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District Costs for Teacher Health Insurance: An Examination of the Data from the BLS and Wisconsin

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Rising health insurance costs have been a matter of national concern for some time now and are increasingly the subject of vigorous public policy debate. This paper examines data from the National Compensation Survey (NCS) of the Bureau of Labor Statistics (BLS) to address some of the basic questions around health insurance costs for teachers.

ABSTRACT

Rising health insurance costs have been a source of fiscal distress for school districts. In this paper, I closely examine data from the National Compensation Survey (NCS) of the Bureau of Labor Statistics (BLS) to address a few basic questions:

- Are district costs for teachers' health insurance higher, on average, than employer costs for private-sector professionals?
- If so, how much of this represents greater access to and participation in employer plans?
- How does the difference in employer cost break out between that of the policies' total premiums and the employer's share of those premiums?
- What is the impact of collective bargaining on total premiums, employer cost and employee contributions?

To address the first question, I convert BLS' published estimates of employers' hourly cost to annual cost, since a shorter work year for teachers inflates the hourly cost of year-round benefits. Using unpublished BLS data on annual hours worked, I find average annual employer insurance costs for teachers to be 25 to 29 percent higher than for private-sector professionals. Adjusting for participation rates, the cost is 15 to18 percent higher. Direct estimates of employer medical premiums present a mixed picture: higher employer premiums for teachers with single coverage, but not family coverage. In both cases, total medical premiums are higher for teachers than for private-sector professionals, but for family coverage the teachers cover the extra premiums themselves. Employees incur out-of-pocket costs, in addition to premiums. One reason teachers' insurance plans are more expensive is that plan design features (such as generally lower deductibles) reduce their out-of-pocket costs.

The BLS data show that unionization is associated with higher total premiums, higher employer costs, and lower employee contributions in both the public and private sectors. This suggests that the high unionization rate among teachers plays a significant role in districts' higher average cost. Varying strength of teachers unions across states also helps explain the wide variation in district costs. In some nonunion states, teacher health insurance benefits are not particularly generous, due to high out-of-pocket costs (e.g. high deductibles) or high teacher shares of premiums (as in Arkansas). In other states, with strong unions, district insurance costs can be very expensive. It is in those states that the opportunities for district cost reduction are most promising. I examine newly available data from Wisconsin to quantify the impact of that state's recent change in collective bargaining law, Act 10. I find a sharp reduction in district costs from lower-cost policies and higher teacher contributions: 13 to 19 percent in the first year after Act 10, and 18 to 23 percent after the second year, relative to projected district costs.

INTRODUCTION

Rising health insurance costs[1] have been a matter of national concern for some time now and are increasingly the subject of vigorous public policy debate. The impact on K-12 education has been a harbinger of the broader national debate, as school budgets have been hit hard by rising health costs for many years, and the recent fiscal strain has brought this into greater focus. The high-profile battle over Wisconsin's restriction of collective bargaining on public-sector benefits (Act 10), as well as lower-profile battles in Ohio and Massachusetts, was to a great extent about health insurance costs for teachers.[2]

Data from the Bureau of Labor Statistics (BLS) show that the employer cost for teachers' insurance has risen at an annual rate of 6.1 percent from March 2004 to March 2013, while the CPI grew at 2.4 percent.[3] As a result of this rapid growth, the fringe benefit rate for teachers' insurance rose from 11.4 percent of earnings in March 2004 to 15.8 percent in March 2013.[4]

I estimate that teachers' insurance costs currently represent $550 per pupil. This national average covers a wide range, from states with relatively low employer costs to states with high ones. Among the latter, I estimate that Wisconsin districts averaged between $810 and $977 per pupil in 2011, prior to the reduction in employer costs that followed that state's change in collective bargaining law.[5] These figures do not include insurance costs for other school employees or retiree health care, which tend to move in tandem with teachers' insurance. Neither of these costs is considered in this paper, but they can be quite substantial. For Milwaukee Public Schools, employee health insurance (teachers and non-teachers) cost the district $2,610 per pupil in 2011. Adding in retiree health insurance brought the total to $3,441.[6] While these figures are not representative of the nation as a whole, neither is Milwaukee an isolated example: many districts in various states are struggling with high health care costs.

1 Properly speaking, the subject of this paper is "expenditures," not "costs," since the economic meaning of the term "cost" is the minimum expenditure required for any given output of a specified quality, a concept that embeds the notion of efficiency. The data examined in this paper cover "expenditures," regardless of their efficiency. I bow to common usage of the term "cost" (e.g. the BLS ECEC series refers to Employer Cost for Employee Compensation), since the term "expenditure" becomes cumbersome upon repetition.

2 See Robert M. Costrell, "Oh To Be a Teacher in Wisconsin," Wall Street Journal, February 25, 2011, and "Collective Bargaining Weakens Cities," Wall Street Journal, November 23, 2011.

3 The CPI for medical care grew at 3.6 percent, the CPI for medical services grew at 4.0 percent, and the GDP deflator for health care services grew at 2.6 percent. These indexes attempt, to varying degrees, to adjust the raw figures for improvement in quality, unlike the employer cost figures cited in the text.

4 These data are derived from the BLS ECEC series. The numerator, "insurance," is discussed below. The denominator is the sum of "Wages and Salaries," "Paid Leave," and "Supplemental Pay," i.e. the dollar payments recorded in a W-2 statement.

5 This estimated range for Wisconsin's average district cost, scales up the national estimate, based on the ratios between Wisconsin and the U.S. for single and family coverage (estimated below), and its lower teacher-pupil ratio.

6 These figures are derived from MPS budget documents. Since 2011, MPS has been able to take measures under Act 10 to reduce current health care costs and to slow the future growth of retiree health care costs.

Plan of the Paper and Summary

In this paper, I closely examine data from the National Compensation Survey (NCS) of the BLS to compare district costs for teacher health insurance with employer costs for private-sector professionals. I specifically address a few basic questions:

- Are district costs for teachers' health insurance higher, on average, than employer costs for private-sector professionals?
- If so, how much of this represents greater access to and participation in employer plans?
- How does the difference in employer cost break out between the policies' total premiums and the employer's share?
- What is the impact of collective bargaining on total premiums, employer cost, and employee contributions?

To address the first question, I convert BLS' published estimates of employers' hourly cost to annual cost, since a shorter work year for teachers inflates the hourly cost of year-round benefits. Using unpublished BLS data on annual hours worked, I find average annual employer insurance costs for teachers to be 25 to 29 percent higher than for private-sector professionals. Adjusting for participation rates, the cost is 15 to 18 percent higher.

Direct estimates of employer medical premiums present a mixed picture: higher employer premiums for teachers with single coverage, but not family coverage. In both cases, total medical premiums are higher for teachers than for private-sector professionals. In addition, teachers contribute less than others for single coverage. For family coverage, teachers contribute more, thereby covering the higher plan cost themselves. Employees incur out-of-pocket costs, in addition to premiums. One reason teachers' insurance plans are more expensive is that plan design features (such as generally lower deductibles) reduce their out-of-pocket costs.

The BLS data show that unionization is associated with higher total premiums, higher employer costs, and lower employee contributions in both the public and private sectors. This suggests that the high unionization rate among teachers plays a significant role in districts' higher average cost. Varying strength of teachers unions across states also helps explain the wide variation in district costs. In some nonunion states, teacher health insurance benefits are not particularly generous, due to high out-of-pocket costs (e.g. high deductibles) or high teacher shares of premiums (as in Arkansas). In other states, with strong unions, district insurance costs can become very expensive. It is in those states that the opportunities for district cost reduction are most promising. I examine newly available data from Wisconsin to quantify the impact of that state's recent change in collective bargaining law. I find a sharp reduction in district costs, from lower-cost policies and higher teacher contributions, 13 to 19 percent, in the first year after Act 10, and 18 to 23 percent after the second year, relative to projected district costs.

EMPLOYER HEALTH CARE COSTS: TEACHERS VS. PRIVATE-SECTOR PROFESSIONALS

I begin with a basic, top-level question: how do employer health care costs for teachers compare with other relevant groups such as private-sector professionals? The answers to this question are harder to come by than one might expect. The most comprehensive national data published on employer costs, from the Bureau of Labor Statistics, provides estimates of hourly costs, which is not conceptually ideal, but with the help of unpublished data on annual hours worked, and some attention to detail (such as part-time vs. full-time weights), one can arrive at more useful estimates. The conclusion I reach is that annual employer health care costs for teachers are significantly higher – 25 to 29 percent – than those for private-sector professionals (controlling for the mix of part-time and full-time). In subsequent sections, I will drill down below this top level, to analyze the role of access and participation rates, employee/employer split of premiums, and unionization.

BLS National Compensation Survey: Employer Costs for Employee Compensation

The standard source of data on employee compensation is the BLS National Compensation Survey (NCS). Specifically, the NCS publishes quarterly estimates of the Employer Costs for Employee Compensation (ECEC), covering wages and benefits, presented on a "per hour worked" basis. The item of interest here – employer insurance cost – is published for 180 groups of employees, at various levels of aggregation, broken down by occupational groups, industries, ownership (private industry or state and local government), and other characteristics. One of these groups is "primary, secondary, and special education teachers" employed by state and local governments (henceforth, "K-12 teachers"), a breakout that has been reported since 2004, so their insurance cost can be compared with other reported occupational groups. In addition to the ECEC, NCS publishes other reports that provide valuable information, as discussed below, but the primary data source for this section is the ECEC.[7]

These data are the best available for basic comparisons of employer costs, but there are some issues to consider. One minor issue is the detail of benefit categories. The cost of "health insurance" (medical, dental, vision, and prescription drugs) is reported for broad occupational groups in the ECEC. For teachers, however, only the larger category of "insurance" is reported. This includes life and disability insurance. These other components are small, approximately 5 percent of the total "insurance" category on average, so there is no great loss of precision by comparing "insurance" costs in lieu of "health insurance."

More specifically, the non-health component of "insurance" for the occupational group "management, professional and related" is 3.7 percent among state and local government employees (including teachers) and 6.8 percent for the private sector. This suggests that my estimates of employer "insurance" cost for private-sector professionals as a ratio of that for teachers may overstate the true ratio for employer "health insurance" costs by approximately 3 percent. For example, my estimate below that annual "insurance" costs for private-sector workers in "professional and related" occupations are 80 percent of those for teachers may correspond to a ratio of 77 percent for "health insurance."

A more significant issue, which has occasioned considerable controversy in debates over teacher compensation, is that the ECEC data are presented in the form of hourly compensation. Since the BLS data for annual hours of teachers are much lower than for other full-time workers, comparisons of hourly compensation have been contentious. For basic salary, the argument is between those who claim that comparisons of annual pay understate teacher compensation (since teachers have summers off), and those who claim that comparisons of hourly pay overstate teacher compensation (by implicitly valuing summer vacation at the same hourly rate).

7 See the NCS homepage and specifically, the Employment Cost Trends page for the ECEC reports.

For the purpose of comparing employer insurance costs, the hourly data provide a striking result: the cost for public K-12 teachers is the highest of all 180 groups reported by the ECEC. However, unlike the controversy over the salary data, there might be greater agreement in this instance that the relevant measure is annual cost, rather than hourly cost. A teacher's insurance covers the full year, since it is impractical to obtain separate coverage for the summer.[8] Thus, comparisons of hourly insurance cost – the only ones published by the ECEC – are arguably misleading, since the annual insurance costs for teachers are spread over fewer hours.

The ECEC computes annual benefit costs, for the numerator of the hourly cost calculation, but does not publish those estimates, nor the "annual hours worked" that enter the denominator of the ECEC calculation.[9] Annual costs can, however, be estimated using unpublished data on annual hours worked.[10] The BLS has kindly provided me with a special tabulation of annual hours worked for selected occupational groups at my request. These tabulations estimate annual hours worked for K-12 teachers at 1,297 in March 2012[11] vs. 1,850 for private-sector full-time "professional and related" occupations, so the comparisons of annual benefit costs will be quite a bit less tilted toward teachers than those of hourly costs.

Before examining these estimates of annual costs, it is important to dispense with one non-issue, the relative accuracy of the "hours worked" estimates for teachers and other professionals. The debate over BLS hourly salary figures for teachers often turns on how many work hours are unrecorded for teachers (lesson preparation, grading, etc.) as compared to others. However, this is not relevant to my estimate of annual costs. If the "hours worked" figure is too low, then the hourly cost estimate will be too high, but the annual cost that is backed out will be accurate, since it is recovered by using the low estimate of hours worked.

