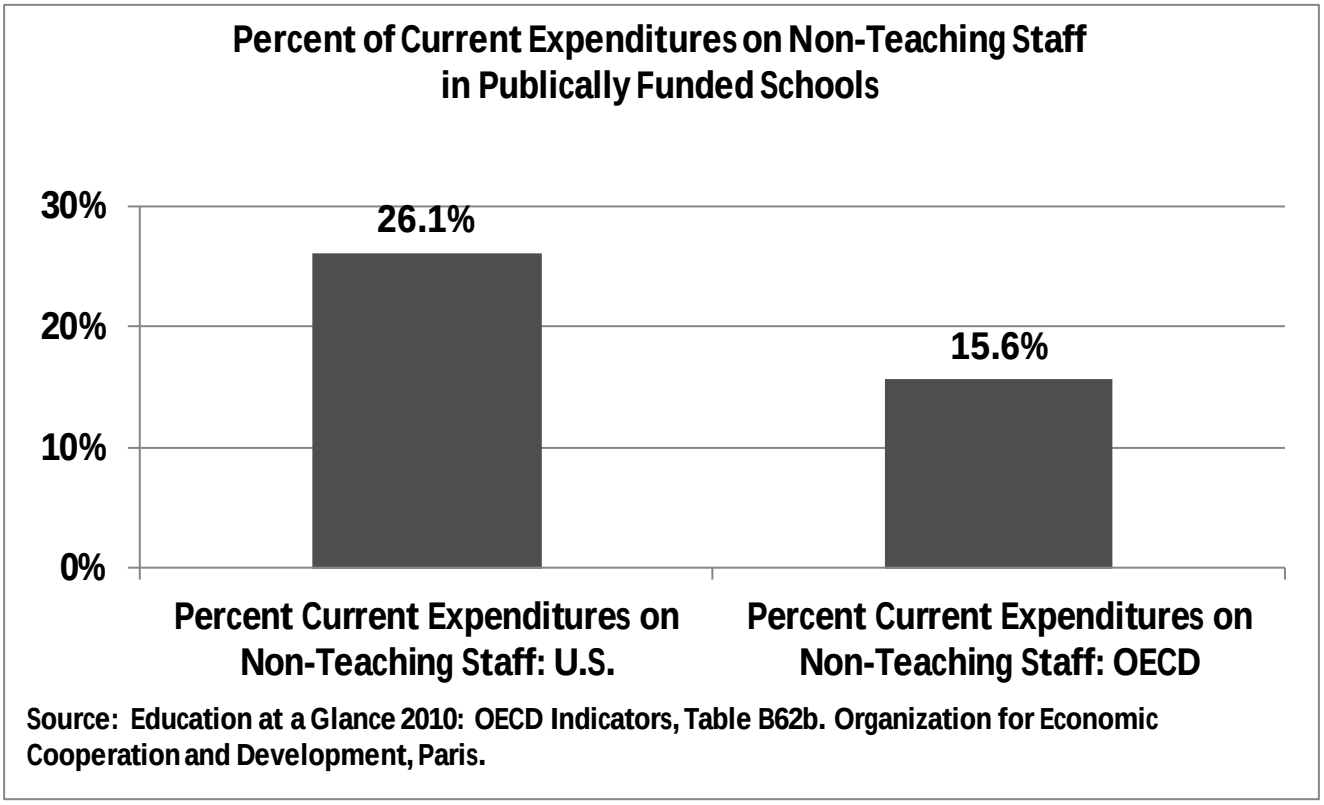


Figure 5



Source: Education at a Glance 2010: OECD Indicators, Table B62b. Organization for Economic Cooperation and Development, Paris.

Figure 6



Source: Education at a Glance 2010: OECD Indicators, Table B62b. Organization for Economic Cooperation and Development, Paris.