The final issue to consider is that for some occupational groups the data pool part-time and full-time employees. K-12 teachers comprise one such group, but in fact 97 percent of this group is full-time, according to an unpublished BLS tabulation. Thus, my estimate of the annual cost for K-12 teachers is close to the full-time cost, and can be usefully compared with full-time private-sector professionals (for whom this breakout is provided in the ECEC data). Alternatively, I offer comparisons with a composite of private-sector professionals constructed to mimic the 97 percent full-time composition of the K-12 teachers group.

8 For retirement costs, I have previously argued that it is useful to compare percent of earnings – a measure that is independent of whether benefit and earnings are measured in annual or hourly terms. This measure is informative because both defined contribution and defined benefit retirement plans are typically specified in terms of percent of salary, either in contributions or in benefits (see Robert M. Costrell and Michael Podgursky, "Teacher Retirement Benefits," Education Next, Spring 2009). Thus, retirement costs move proportionally with salary. As noted there, this is unlike health benefits, where the annual dollar cost is fixed.

9 See Richard Schumann, "Work Schedules in the National Compensation Survey," July 28, 2008.

10 See Jason L. Ford, "The New Health Participation and Access Data from the National Compensation Survey," October 26, 2009, Tables 4 and 6 for an example. This method does not exactly reproduce the underlying ECEC figures, because the sequence of aggregation differs. The ECEC calculates annual cost at a small cell level, and divides by annual hours worked to determine hourly cost at that level, before aggregating to reported levels using employee weights; the unpublished estimates of annual hours worked are calculated at the reported levels and applied to the hourly costs at that level to estimate annual costs.

11 Since these unpublished data were obtained, I have updated the hourly ECEC data, as published, from March 2012 to March 2013. Due to publication timelines, it was infeasible to obtain updated annual hours data from the BLS. However, the data on annual hours move very slowly (well under one percent per year), so little error is introduced by using 2012 data on annual hours with 2013 data on hourly costs.

Annual Employer Insurance Costs of Teachers vs. Other Occupations

The ECEC data for March 2013 report hourly employer insurance costs of $6.77 for "primary, secondary, and special education school teachers" employed by state and local governments. To convert this to an annual figure, I use the unpublished BLS estimate of 1,297 annual hours worked (for March 2012). This results in an annual employer cost of $8,780.

There are two points about this figure (and corresponding ones below) to be aware of, which will be discussed in subsequent sections. First, these estimates do not include employee costs. Second, they are averages that include those employees who do not incur any employer health care costs because they are not covered by or do not participate in an employer plan.

Bearing these points in mind, I compare the annual employer cost for K-12 teachers with other occupational groups (see Table 1). The occupational group private "professional and related" provides a potentially informative comparison group for public school teachers, since teachers are also categorized under "professional and related" occupations.[12] The ECEC provides hourly costs of full-time and part-time private-sector workers in this occupational group, as well as for the pooled group, which is 84 percent full-time.[13] Thus, of the three reported groups – full-time, part-time, and pooled – the full-time is closest in composition to teachers, with 97 percent full-time. For that group, hourly employer insurance cost ($3.92) is only 58 percent of that for teachers, but their annual employer cost ($7,252) is 83 percent, because the annual hours worked (1,850) is quite a bit higher.[14] I can refine this estimate by constructing a composite that is 97 percent full-time, to match the composition of K-12 teachers. (I have bolded this row in Table 1, along with K-12 teachers, as my preferred comparison.) For this composite, I calculate hourly insurance cost ($3.85) and annual hours worked (1,821), for an annual insurance cost ($7,004) that is 80 percent of that for teachers. Considering the bias from measuring "insurance" rather than "health insurance," the ratio may be closer to 77 percent, as discussed above. Thus, I conclude that the annual employer cost for teachers' health insurance is 25 to 29 percent higher than for private professionals. Nearly identical results hold for the broader occupational category, private "management, professional and related," calibrated in the same way to 97 percent full-time.[15] A much wider gap exists between K-12 teachers and "all" private sector workers (also calibrated to 97 percent full-time), as Table 1 indicates.

I turn now to comparisons of employer insurance costs for K-12 teachers with groups of state and local government workers. The top panel of Table 1 presents data for "professional and related," "management, professional and related," and "all" state and local government workers. The ECEC does not provide a full-time breakout of these data for these workers, only the pooled data, briefly considered here. The annual employer insurance costs for these groups are 86 to 90 percent of those for K-12 teachers, but these figures reflect two opposing biases. On the one hand, these ratios are tilted toward 100 percent because K-12 teachers comprise a significant portion of these groups (41, 35, and 19 percent, respectively). Using these weights, I can back out K-12 teachers from these groups. As a result, I estimate that annual employer insurance costs for the non-teaching employees in these groups, as a percent of K-12 teachers, are 76, 83, and 82 percent, respectively. On the other hand, these groups include only 84 to 87 percent full-time employees, fewer than the K-12 figure of 97 percent.[16] Since part-time employees are less likely to be offered employer health insurance, this reduces the average cost of the pooled groups, so caution is advised for these comparisons with K-12 teachers.

12 The occupational groups in this category are: computer and mathematical science; architecture and engineering; life, physical, and social science; community and social services; legal; education, training, and library; arts, design, entertainment, sports, and media; and health care practitioner and technical (this includes nurses, but does not include health care support occupations, such as health aides).

13 This can be inferred from the published compensation figures for the full-time, part-time, and pooled groups, consistent with the unpublished figure provided by the BLS.

14 For "annual hours worked," the BLS provided the 11 estimates for the pooled and full-time groups in Table 1, for March 2012. I calculated the 3 estimates for part-time groups, using the pooled and full-time estimates and the full-time share of the pooled group (unpublished). I also calculated the 3 estimates for the 97 percent composites.

15 The full-time component is 88 percent for this group and 74 percent for all private employees.

16 The 84 to 87 percent figures are unpublished and pertain to the published groups that include K-12 teachers.

In addition to the broad occupational groups, I also consider registered nurses, often considered comparable to K-12 teachers. Like teachers, nurses are categorized under "professional and related," and that is the only other professional occupation for which ECEC reports insurance costs. The available data, for "civilian" nurses,[17] cover both private and state and local employees. For this group, I estimate annual employer insurance costs are 67 percent of those for teachers, but again, caution is advised, since it is only 67 percent full-time.

Figure 1 presents my estimates of annual employer insurance costs from 2004 (the first year of available K-12 teacher data) to the present.[18] What this adds to the snapshot from Table 1 is a picture of widening gaps between K-12 teachers (the thick red line) and private-sector professionals (the thick blue line, representing the 97 percent full-time composite), as well as other groups. Annual employer insurance costs for K-12 teachers rose 71 percent over this period, compared to 53 percent for private professionals (and similarly for other groups).[19,20] As a result, the gap between annual employer insurance costs for teachers and private-sector professionals rose from 12 percent in 2004 to 26 percent in 2013. The latter part of this period, however, saw some narrowing of the gap, from a peak of 33 percent in 2010.

Employer Health Care Costs for Participating Employees

As mentioned above, the ECEC estimates for employer insurance costs are averages over those employees who are covered by an employer's plan and those who are not. Employees may not be covered either because no plan is offered (particularly at issue for part-time employees) or because the employee chooses not to participate (e.g., due to coverage by the employer of one's spouse). The NCS Employee Benefits Survey (EBS) provides annual estimates of coverage rates for health care benefits that illustrate these points.

Table 2 presents the available estimates for groups previously depicted, as well as some constructed estimates, discussed below. EBS publishes the "Access Rate" – the percentage of employees offered insurance by employers; the "Take-up Rate" – the percentage of those offered insurance who sign up; and the "Participation Rate" – the percentage of employees participating in an employer benefit, the product of the Access Rate and Take-up Rate. The coverage rates for "health care" are defined by the EBS as coverage for any of the sub-categories: medical, dental, vision, and outpatient prescription drugs. Table 2 also presents the Participation Rate for "medical care" benefits, the most expensive component of "health care."[21]

Almost all K-12 teachers (98 percent, first column) have access to employer-provided health insurance. However, the Take-up Rate (second column) is only 89 percent, so the Participation Rate (third column) is 87 percent. Coverage is very similar to that of "all" full-time employees in the state and local sector.[22] It exceeds that of the pooled set of all state and local employees (which is, in turn, quite similar to those of the pooled state and local professional groups), reflecting the higher access rate for full-time than part-time employees.

17 The ECEC also reports hourly insurance costs for private registered nurses in the "health care and social assistance" industry, and in hospitals. However, corresponding data for annual hours worked were not available.

18 The unpublished data on annual hours worked, provided by BLS, go back to 2007, so those estimates are used for 2004-2006. This is unlikely to introduce significant error because the estimates are essentially unchanged for the private groups over 2007-2012, and increased by 3.1 percent for K-12 teachers. If I were to extrapolate backwards for 2004-2006 instead of using the 2007 annual hours, I would find slightly narrower gaps in 2004, and, hence, greater widening of the gaps since then.

19 These growth rates do not net out inflation, but that does not affect the comparisons.

20 Figure 1 also depicts K-12 teacher costs rising faster than for state and local groups. However, there appears to be a break in the data for the state and local groups, flagged by the downward blip in 2007 Q4. This was the quarter that NCS replaced its state and local government establishment panel in its entirety for the first time in 10 years (BLS, Handbook of Methods, Chapter 8, "National Compensation Measures," p. 3). It seems reasonable to suppose that this had a measurable impact on the state and local estimates, but not on the K-12 teacher component, since there is no blip in that series. Thus, I view the blip as spurious, and I do not fully credit the difference in 2004-2013 growth rates between teachers and other state and local workers.

21 In general, the access rates are virtually identical for "medical care" and "health care", since it is rare for an employer to offer dental, vision, or drug, without also offering medical. However, the take-up rates are often significantly higher for "health care" than for "medical care," since employees may choose to be covered by one's spouse's medical plan, and then add separately one of the other benefits from one's own employer. That is why the participation rates are higher for "health care" than "medical care."

22 The full-time breakout for compensation of these workers is not reported in the ECEC data, considered above.

I would like to compare the K-12 participation rate with that of private-sector full-time professionals, or, better yet, the 97 percent composite that I focused on in Table 1. Unlike the ECEC, however, the EBS does not provide the full-time breakout for this group. I can, however, construct a reasonable approximation of what the full-time participation rate must be, if I am willing to assume a value for the part-time participation rate. That assumed value can be used with the known weight for full-time (84 percent) and the known combined participation rate (71 percent) to infer the full-time participation rate. Specifically, Table 2 reports part-time participation rate for all private employees as 15 percent, and for all state and local employees it is 20 percent. It seems reasonable to guess that the part-time participation rate for private professionals is in the 15 to 20 percent range. If so, the full-time participation rate can be inferred to lie between 81 and 82 percent. Fortunately, this rate is not very sensitive to the assumed part-time participation rate.[23] Thus, I shall not go far wrong if I take a middling assumption of 17 percent part-time participation rate, which implies a full-time rate of 81.5 percent. Finally, I can use these estimates to construct the participation rate for my 97 percent composite: 80 percent.[24] This is somewhat lower than the 87 percent rate for K-12 teachers.

These participation rates can help shed light on the employer health insurance cost for K-12 teachers and other groups presented in Table 1. Since non-participating employees incur no cost for employers, I can divide the average cost from Table 1 by the participation rate to estimate the cost for participating employees, a calculation suggested by the BLS.[25] Thus, for K-12 teachers, dividing the average annual employer cost of $8,780 by their 87 percent participation rate yields a cost of $10,092 for participating teachers. To be precise, this represents average "insurance" cost per participant in "health insurance." That is, it includes life and disability insurance, but as I have shown above, this adds little to the estimate.

A potentially more important caveat is that some of the "health care" participants only use non-medical benefits from their employer (dental, vision, or outpatient prescription drugs). As the last two columns of Table 2 indicate, this group comprises 8 to 10 percent of "health care" participants. My calculation produces a weighted average of non-medical benefits, for that group, and, for medical care participants, the medical benefits plus any non-medical benefits they may choose. Consequently, these estimates cannot be directly compared with the medical premiums presented in the next section.

These estimates of employer insurance cost per participating employee are presented in Table 3. For the state and local groups, Table 1's estimates of annual insurance costs were 86 to 90 percent of those for teachers. Using my estimates for participating employees, this rises to 94 to 97 percent. Backing out K-12 teachers from these groups, I found ratios of 76 to 83 percent above, and for participating employees, this rises to 83 to 90 percent.[26] Again, these estimates do not control for the lower full-time percentage among these groups of state and local employees.

For private-sector "professional and related" workers – my main comparison group – I am able to take my 97 percent full-time composite estimates for average employer insurance cost ($7,004, Table 1) and the corresponding participation rate (80 percent, Table 2) to estimate the annual cost for participating employees ($8,802, Table 3). This is 87 percent of that for teachers. Before factoring out non-participants, I found a ratio of 80 percent (Table 1), so the participation rate explains less than half of the gap. Adjusting for the "health insurance" vs. "insurance" bias, the employer cost of participating private professionals may be as low as 84 percent of that for teachers. Equivalently, the annual employer health insurance cost for participating teachers is 15 to 18 percent higher than for private-sector professionals.

23 The inferred full-time rate varies with the assumed part-time rate by the ratio of the weights: 0.16/0.84.
24 An analogous algorithm is used to calculate the corresponding participation rate for medical care, 73 percent.
25 See, for example, Jason L. Ford, "The New Health Participation and Access Data from the National Compensation Survey," October 26, 2009.
26 Some states (Massachusetts, Wisconsin, and Ohio) have found the employers' insurance cost for teachers to materially exceed those for state employees, and this has driven reform efforts (see Costrell, "Collective Bargaining Weakens Cities," WSJ, November 2011).

Employer Costs for Medical Insurance Premiums

The EBS collects data on premiums for employer-provided medical care benefits. These data pertain to covered workers, so no adjustment for participation rates is required. As discussed above, these data are not directly comparable to my estimates for health care costs.[27] The medical premiums are broken out by single and family coverage; a composite average is not reported, but these data allow us to compare the cost of comparable policies. In addition, they provide information on employee contributions, examined below.

Table 4 provides the most recent data on employer premiums, for March 2013 (converted from monthly to annual dollar amounts). Although the data for most of these groups pool part-time and full-time, they are likely very close to the full-time data, as indicated by the premiums for "all" and "all, full-time" for the private sector and state and local government.

Employer costs for single coverage of private-sector professional employees are 83 percent of those for teachers, but for family coverage, they are 104 percent – slightly higher. This is a notable shift in the last few years, as can be seen from Figure 2, which depicts the dollar amounts of the gap between employer costs for teachers and private-sector professionals. As recently as 2009, the employer premium for single coverage was $1,361 higher for teachers than for private-sector professionals, compared to $968 today and for family coverage it was $29 higher instead of $425 lower. This suggests that under prolonged fiscal distress some districts have begun to adjust their policies toward private sector norms. Although not directly comparable with my estimates of insurance costs in Figure 1, there, too, I found some narrowing of the gap over the last few years, as mentioned above.

To summarize, neither set of NCS data – those presented in Table 3 or 4 – provides the full picture comparing employer costs for participating teachers and private-sector professionals, but together they add to our understanding. The data in Table 3 were based on the ECEC data, collected specifically to measure employer costs. They do not tell us how much of the gap between teachers and private-sector professionals is due to a different mix of family and single coverage (or, for that matter, in which direction the difference tilts). From the viewpoint of district finances, however, this may be irrelevant.[28] Conversely, the EBS data on premiums offer useful detail not available in the ECEC data, to be explored further below.

27 In addition to the difference between "health care" and "medical care," there are some differences in data collection. The BLS, Handbook of Methods, Chapter 8, "National Compensation Measures" (p. 20), states that for estimates of employer and employee medical premiums, "The calculations are based, not on actual decisions regarding medical coverage made by employees within the occupations, but rather on the assumption that all employees in the occupation have identical coverage."

28 Indeed, in some states, district contributions are identical for single and family coverage, with employees picking up the difference. Financial considerations may be leading other states to move in that direction, as has also occurred for some retiree health programs.

Total Medical Premium and Employee/Employer Shares

According to the EBS data on medical premiums, employer costs are higher for teachers than private-sector professionals with single coverage, but not for family coverage. One factor in determining employer costs is the share of total premiums paid by the employee. That is, employer costs can be high due to higher-priced policies or lower employee shares.

Tables 5 and 6 examine total medical premiums and the employer/employee split using March 2013 data from the EBS.[29] Table 5 considers single coverage. The employer share of the single coverage premium is higher for teachers (and other state and local employees) than for private professionals, 87 percent vs. 81 percent. This is part of the story for teachers' higher employer cost, but not the major part. The middle panel depicts the implied total premium for single coverage, calculated by dividing the employer premium (reproduced here from Table 4) by the employer share. For example, dividing the employer premium for teachers, $5,646, by the 87 percent employer share implies $6,490 total premium, of which $844 is contributed by the employee.[30] Compared to private sector professionals, I find that three-quarters of the higher employer cost for teachers is due to more expensive policies ($714 of $968), and one-quarter ($254) is due to the lower employee contribution, as shown in the right panel of Table 5.

Table 6 considers family coverage. The employer share for teachers' family premiums is lower than for private-sector professionals, 66 percent vs. 70 percent. The total premium for teachers' policies is a bit higher ($345), but the employee contribution is higher yet ($770), so the employer cost is lower ($425). That is, family policies for teachers are more expensive than for private-sector professionals, but the teachers more than cover the difference.

Figure 3 summarizes the 2013 premiums of teachers and private-sector professionals for single and family coverage, and Figure 4 provides the same information for 2008. For both single and family plans, total premiums have been higher for teachers than for private-sector professionals throughout this period. In addition, for single coverage, teachers have paid less than private-sector professionals. For family coverage, teachers have paid more, covering or more than covering the higher cost of their policies. For both single and family coverage, the gap in employer costs shifted away from teachers, as depicted also in Figure 2.

29 A distinction to bear in mind is between medical "cost" (i.e. "expenditures," see note 1) and "premiums." For the employer these are the same, but for employees the cost includes out-of-pocket costs (deductibles, etc.) as well as premiums. Thus, when referring to employer expenditures, I use cost and premium interchangeably, but not for employees. For the two together, "total premiums" more accurately describes the data than "total costs."

30 Another estimate of total premiums can also be derived from published EBS data. EBS reports employee contributions to those plans that require one (i.e. contributory plans), and also the percent of participating employees in such plans. From these data, one can calculate the overall average employee contribution and add that to the average employer premium to derive the total premium. For example, 67 percent of participating teachers are in contributory plans and they pay an average of $1,428 per year. The average employee contribution over both contributory and non-contributory plans is 67 percent of $1,428, or $957, for a total premium of $6,603. This differs by 1.7 percent from the estimate for teachers' total premium in Table 5. The other single coverage estimates are closer, generally within about 1 percent, as one would expect since they are based on the same underlying data. The same holds for the family coverage estimates in Table 6 below.

Plan Provisions

There are many reasons that insurance plans can differ in total premiums, but some of the main ones are those provisions that govern out-of-pocket expenditures by the employee, over and above the employee premium. These features include deductibles, co-payments, co-insurance, and out-of-pocket maximums. The NCS publications on Health Plan Provisions provide some of these details, including deductibles and out-of-pocket maximums.

Figure 5 depicts the most recent data (2011) on deductibles for K-12 teachers, for comparison with private-sector professionals. These data are for fee-for-service plans, which cover the large majority of participating employees (76 percent for K-12 teachers and 75 percent for private-sector professionals). NCS reports the deductibles for the percentiles displayed, 10th, 25th, 50th (median), 75th, and 90th. The family deductibles are represented by the solid lines and individual deductibles by the dashed lines – blue for private-sector professionals and red for K-12 teachers. A few data points are missing; they are filled by substituting "management, professional, and related" for "professional and related" and "teachers" for "K-12 teachers."

The family and individual deductibles are higher for private-sector professionals than K-12 teachers, at every percentile, except the median individual deductible is the same ($500). NCS does not report mean values, but I can calculate a rough approximation from these data by ascribing the value at any given percentile to the neighboring range. For example, I take the deductible at the 25th percentile and assume that it holds from the 17.5 percentile to the 37.5 percentile (the midpoints of the two adjacent intervals). By this method, I estimate that the mean family deductible for teachers is $1,378 vs. $2,238 for private-sector professionals, a difference of $860. For the mean individual deductible, I estimate $664 for teachers vs. $896 for private-sector professionals, a difference of $233.

For other measures, such as out-of-pocket maximums, the pattern is more mixed. Overall, however, the data suggest that some portion of the higher total premiums for K-12 teachers, depicted in Figure 3, is due to lower out-of-pocket costs for teachers. This does not affect my comparisons of district cost, but it does mean that the comparison of employee premiums is not the full story on teacher costs. While it is accurate to state, as I did above, that teachers pay more to get more in the way of family coverage, it is more precise to state that they pay more up front in premiums and then pay less out-of-pocket. Whether they get more in the way of health services (higher quantity or quality) is impossible to tell from the available data.

Union vs. Nonunion Employees in the Public and Private Sectors[31]

The NCS data allow us to compare medical insurance coverage and premiums for union vs. nonunion workers in the public and private sectors.[32] These breakouts are not available for K-12 teachers or private-sector professionals, but they are available for the state and local government sector and the private sector. Since I have found that teacher health care costs track the state and local sector to some extent, this level of aggregation can still be informative.

Table 7 shows the medical care access, take-up and participation rates for union and nonunion workers in the state and local sector and private industry. Union workers have almost universal access (95 percent) to employer-provided insurance in both sectors, and their participation rate is the same in both sectors (79 percent). Nonunion workers are less likely to participate in an employer-provided plan, in large part because their employer is less likely to offer one. The difference from union workers, however, is smaller in the state and local government sector, where the nonunion participation rate is 68 percent, compared to 48 percent in the private sector.[33] Thus, in accounting for the higher coverage rates in the state and local sector vs. private industry, I find that this is associated with the higher unionization rate in the public sector, but also reflects that sector's higher coverage for nonunion workers.

I now turn to employer and employee premiums for union and nonunion employees in the two sectors. The data are presented in Figure 6, for single and family coverage. These data show that in each sector, for each type of coverage, the employer cost is higher for union workers. They also show that the total premium is higher for union workers (albeit barely so for family coverage in the private sector). Finally, they show lower employee contributions for union workers, except for single coverage in the state and local sector.

The state and local sector as a whole exhibits the same patterns in comparison to the private sector as the union sector does to the nonunion sector: higher employer costs, higher total premiums, and lower employee contributions, for both types of coverage (see Tables 5 and 6, rows labeled "all"). In part, this reflects the higher unionization rate for the state and local sector: 49 percent vs. 14 percent in this dataset.[34] Using a standard shift-share analysis, that higher unionization rate can be shown to be associated with some portion of each of these patterns, i.e. the higher employer costs, higher total premiums, and lower employee contributions in the state and local sector, for both types of coverage.

As we have seen, however, these are not entirely the patterns observed between K-12 teachers and private-sector professionals: they hold for single coverage, but not family coverage. Clearly, whatever impact unionization may have, there are other confounding factors at play in explaining the national averages for teachers vs. private professionals.

There is one state, however, which provides an arguably natural experiment in changing teacher union strength: Wisconsin. If union strength results in higher employer costs, higher total premiums, and lower employee contributions (as illustrated in Figure 6), then the removal of teacher health benefits from collective bargaining in Wisconsin might be expected to have the opposite effect: reducing employer costs, reducing total premiums, and raising employee contributions. As I will show, this is exactly what happened.

31 See also Jeffrey Clemens and David M. Cutler, "Who Pays for Public Employee Health Costs?" NBER Working Paper 19574, October 2013, for an analysis of the role of strong teachers' unions in benefit growth.

32 The NCS defines union status by whether the employee belongs to a collective bargaining unit.

33 Time series data for 2007-2013 show no trend in the participation rates of any of the four groups. There has been a rise in the private sector union access rate, from 88 percent to 95 percent, but this has been offset by a decline in that group's take-up rate, from 88 percent to 83 percent.

34 These estimates are for employees in the NCS Employee Benefits Survey participating in employer medical insurance. They will differ from other estimates. It should also be borne in mind that the sectoral averages may understate the difference between teachers and private-sector professionals. Terry Moe reports that 64 percent of teachers are covered by collective bargaining, based on data from the NCES Schools and Staffing Survey (Special Interest: Teachers Unions and America's Public Schools, Brookings Institution, 2011, p. 55).