Figure 8

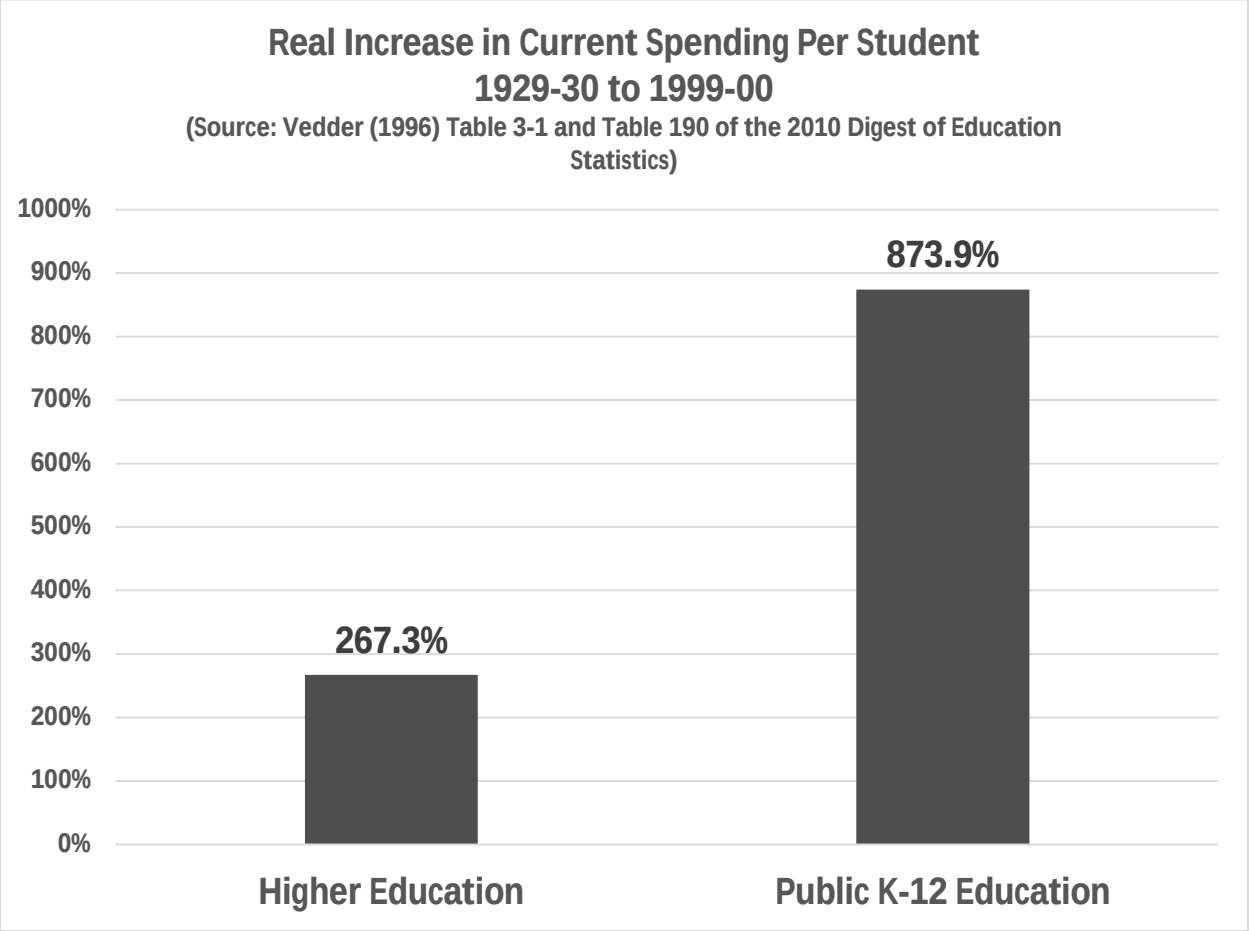

Real Increase in Current Spending Per Student
1929-30 to 1999-00
(Source: Vedder (1996) Table 3-1 and Table 190 of the 2010 Digest of Education Statistics)
1000%
900%
800%
700%
600%
500%
400%
300%
200%
100%
0%
267.3%
873.9%
Higher Education
Public K-12 Education