WISCONSIN: BEFORE AND AFTER ACT 10

Wisconsin was the first state in the nation with public sector collective bargaining, and long had one of the nation's strongest teachers unions.[35] It had also long been a state with very expensive teacher medical insurance. As the data below will show, average district costs in 2011 were $8,059 and $18,947 for single and family coverage. These premiums are 47 percent and 77 percent higher than the 2011 national averages, $5,500 and $10,723. Wisconsin is in a region with higher than average costs (East North Central), but the NCS data on employer premiums for state and local employees in 2011 indicate that the geographic factor only raised single coverage rates by 10 percent above the national average and family coverage by 29 percent. Other factors have played a greater role in Wisconsin's high district costs for teachers' insurance, and the state's collective bargaining environment was an important contributor.

Prior to Act 10, Wisconsin's highly contested 2011 measure that restricted public sector collective bargaining privileges, teachers' insurance was subject to local collective bargaining. An important feature of the districts' collective bargaining landscape was the WEA Trust, a vehicle to provide medical insurance to Wisconsin public schools that was created in 1970 by the Wisconsin Education Association Council (the state teachers' union, an affiliate of the NEA) and that is still closely associated with WEAC.[36] Quite frequently, this meant that local collective bargaining agreements restricted districts to purchasing insurance from the WEA Trust, thereby limiting districts' ability to shop for lower-cost alternatives. This feature was long a matter of concern in Wisconsin and even prior to Act 10 there was significant movement away from WEA Trust plans, from almost 80 percent of the teachers' market in 2004 to about 60 percent in 2010.[37] However, such moves were often difficult,[38] and on the eve of Act 10, most districts still purchased their insurance from WEA Trust, even though these plans (and Wisconsin teacher plans more generally), were often more expensive than other plans.[39]

In addition, teacher contributions to their medical premiums were generally low. In the last school year before Act 10 (2010-11) teachers made no contribution at all for single coverage in 43 percent of the state's districts, nor for family coverage in 31 percent.[40] By comparison, the 2011 non-contributory rates among teachers in the national data discussed above were 39 percent and 16 percent respectively. Among private-sector professional employees nationally the 2011 non-contributory rates for single and family plans were 17 percent and 9 percent. The average contribution rates among Wisconsin teachers were also quite low, as shown below.

In 2010, both candidates for governor (Republican Scott Walker and Democrat Tom Barrett), as well as the Wisconsin Association of School Boards (WASB) advocated measures to help localities move into less expensive plans without requiring agreement from local unions (although Barrett's plan exempted teachers). The state employees' plan received particular attention. State law already allowed localities to place employees in that plan, but under collective bargaining such moves required local union agreement.[41] Thus, both parties, to differing degrees, supported changes to collective bargaining law covering benefits – a point that was lost in the subsequent turmoil.

35 Before Act 10, Wisconsin's unionization rate was 99 percent, with 98 percent covered by collective bargaining (Moe, 2011, p. 54).
36 For background information, see James Miller, et. al., "Health Insurance for Wisconsin Public Schools: The Case for Competitive Bidding," Wisconsin Policy Research Institute, January 2005, the WEA Trust website, and Politifact, "Behind the rhetoric: The WEA Trust and School Health Care Costs," May 2012.
37 Christian D'Andrea, "Health Care Trends in Wisconsin's School Districts: A Look at the Expanding Market of Teacher Health Insurance," MacIver Institute, January 2011. This report tabulates the movement from 2004 to 2010 and estimates the cost savings. Barry Forbes of the Wisconsin Association of School Boards places WEA Trust's 2010-11 market share at about two-thirds (see Politifact, cited above). Education Action Group Foundation, "A crucial challenge for Wisconsin schools: Escaping the financial shackles of WEA Trust insurance," Fall 2010, p. 4, estimates 64 percent.
38 See the WPRI and EAG reports above for specific accounts of the difficulties in switching out of WEA Trust, prior to Act 10. Even when collective bargaining agreements allowed districts to search for competitive bids, there were many documented cases where the WEA Trust failed to produce the claims data necessary for districts to provide to prospective competitors to prepare bids, and penalized districts that sought such information.
39 In addition to the reports cited above, see HC Trends, "How Teacher Health Plans Compare with Plans Offered by Milwaukee-Area Employers," April, 2011.
40 These percentages had gradually drifted downward from 59 percent and 44 percent, respectively, in 2002-03. These data are from the WASB survey discussed below.
41 See the WPRI report for information on and analysis of this long-standing issue.

Act 10, proposed by Governor Walker and enacted by the Legislature in 2011, removed benefits from local collective bargaining, thereby giving districts greater freedom to shop for less expensive plans and negotiate premiums. This has resulted in a significant loss of business for WEA Trust and in negotiated reductions in premiums for business that it retained.[42] The law also allowed districts to establish higher employee contributions. Act 10 mandated a maximum employer share for those districts that purchase insurance from the state's group insurance board: employer contributions are capped at 88 percent of the board's lowest cost plans in the service area.[43] This provision does not directly bind the vast majority of districts, which buy insurance from other entities (including WEA Trust), but it does seem to have established a benchmark that is being widely followed, of setting employee contributions in the vicinity of 12 percent.[44]

These changes were intended to achieve savings on district benefit costs, from adopting plans with lower premiums and increasing teacher contributions. Since the passage of Act 10, evidence has accumulated of individual districts saving money, and, more recently, data have become available to evaluate savings statewide.[45]

Data on Medical Premiums in Wisconsin Districts

The Wisconsin Association of School Boards (WASB) has published annual data on medical premiums paid by districts and teachers since 2002-03.[46] These data are reported for single and family coverage. The 2011-12 rates (hereafter, 2012) were the first to be affected by Act 10. However, they did not reflect the Act's total impact, because some districts had yet to renegotiate their insurance, as some were under insurance contracts predating Act 10 and some were bound by pre-Act 10 collective bargaining agreements that had not yet expired. Thus, we also examine the 2013 rates (the most current available). Even after two years, some districts that are free to shop around may have chosen to keep the same insurer and similar plan designs.

One weakness of the WASB data is that, in each year, a number of districts do not respond to the survey. While every district appears in at least one year (Wisconsin currently has 424 traditional public school districts), the number has varied from 277 to 426 in the WASB data, between 2003 and 2011. The data for 2012 and 2013 cover 186 and 180 districts.

Since variable rates of missing data may introduce bias into my estimates of annual changes in premiums, I construct a chained estimate of yearly changes using only districts that appear in consecutive years. This is analogous to estimates of house prices that link a sales price to the same house's price on its previous sale. In my case, each year's estimate of annual change is based on the set of districts that also appears in the prior year's data. Of the 186 districts reporting in 2012, 131 also reported in 2011; and of the 180 in 2013, 94 also appear in 2012.

Another database that I examine is from the Wisconsin Department of Public Instruction (DPI). DPI compiles individual compensation data, including fringe benefits. This data set has the advantage of completeness, covering virtually all districts. It has the additional advantage of going back more years. The disadvantage is that this data set does not break out health or medical benefits from the overall fringe benefit cost.[47] However, using what is known about the impact of Act 10 on district pension costs, the change in trajectory of total fringe costs reaffirms my general findings on medical insurance costs from the WASB data.

42 See the Politifact item cited above.

43 In addition to the legislative language of Act 10 (Section 77), see the guidance issued by WASB and also the clarifying rule set by the Department of Employee Trust Funds, which administers the state plan.

44 Prior to Act 10, teacher contributions were often zero (as discussed above) and were under 10 percent in the vast majority of districts: 84 percent for single coverage and 74 percent for family.

45 MacIver Institute, "Wisconsin School Districts are Switching Health Care Providers/Plans to Create Savings in 2011." See also Wisconsin Taxpayers Alliance, "After the Storm: School Funding in 2012," The Wisconsin Taxpayer, October 2012, pp. 1-7.

46 Wisconsin Association of School Boards, "Teacher Health Insurance Cost and Contribution Comparisons." The data appear to exclude dental and vision, so, following BLS usage, I refer to "medical" instead of "health."

47 The recent study by the Wisconsin Taxpayers Alliance, cited above, draws on DPI data for total school budgets, which does break out health insurance costs, but does not break out teachers from non-teaching personnel.

Trends in District Medical Insurance Premiums: WASB Data

Figure 7 presents average district premiums for medical insurance in Wisconsin, for single and family coverage. The main takeaway, which I will closely dissect, is the sharp drop in district costs following Act 10, after years of steady growth.

Figure 7 presents weighted and unweighted averages across all reporting districts in any given year. The unweighted averages replicate the estimates reported by WASB.[48] The weighted averages use teacher FTE data from Wisconsin's Department of Public Instruction. Up through 2010 the differences between the weighted and unweighted averages were minor. In 2011, however, the weighted averages grew noticeably more slowly than the unweighted averages, particularly for family coverage: $220 vs. $892 (as can be calculated from the data in Figure 7). One reason is that a number of large districts that had previously reported their data to WASB stopped doing so in 2011, most notably Milwaukee (far and away the largest district in the state). Up until then, the larger districts had generally included both high-cost and low-cost plans, as indicated by how close the two curves had been. Milwaukee, however, was among the highest-cost districts in the state in 2010, so its exclusion from the data in 2011 had a detectable negative impact on the weighted average, slowing its rate of growth. This example illustrates the general point that although weighted averages are usually more informative for examining cost levels, the changes in weighted averages can be more sensitive to missing data that vary by year.

The weakness in the estimates of annual change from these averages is that the districts compared in any pair of years will generally not match. The chained estimates are constructed to avoid this problem. For example, my chained estimates for the 2010-11 change are based on the 265 districts for which I have data on both years, whereas my averages of the raw data for 2010 and 2011 are drawn from 390 and 277 districts, respectively. The weighted and unweighted chained estimates for the 2010-11 change ($629 and $703, respectively, for family coverage) are much closer to each other than are the changes in the weighted and unweighted averages ($220 and $892 as discussed above). Thus, the chained methodology reduces spurious differences between weighted and unweighted estimates of growth.

That said, real differences do remain between weighted and unweighted estimates, even with chaining. For example, the weighted and unweighted chained estimates of the 2011-12 change in district cost of family coverage are -$2,036 and -$2,821, respectively, while the corresponding estimates from raw averages are -$2,166 and -$2,769. Thus, the difference between weighted and unweighted estimates for 2011-12 is not an artifact of the change in missing data. Rather, there appear to have been systematically larger reductions in employer premiums in the small districts than the large ones immediately after Act 10, at least in those 131 districts that were common to both the 2011 and 2012 datasets. For 2012-13, the weighted and unweighted chained estimates of change once again converge; however, there are only 94 districts common to those last two years.

The complete set of chained estimates is used to construct Figure 8. What is relevant in this figure is the year-to-year change in each curve, more so than the level. The level of the curves is fixed by choosing a base year, to which the chained estimates of annual change are applied. The base year chosen for Figure 8 is 2010, a year in which a very complete set of districts (390) reported to WASB, so the weighted and unweighted averages for that year (also depicted in Figure 7) are likely quite accurate. In my judgment, the estimated changes depicted in Figure 8 are generally more reliable than those depicted in Figure 7.

48 Estimates are converted from monthly to annual by a factor of 12, consistent with guidance received from WASB, as well as spot checks of individual district data on the web.

The magnitude of the 2012 drop in district premiums is striking. As we have seen, for family coverage, chained district premiums fell an estimated $2,821 (unweighted) and $2,036 (weighted), and for single coverage, district premiums fell $1,396 (unweighted) and $1,056 (weighted). These are underestimates of district savings attributable to Act 10, since premiums were steadily rising prior to Act 10 and were expected to continue doing so. To be sure, the rise had slowed since 2007, so in extrapolating trends from 2011 to 2012, I use the average growth from 2007 to 2011. I estimate the district cost reduction in 2012, relative to trend, for family coverage to be $3,506 (unweighted) and $2,639 (weighted), while for single coverage the figures are $1,689 (unweighted) and $1,318 (weighted). These estimates, dissected further below, represent savings of 13-19 percent from the projected district premiums for 2012.

As Figure 8 shows, the decline in district premiums slowed or leveled off in 2013. However, given the likely continued growth in district premiums absent Act 10, it does appear that there were further district savings from Act 10. This would be consistent with the fact that more collective bargaining agreements expired, freeing up districts to obtain medical insurance in a less constrained environment. Specifically, Figure 8 shows a $397 further reduction in district premiums for family coverage (weighted), on top of the $2,036 in 2012, for a two-year drop of $2,433. Compared to two years of projected growth at the previous rate, I estimate the impact of Act 10 on district premiums for family coverage as $3,640. This represents an 18 percent saving from the projected 2013 premium, under the pre-Act 10 trend. The other estimates range up to a 23 percent saving (single coverage, unweighted).

To be sure, these two-year estimates (18-23 percent savings) have more uncertainty than the one-year estimates (13-19 percent). First, as mentioned above, the chained estimates for 2012-13 are based on a smaller number of districts (94 vs. 131). Second, the counterfactual projected growth, based on 2007-11, is necessarily more conjectural for the second out-year than the first. That said, it does seem clear that additional savings did accrue in year two, and the estimate of 4-5 percent for those additional savings does not seem unreasonable.

Decomposition of District Savings

Districts saved on their premiums for teacher medical insurance in 2012 and 2013 for two reasons: reductions in total premiums and increases in the share paid by teachers. As discussed above, Act 10 did not directly raise teachers' contributions, but the 12 percent standard it set for state employees provides an example for districts which they are now free to follow, with the end of collective bargaining over benefits. Figure 9 illustrates the general pattern of teacher contributions.[49] Between 2003 and 2011, average contributions hovered in the 3-4 percent range for single coverage and 4-5 percent for family coverage. In 2012, following Act 10, average contributions jumped to over 10 percent for both types of coverage, and to about 11 percent in 2013. This now places Wisconsin in the vicinity of the national average for contributions by teachers with single coverage (13 percent), but still far below the average for family coverage (34 percent), as shown in Tables 5 and 6.

In dollar terms, teacher contributions for family coverage rose by $990 in 2012 and $77 in 2013, for a two-year rise of $1,067, or $971 relative to prior trends. At the same time, total premiums declined by $1,366 ($1,046 in 2012 and $320 in 2013), or $2,669 relative to trend, as districts have been able to shop for less expensive plans. Together, these comprise the $3,640 district savings from Act 10 cited above for family coverage.

Figures 10 and 11 graphically depict the total premium, district premium, and the difference between the two, paid by the teachers, using unweighted and weighted chained estimates. The story these figures show is that after Act 10, total premiums went down and teacher contributions went up, both contributing to the decline in district costs for single and family coverage. This is exactly the pattern observed in the BLS data comparing union and nonunion workers on total premiums, employee contributions and employer costs.

49 The general pattern described here obtains under all four estimates: weighted and unweighted, raw and chained.

Table 8 brings together my detailed estimates of the impact of Wisconsin's Act 10 on district costs. Consider the weighted chained estimates for family coverage, tabulated in the last column. Row (1) gives the 2011-13 decline in total premiums, $1,366 (depicted by the top curve in Figure 11). Row (2) gives the 2011-13 rise in teacher contributions, $1,067 (the widening gap between the top two curves in Figure 11). Taking these together, row (3) shows the $2,433 drop in district premiums by 2013 (depicted by the 2nd curve in Figure 11). Row (4) gives the trend growth in total premiums, $652 per year (the average growth in the top curve of Figure 11, from the kink point at 2007 to 2011), of which growing teacher contributions accounted for $48 (row (5)). Thus, the trend growth in district premiums was $603 (row (6)). Row (7) gives my estimate of Act 10's total impact on annual district premiums after two years: $3,640; it is the 2011-13 decline of $2,433 minus two times the annual trend growth of $603. This can be decomposed into the impact on total premiums (row (8)) and on teacher contributions (row (9)). These comprise about three-fourths and one-fourth, respectively, of Act 10's total impact on district premiums (rows (10) and (11)). Finally, row (12) reports the estimated impact of Act 10 on district premiums as a percent of the projected 2013 premium, ranging from 18 percent to 23 percent, depending on coverage and weighting.

Two caveats are worth reiterating. First, these data on employee costs only measure employee premiums; they do not measure the level or changes in employee payments out-of-pocket for medical coverage (co-payments, deductibles, and coinsurance). It is certainly the case that some (maybe most) of the reduction in total premiums is due to a rise in employee out-of-pocket payments (referred to as "cost-sharing" in the industry). For example, there is some evidence of districts shifting toward higher deductibles.[50] This does not affect my estimates of the impact on district cost, but it does mean that some portion of what is counted here as impact on "total premiums" actually represents the impact on employee out-of-pocket costs. That is, the share of district cost reduction due to higher employee costs (premiums plus out-of-pocket) is underestimated because the data are restricted to premiums.

Second, as previously discussed, these data do not tell us anything about the quantity and quality of medical care provided. There is some theoretical reason to believe that efficiency may be enhanced as employees (consumers of medical care) pay more of the cost and as employers become free to shop around. But I have no hard data on this.

District Cost of Fringe Benefits in Wisconsin

As a check on the WASB data, I examined data from the Wisconsin Department of Public Instruction (DPI) on districts' fringe benefit costs for teachers. These data, unlike the WASB data, have no problem with missing districts. However, the DPI's publicly available dataset does not separate out health benefits from other fringe benefits, including retirement contributions, Social Security, and life insurance.[51] The impact of Act 10 captured by these data will therefore include not only the impact on health insurance, but also the shift of about one-half of retirement contributions from employer to employee, mandated by the Act.

Figure 12 depicts the district fringe benefit costs for teachers in Wisconsin, from 1998 to 2013. The steady rise in dollar terms from 1998 to 2011 is also reflected in the remarkable rise of the fringe benefit rate (i.e. percent of salary), from 34.2 percent (referring here to the weighted averages) to 51.3 percent. After Act 10, the average fringe rate dropped 8.5 percentage points to 42.8 percent – still high by comparison with the private sector, but markedly reduced.

50 Erica Breunlin, "Teachers moving to pricier health plans," Milwaukee Journal Sentinel, April 21, 2012. In addition, some employers are inducing employees to participate in preventive health care programs, generating potential efficiency gains.

51 These breakouts are available for benefits of all employees, teaching and non-teaching together, and are analyzed in the Wisconsin Taxpayers Alliance report cited above. The dataset I examine here is restricted to teachers with 95 to 149 percent FTE.

Much of that drop reflects the shift in retirement contributions. Act 10 barred employers from picking up the employee share of contributions to the Wisconsin Retirement System (which covers all teachers). That share was 5.8 percent of payroll in calendar year 2012 and 6.65 percent in 2013. This probably did not translate into a full 5.8 point drop in the fringe rate in the first year of Act 10, because some districts' pickup continued through 2012 and into 2013 due to unexpired contracts.[52] That said, it seems likely that by 2013 about two-thirds of the 8.5 point drop in district fringe rates represents the shift in retirement contributions.

Virtually all of the remainder represents the 2011-13 drop in district health benefit costs. Thus, of the total dollar drop in fringe benefit costs ($4,659 weighted), these data suggest a drop of about $1,500 in district health costs (weighted, and a bit more unweighted). These estimates are broadly consistent with my estimates based on the WASB data, presented in the top panel of Table 8 (i.e. ignoring trend), for plausible splits between single and family coverage.

Looking Ahead in Wisconsin

The WASB and DPI data show striking evidence of a large first-year impact of Act 10 on district costs for teacher health insurance, and further impact in year two. As time goes on, it will be more difficult to disentangle the effects of Act 10 from other developments in the increasingly turbulent health care market, but we do know that these developments will play out from a significantly lower starting point, due to Act 10.

One important development to watch is the Federal tax on "Cadillac plans," slated for 2018 under the Affordable Care Act of 2010. This provision places a 40 percent excise tax on plans for which total premiums exceed $27,500 (family) or $10,200 (single). In 2011, before Act 10, no district in the WASB database had yet exceeded the limit for family coverage, but 22 percent of the districts (with 11 percent of the state's teachers) had already exceeded the limit for single coverage. Projecting out from the pre-Act 10 level to 2018 at the prior trend rate, 78 percent of the districts (with 64 percent of the teachers) would exceed the single limit and 26 percent of districts (with 14 percent of the teachers) would exceed the family limit.

Even now, with the dramatic savings from Act 10, district costs and total premiums in Wisconsin are still well above the national average for teachers, and a handful of districts still exceed the Cadillac limit for single coverage. Projecting out to 2018, using the pre-2011 trend, a quarter of the districts (with one-sixth of the teachers) would exceed the limit for single coverage, and a handful would exceed it for family coverage. Thus, if and when the luxury tax is implemented, there will be continuing pressure to reduce plan costs in at least some of Wisconsin's districts, and Act 10 will make it easier for districts to avoid the Federal tax.

CONCLUSION

I have closely examined the BLS data from the National Compensation Survey to compare district costs for teacher insurance with employer costs for professional employees in the private sector. In so doing, I converted hourly costs to annual costs, using unpublished data on annual hours worked, to avoid overstating the higher costs for teachers. I found that annual employer insurance costs are 25 percent higher for teachers than for private-sector professionals. Adjusting for higher participation rates among teachers reduces the difference to 15 percent. Direct estimates of employer medical premiums present a mixed picture: higher employer premiums for teachers with single coverage, but not family coverage. In both cases, total medical premiums are higher for teachers than for private-sector professionals, but for family coverage the teachers cover the extra premiums themselves. Some of the higher premiums pay for lower out-of-pocket expenditures for teachers.

52 Also, not every district picked up 100 percent of the employee contribution prior to Act 10, but it was quite close.

The NCS data show that unionization is associated with higher total premiums, higher employer costs and lower employee contributions in both the public and private sectors. This suggests that the high unionization rate among teachers plays an important role in districts' higher average cost. Equally important, varying strength of teachers unions across states helps explain the wide variation in district costs and employee contributions, variation that is masked by the averages. For example, NCS data on the distribution of employee premiums for family coverage (in contributory plans) show that teachers in the 90th percentile contribute $11,922 vs. $1,447 at the 10th percentile. In some nonunion states, teacher health insurance benefits are not particularly generous, due to high out-of-pocket costs (e.g. high deductibles) or high teacher shares of premiums. In Arkansas,[53] until recently, teachers typically paid 65 or 70 percent of the premiums for family coverage, and even now (2014) they pay 58 to 62 percent (the national average is 34 percent – see Table 6).[54] In other states, with strong unions, district insurance costs can be very expensive. It is in those states that the opportunities for district cost reduction are most promising, as the data from Wisconsin so clearly show.[55]

The methods of district cost reduction would ideally include measures that enhance efficiency, such as greater competition for health insurance. Wisconsin's example comes to mind, where the WEA Trust's insulation from competition was weakened by Act 10. However, there should be no illusions that such efficiencies will come easily. In all likelihood, a great deal of any district cost reduction will take the form of higher teacher payments toward their health care through higher contributions and out-of-pocket expenses. This raises the question of the role of teacher health benefits in the total compensation package. The overall size of the package will continue to be the subject of debate, increasingly framed by the fiscal exigencies that districts now face. However, it is worth commenting on the structure of the package.

There are three reasons that efficiency might be enhanced by reallocating some of the compensation package from employer-paid health benefits to salary.[56] First, as discussed briefly above (and quite extensively in the health care literature), efficiency in health care expenditures is more likely enhanced when the consumer is incentivized by some price signals (e.g. to participate in wellness programs). Second, there is growing bipartisan interest in various forms of differential pay. To the extent that compensation is shifted back to salary (in the aggregate), there is greater opportunity for districts to use salary differentials to retain and recruit higher quality teachers. Finally, as a matter of consumer choice, not all employees may want their employers to devote, say, $20,000 out of a $70,000 compensation package to medical insurance. The fact that take-up rates are well under 100 percent (Table 2) is evidence that many teachers ascribe less value to the medical benefits offered than they cost, even with the employer paying the lion's share. Among these are teachers who decline insurance because they are covered by their spouse's plan, in which case the value of the benefit offered is zero, and a higher salary would clearly be preferable. Thus, both efficiency (in attracting recruits) and equity (toward non-participants) might be enhanced by such a shift. Ideally, employers could offer greater choice among medical plans of varying cost, with lower subsidies, fixed in size, and higher salaries that allow employees to choose how much they want to spend on higher-cost plans.[57] As districts under fiscal distress increasingly turn to cost-cutting measures, such potential efficiency enhancements will become all the more important.