Figure 9

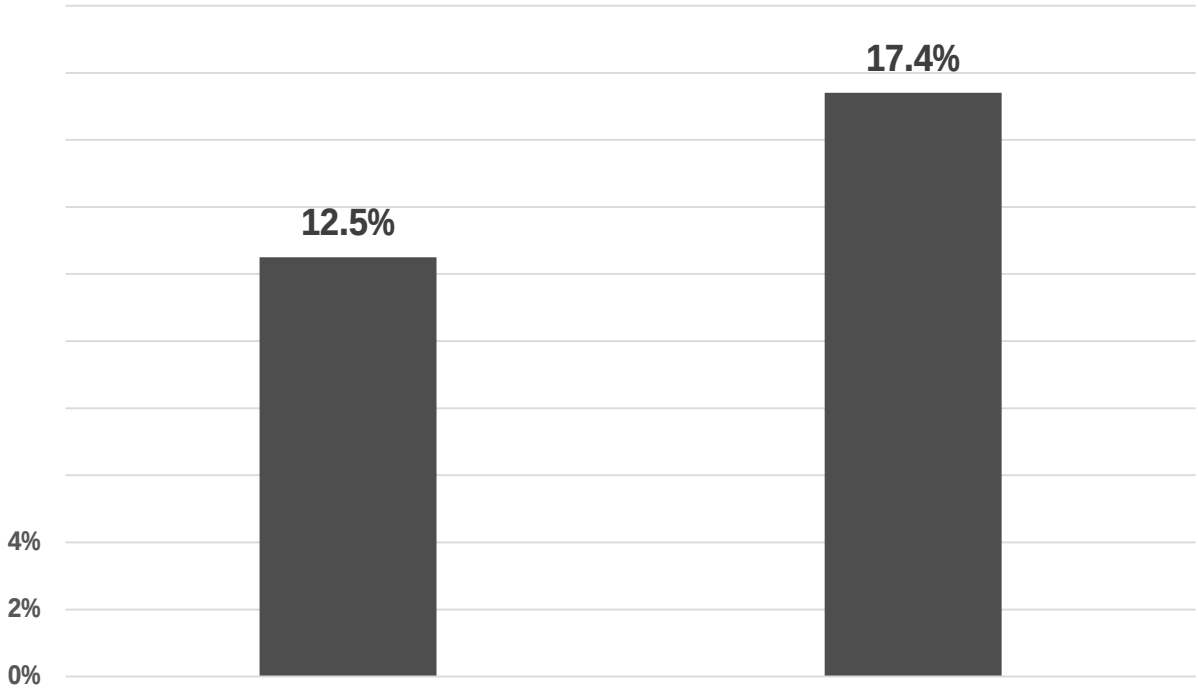
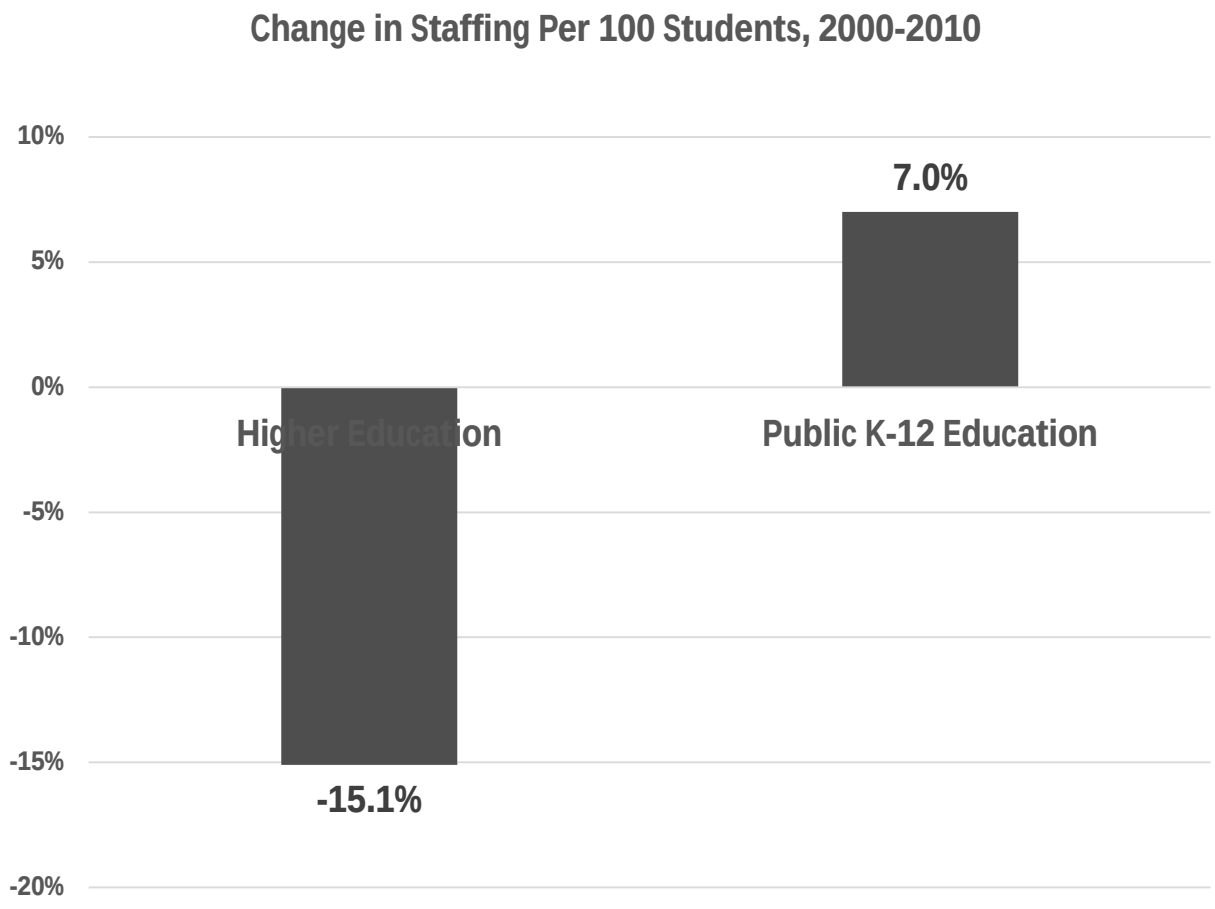


Figure 10


Change in Staffing Per 100 Students, 2000-2010
10%
5%
0%
-5%
-10%
-15%
-20%
7.0%
Higher Education
Public K-12 Education
-15.1%

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