53 Arkansas' unionization rate is 36 percent, with 17 percent covered by collective bargaining (Moe, 2011, p. 55).

54 Of the remainder, the state pays the lion's share, although districts have latitude to pay more than the state-mandated minimum of $1,800. Total premiums are in the range of $16,356-$22,099 in 2014 for the state's standardized Gold and Silver coverage, up markedly from $13,262-$14,535 in 2012. (The Bronze package offers minimal benefits and is not comparable).

55 See also the data from Massachusetts' reforms. Massachusetts Taxpayers Foundation, "One Year Later, Municipal Health Insurance Law a Smashing Success," July 11, 2012.

56 The tax treatment of health expenditures has historically favored employer-provided insurance, and continues to be a consideration in the structure of the compensation package. Employee premiums are often configured to be tax exempt. Out-of-pocket payments can also be made tax exempt through health savings accounts, but are currently more cumbersome, due to non-carryover provisions.

57 The Affordable Care Act places restrictions on the range of plans that can be offered, both on the low end (minimum standards) and the high end (with the "Cadillac tax," as discussed in the text).

Table 1: Hourly and Annual Estimates of Employer Cost for Employee Insurance (March 2013)

	Employer Cost per Hour Worked for Employee Insurance, 2013	Annual Hours Worked, 2012	Estimated Annual Employer Cost for Employee Insurance, 2013	Percent of Annual Cost for Teachers
STATE AND LOCAL GOVERNMENT WORKERS				
Primary, Secondary, and Special Education Teachers (97% Full-Time)	**$6.77**	**1,297**	**$8,780**	**100%**
Professional and Related (86% Full-Time)	$5.61	1,353	$7,589	86%
Management, Professional and Related (87% Full-Time)	$5.65	1,393	$7,868	90%
All (84% Full-Time)	$5.10	1,487	$7,581	86%
PRIVATE INDUSTRY WORKERS				
Professional and Related (84% Full-Time)	$3.52	1,687	$5,940	68%
Professional and Related, Full-Time	$3.92	1,850	$7,252	83%
Professional and Related, Part-Time	$1.43	896	$1,281	15%
Professional and Related @ 97% Full-Time	**$3.85**	**1,821**	**$7,004**	**80%**
Management, Professional and Related (88% Full-Time)	$3.69	1,738	$6,414	73%
Management, Professional and Related, Full-Time	$3.99	1,852	$7,391	84%
Management, Professional and Related, Part-Time	$1.41	907	$1,279	15%
Management, Professional and Related @ 97% Full-Time	$3.91	1,824	$7,137	81%
All (74% Full-Time)	$2.40	1,697	$4,073	46%
All, Full-Time	$2.97	1,932	$5,739	65%
All, Part-Time	$0.74	1,022	$756	9%
All @ 97% Full-Time	$2.90	1,905	$5,530	63%
Civilian Registered Nurses (67% Full-Time)	$3.84	1,543	$5,926	67%

Sources: BLS National Compensation Survey, Employer Costs for Employee Compensation; unpublished BLS tabulations; author's calculations.

Table 2: Access, Take-up, and Participation Rates for Health Care Benefits (March 2013)

	Health Care			Medical Care
	Access Rate	Take-up Rate	Participation Rate	Participation Rate
STATE AND LOCAL GOVERNMENT WORKERS				
Primary, Secondary, and Special Education Teachers (97% FT)	**98%**	**89%**	**87%**	80%
Professional and Related (86% FT)	89%	90%	80%	74%
Management, Professional and Related (87% FT)	89%	90%	80%	74%
All (84% FT)	87%	90%	79%	73%
All, Full-Time	99%	90%	90%	84%
All, Part-Time	24%	82%	20%	17%
PRIVATE INDUSTRY WORKERS				
Professional and Related (84% FT)	84%	84%	71%	65%
Professional and Related @ 97% FT (assume PT part'n = 17%; FT part'n = 81.5%)			**80%**	73%
Management, Professional and Related (88% FT)	88%	85%	74%	67%
Mgt, Prof'l and Related @ 97% FT (assume PT part'n = 17%; FT part'n = 81.5%)			**80%**	72%
All (74% FT)	70%	79%	55%	51%
All, Full-Time	85%	81%	69%	64%
All, Part-Time	24%	60%	15%	13%
All @ 97% Full-Time	83%	80%	67%	62%
Civilian Registered Nurses (67% FT)	81%	83%	67%	60%

Sources: BLS National Compensation Survey, Employee Benefits Survey; author's calculations.

Table 3: Estimates of Annual Employer Health Care Cost for Participating Employees (March 2013)

	Estimated Employer Cost for Employee Insurance	Participation Rate for Health Care	Estimated Employer Cost for Participating Employees	Estimated Percent of Annual Cost for Teachers
STATE AND LOCAL GOVERNMENT WORKERS				
Primary, Secondary, and Special Education Teachers (97% FT)	**$8,780**	**87%**	**$10,092**	**100%**
Professional and Related (86% FT)	$7,589	80%	$9,486	94%
Management, Professional and Related (87% FT)	$7,868	80%	$9,835	97%
All (84% FT)	$7,581	79%	$9,597	95%
PRIVATE INDUSTRY WORKERS				
Professional and Related @ 97% FT	**$7,004**	**80%**	**$8,802**	**87%**
Management, Professional and Related @ 97% FT	$7,137	80%	$8,973	89%
All @ 97% FT	$5,530	67%	$8,208	81%
Civilian Registered Nurses (67% FT)	$5,926	67%	$8,844	88%

Sources: Tables 1 and 2.

Table 4: Annual Employer Cost for Medical Care Benefits (March 2013)

	Employer Premium: Single	Percent of Annual Cost for Teachers	Employer Premium: Family	Percent of Annual Cost for Teachers
STATE AND LOCAL GOVERNMENT WORKERS				
Primary, Secondary, and Special Education Teachers	**$5,646**	**100%**	**$10,994**	**100%**
Professional and Related	$5,554	98%	$11,302	103%
Management, Professional and Related	$5,578	99%	$11,422	104%
All	$5,531	98%	$11,555	105%
All, Full-Time	$5,543	98%	$11,552	105%
PRIVATE INDUSTRY WORKERS				
Professional and Related	**$4,678**	**83%**	**$11,419**	**104%**
Management, Professional and Related	$4,607	82%	$11,435	104%
All	$4,427	78%	$10,620	97%
All, Full-Time	$4,471	79%	$10,761	98%
Civilian Registered Nurses	$4,792	85%	$11,898	108%

Sources: BLS National Compensation Survey, Employee Benefits Survey.

Table 5: Employer, Employee, and Total Premium For Single Medical Coverage (March 2013)

					Teachers Minus Comparison Group		
	Employer Share of Premium	Employer Premium	Implied Employee Premium	Implied Total Premium	Employer Premium	Implied Employee Premium	Implied Total Premium
STATE AND LOCAL GOVERNMENT WORKERS							
Primary, Secondary, and Special Education Teachers	**87%**	**$ 5,646**	**$ 844**	**$ 6,490**	**$ -**	**$ -**	**$ -**
Professional and Related	87%	$ 5,554	$ 830	$ 6,383	$ 92	$ 14	$ 106
Management, Professional and Related	87%	$ 5,578	$ 833	$ 6,411	$ 68	$ 10	$ 78
All	87%	$ 5,531	$ 827	$ 6,358	$ 115	$ 17	$ 132
All, Full-Time	87%	$ 5,543	$ 828	$ 6,372	$ 103	$ 15	$ 118
PRIVATE INDUSTRY WORKERS							
Professional and Related	**81%**	**$ 4,678**	**$ 1,097**	**$ 5,775**	**$ 968**	**$ (254)**	**$ 714**
Management, Professional and Related	81%	$ 4,607	$ 1,081	$ 5,687	$ 1,039	$ (237)	$ 803
All	79%	$ 4,427	$ 1,177	$ 5,603	$ 1,219	$ (333)	$ 886
All, Full-Time	79%	$ 4,471	$ 1,189	$ 5,660	$ 1,175	$ (345)	$ 830
Civilian Registered Nurses	80%	$ 4,792	$ 1,198	$ 5,990	$ 854	$ (354)	$ 500

Sources: Table 4; BLS National Compensation Survey, Employee Benefits Survey; author's calculations.

Table 6: Employer, Employee, and Total Premium For Family Medical Coverage (March 2013)

					Teachers Minus Comparison Group		
	Employer Share of Premium	Employer Premium	Implied Employee Premium	Implied Total Premium	Employer Premium	Implied Employee Premium	Implied Total Premium
STATE AND LOCAL GOVERNMENT WORKERS							
Primary, Secondary, and Special Education Teachers	**66%**	**$ 10,994**	**$ 5,664**	**$ 16,658**	**$ -**	**$ -**	**$ -**
Professional and Related	68%	$ 11,302	$ 5,319	$ 16,621	$ (308)	$ 345	$ 37
Management, Professional and Related	69%	$ 11,422	$ 5,132	$ 16,554	$ (428)	$ 532	$ 104
All	70%	$ 11,555	$ 4,952	$ 16,507	$ (561)	$ 711	$ 150
All, Full-Time	71%	$ 11,552	$ 4,718	$ 16,270	$ (558)	$ 945	$ 387
PRIVATE INDUSTRY WORKERS							
Professional and Related	**70%**	**$ 11,419**	**$ 4,894**	**$ 16,313**	**$ (425)**	**$ 770**	**$ 345**
Management, Professional and Related	70%	$ 11,435	$ 4,901	$ 16,336	$ (441)	$ 763	$ 321
All	68%	$ 10,620	$ 4,998	$ 15,618	$ 374	$ 666	$ 1,039
All, Full-Time	68%	$ 10,761	$ 5,064	$ 15,825	$ 233	$ 599	$ 832
Civilian Registered Nurses	71%	$ 11,898	$ 4,860	$ 16,758	$ (904)	$ 804	$ (101)

Sources: Table 4; BLS National Compensation Survey, Employee Benefits Survey; author's calculations.

Table 7: Union and Nonunion Coverage Rates for Medical Care Benefits (March 2013)

	Access Rate	Take-up rate	Participation Rate
UNION WORKERS			
State and Local Government	95%	84%	79%
Private Industry	95%	83%	79%
NONUNION WORKERS			
State and Local Government	80%	84%	68%
Private Industry	67%	72%	48%
ALL WORKERS			
State and Local Government	87%	84%	73%
Private Industry	70%	73%	51%

Source: BLS National Compensation Survey, Employee Benefits Survey.

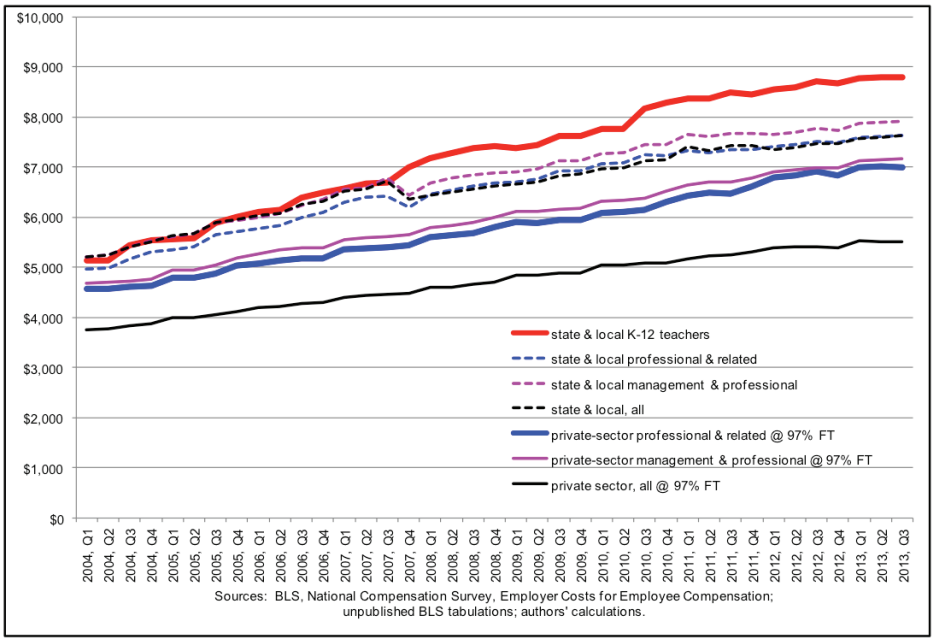
Table 8: Estimated Impact of Wisconsin's Act 10 on District Medical Premiums (2011 – 2013) Chained Estimates

	unweighted		weighted	
	Single Coverage	Family Coverage	Single Coverage	Family Coverage
(1) 2011-13 Change in Total Premium	-$970	-$2,061	-$662	-$1,366
(2) 2011-13 Change in Employee Premium	$538	$1,025	$572	$1,067
(3) 2011-13 Change in District Premium: (1) - (2)	-$1,507	-$3,086	-$1,234	-$2,433
(4) 2007-2011 Trend in Total Premium	$312	$743	$276	$652
(5) 2007-2011 Trend in Employee Premium	$20	$58	$14	$48
(6) 2007-2011 Trend in District Premium: (4) - (5)	$293	$685	$262	$603
TOTAL IMPACT OF ACT 10 ON DISTRICT PREMIUM:				
(7) 2011-13 CHANGE IN DISTRICT PREMIUM MINUS TREND: (3) - 2 x (6)	**-$2,093**	**-$4,456**	**-$1,757**	**-$3,640**
(8) impact on total premium, relative to trend: (1) - 2 x (4)	-$1,594	-$3,546	-$1,213	-$2,669
(9) minus impact on employee premium, relative to trend: -[(2) - 2 x (5)]	-$499	-$910	-$544	-$971
(10) percent from total premium reduction: (8)/(7)	76%	80%	69%	73%
(11) percent from higher employee premium: (9)/(7)	24%	20%	31%	27%
(12) PERCENT IMPACT OF ACT 10: (7)/projected 2013 district premium	**-23%**	**-21%**	**-20%**	**-18%**

Estimates tie to Figures 10 and 11. Totals may not be exact due to rounding.

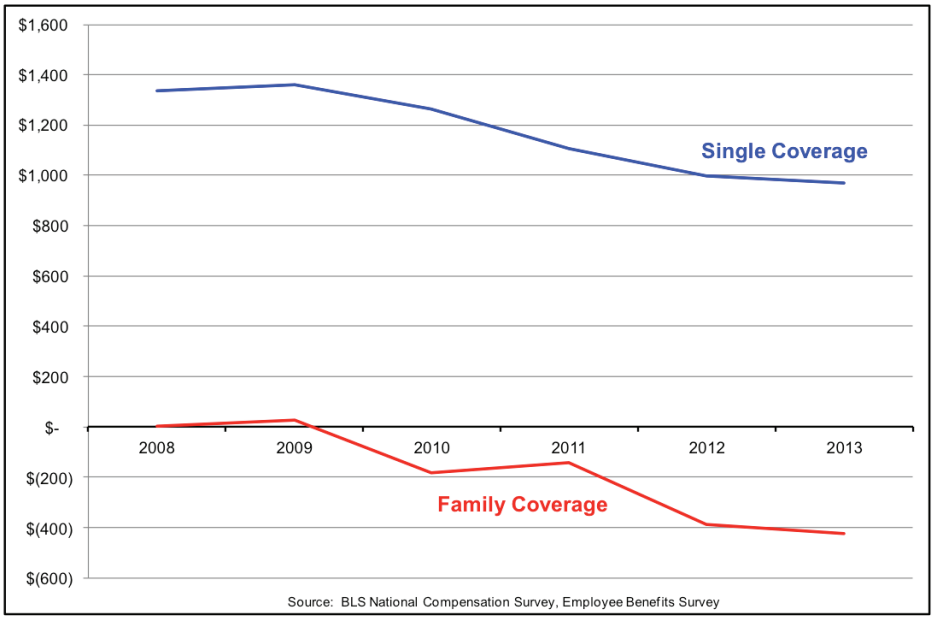
Sources: Wisconsin Association of School Boards, "Teacher Health Insurance Cost and Contribution Comparisons";
Wisconsin Department of Public Instruction for FTE weights; author's calculations.

Figure 1: Estimated Annual Insurance Cost to Employer (2004 – 2013)



Sources: BLS, National Compensation Survey, Employer Costs for Employee Compensation; unpublished BLS tabulations; authors' calculations.

Figure 2: Gap in Employer Medical Premiums (2008 – 2013)
K-12 Teachers Minus Private Sector Professionals



Source: BLS National Compensation Survey, Employee Benefits Survey

Figure 3: Employer, Employee, and Total Medical Premiums (March 2013)
K-12 Teachers and Private Sector Professionals

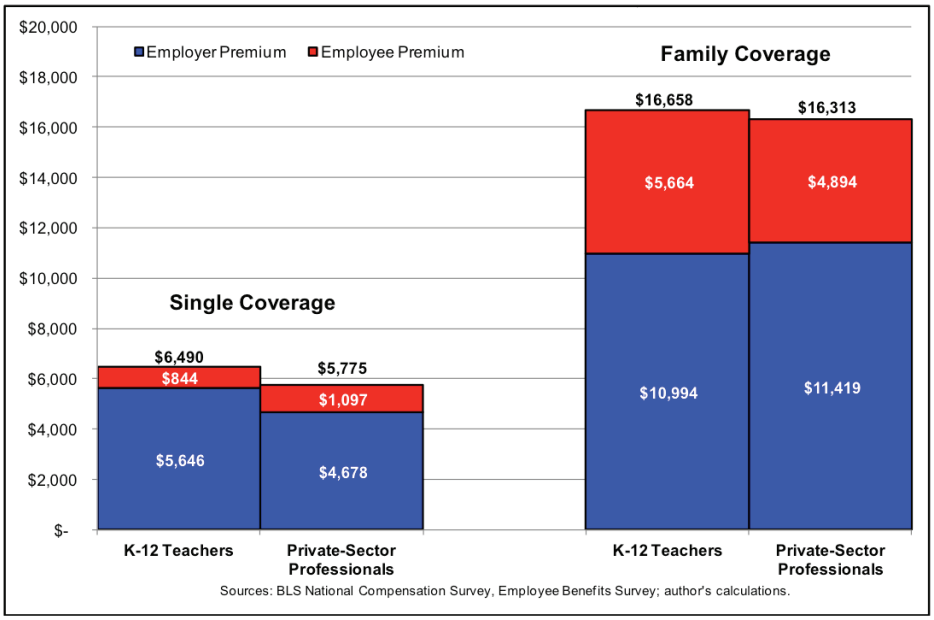


Figure 4: Employer, Employee, and Total Medical Premiums (March 2008)
K-12 Teachers and Private Sector Professionals

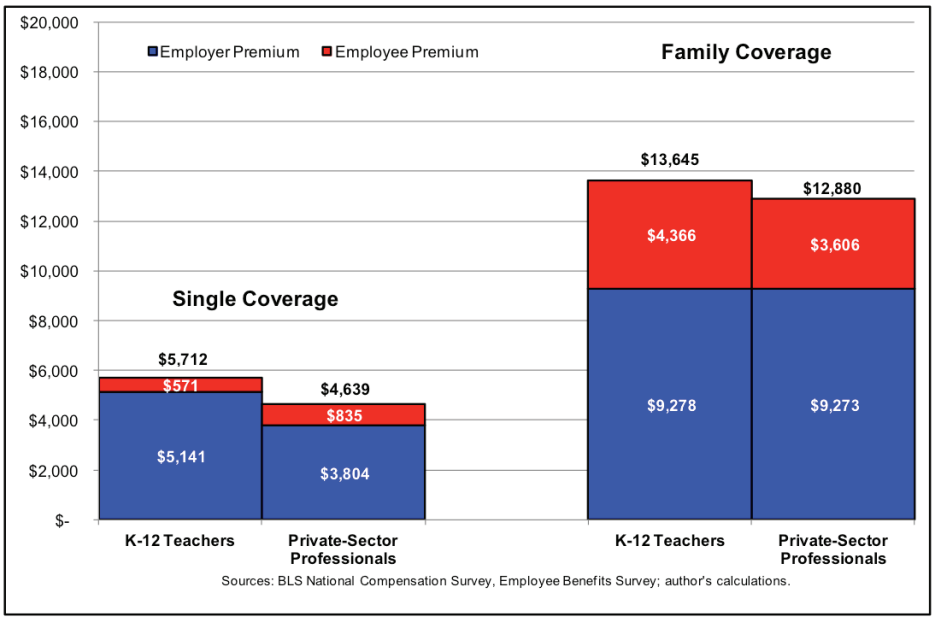


Figure 5: Annual Deductible, Fee-For-Service Plans (2011)

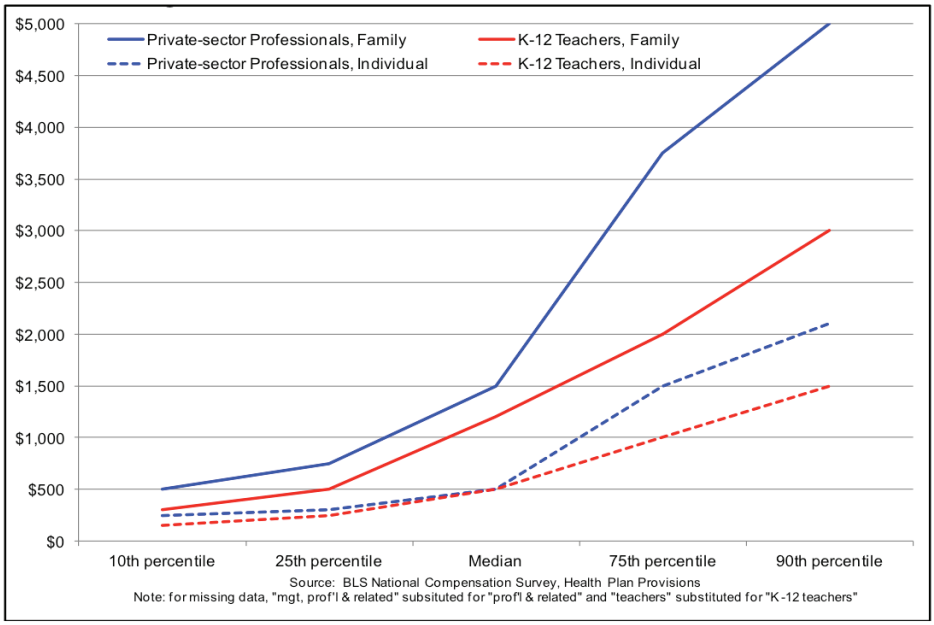


Figure 6: Medical Care Premiums, by Union Status (March 2013)
State and Local, and Private Sector

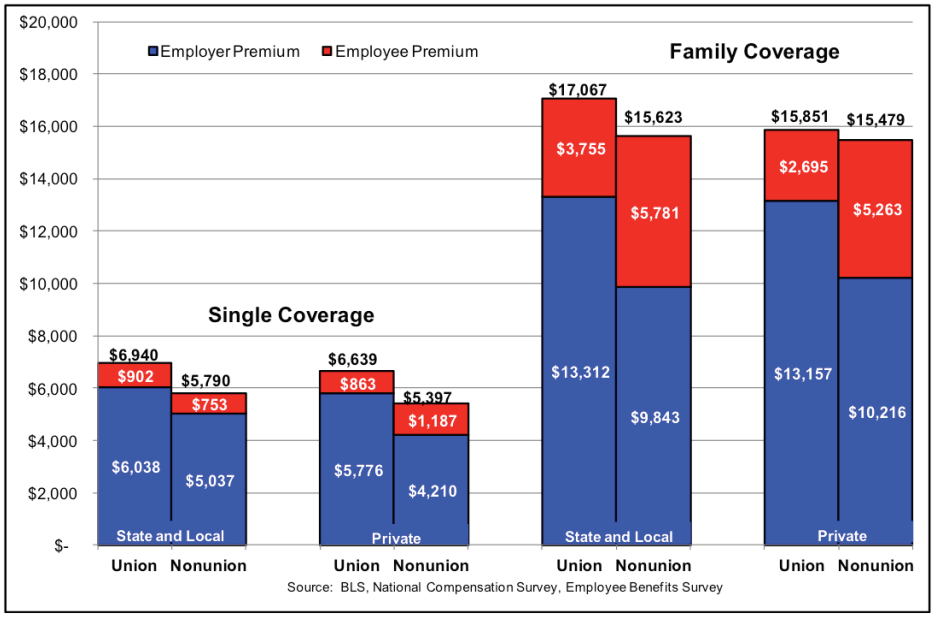


Figure 7: Average District Medical Premiums, Wisconsin (2003 - 2013)

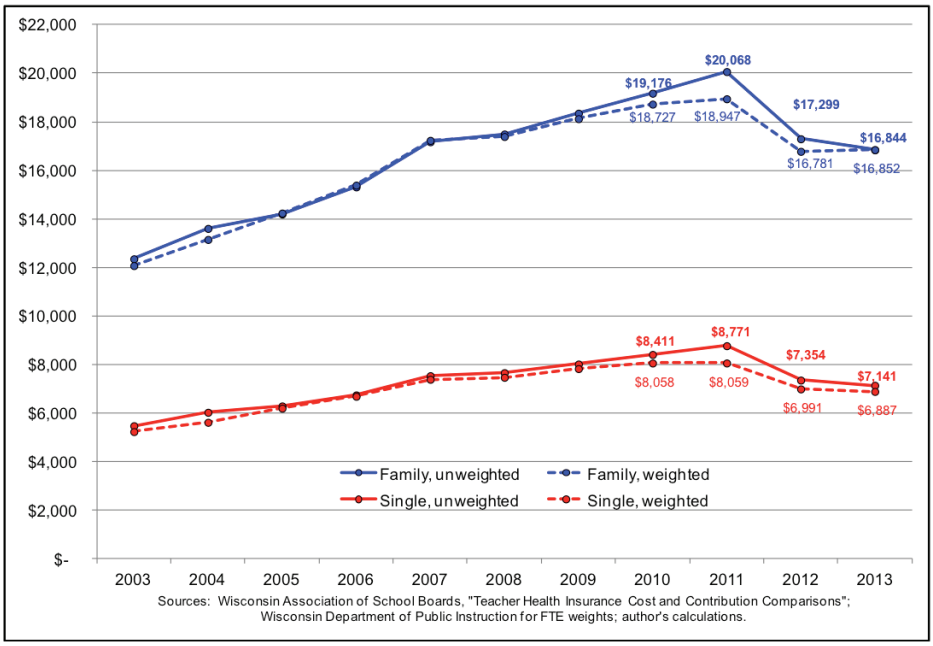


Figure 8: Chained District Medical Premiums, Wisconsin (2003 - 2013)
NOTE: 2010 BASE

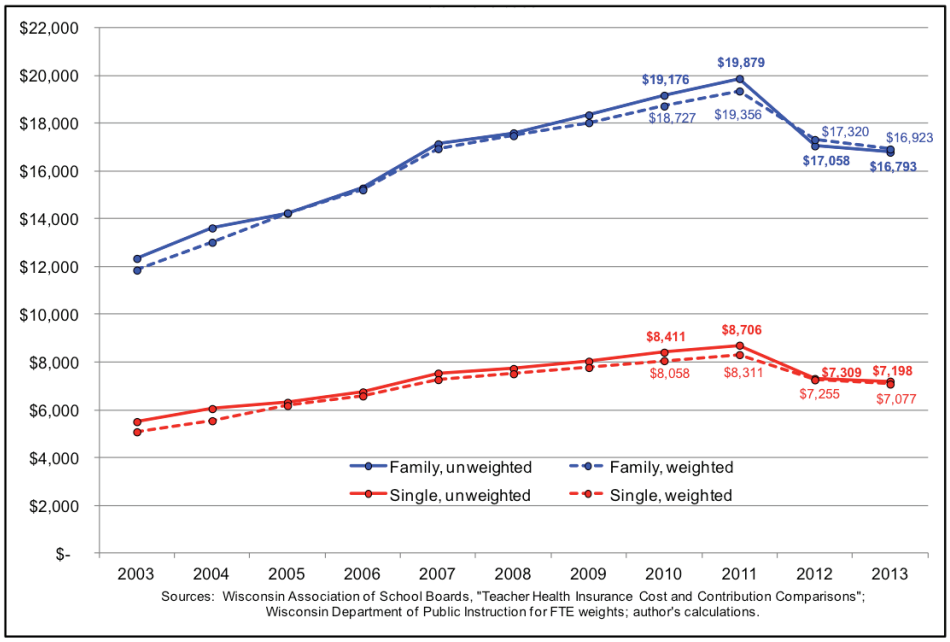


Figure 9: Teacher's Share for Medical Premiums, Wisconsin (2003 - 2013)
Weighted Chained Estimates: 2010 Base

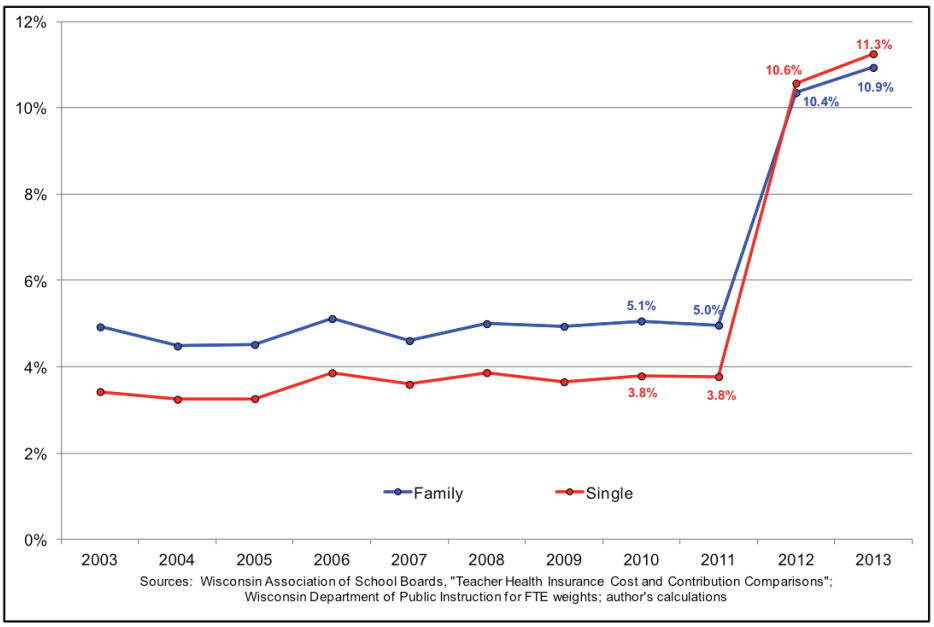


Figure 10: Total and District Premium, Wisconsin, Unweighted (2003 - 2013)
Chained Estimates: 2010 Base

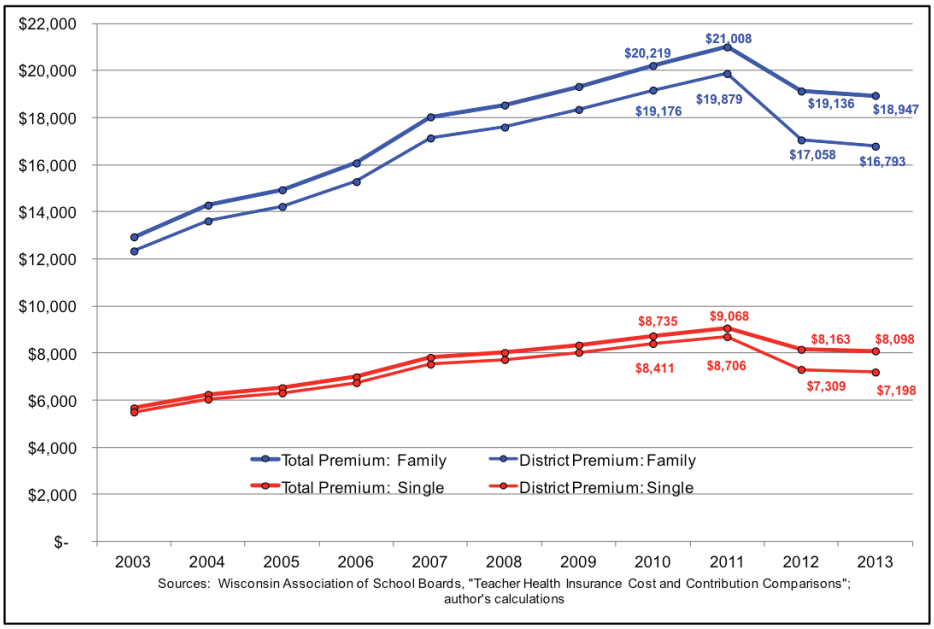


Figure 11: Total and District Premium, Wisconsin, Weighted (2003 - 2013)
Chained Estimates: 2010 Base

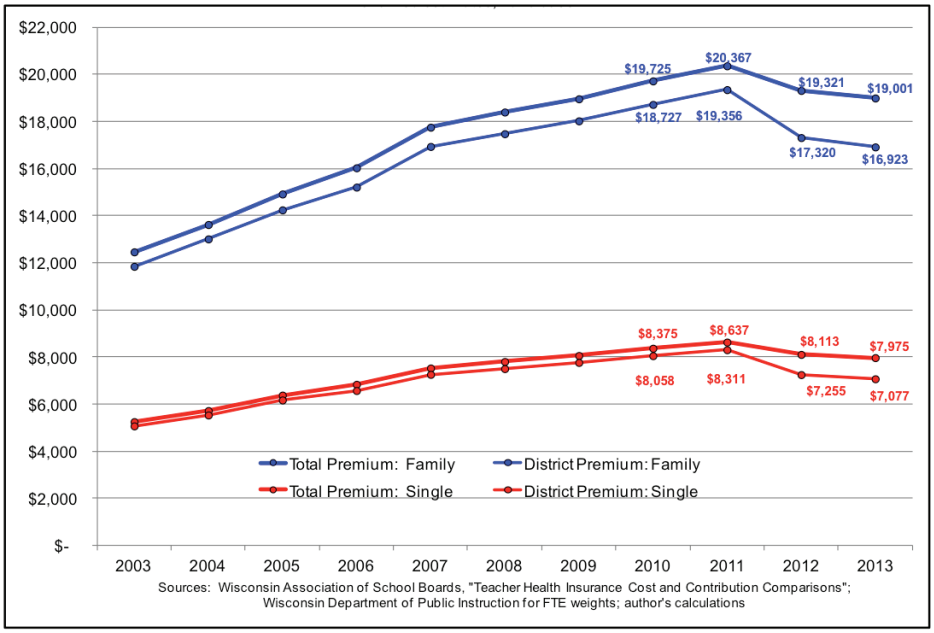
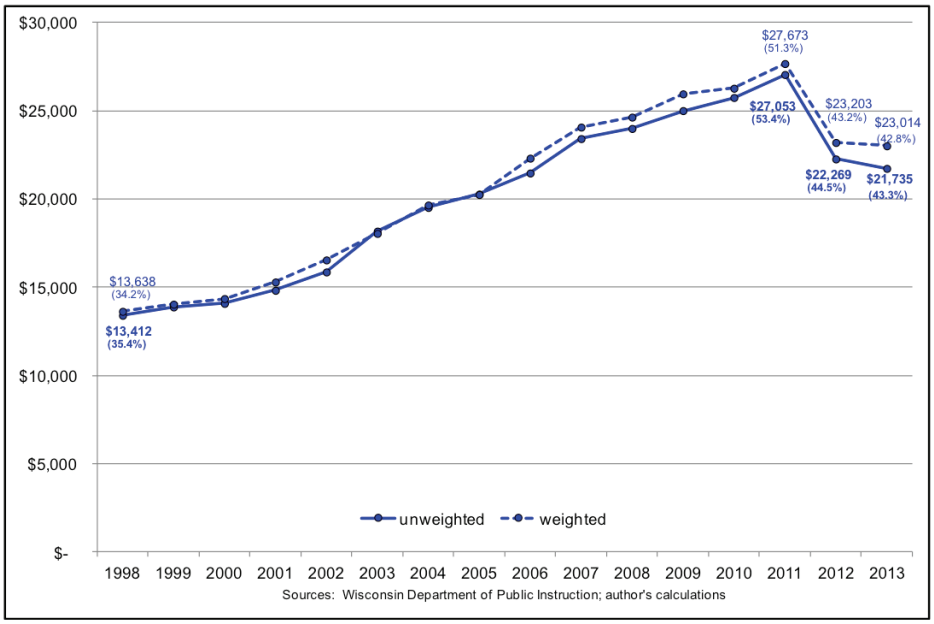


Figure 12: Fringe Benefit Costs for Teachers, Wisconsin (1998 - 2013)
With Percent of Salary



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