

Wisconsin's Act 10, Flexible Pay, and the Impact on Teacher Labor Markets

*Student test scores rise in flexible-pay districts.
So does a gender gap for teacher compensation.*

EFFECTIVE TEACHERS are a vital input for schools and students. Teachers can have important and long-lasting impacts on students' learning, college attendance, and eventual earnings. They can also reduce teen pregnancy or incarceration. Attracting effective teachers into public schools and retaining them is thus a first-order policy goal. Changes in teacher compensation, for example across-the-board raises in salaries or pay plans that directly tie salaries to performance, are often proposed as ways to achieve this goal. The debate on these reforms, though, is very much open; some opponents argue that these changes would be ineffective because teachers are not motivated by money.

Empirical evidence on the effects of compensation reform is somewhat scarce. Most U.S. public school teachers are paid according to rigid schedules that determine pay based solely on seniority and academic credentials. In unionized school districts, these schedules are set by collective bargaining agreements. The near absence of variation in pay practices has prevented rigorous evaluation of the impacts of changes in the structure of teacher pay on the supply of effective teachers and on students' success.

The dearth of variation in pay schemes was broken in 2011 when the Wisconsin state legislature passed Act 10. Intended to help address a projected \$3.6 billion budget deficit through cuts in public-sector spending, Act 10 introduced several changes concerning teachers' unions, school districts, and their employees. First and foremost,

Act 10 limited the scope of salary negotiations to base pay, preventing unions from negotiating salary schedules and including them in collective bargaining agreements. This allowed school districts to set pay more flexibly and without unions' consent, in principle detaching compensation from seniority and credentials. Act 10 also capped annual growth in base pay to the rate of inflation and required employees to contribute more towards their pensions and health care plans. Lastly, the new legislation made it harder for unions to operate. It requires local union chapters to recertify every year with support from the absolute majority of all employees they represent, and it prohibits automatic collection of union dues from employees' paychecks.

The public debate over Act 10 has focused on whether the reform package was good or bad for students, schools, and teachers. The unions vigorously opposed the legislation, organizing protests and occupying the state capitol building. Republican Governor Scott Walker just as vigorously defended the legislation, which helped propel him to national prominence. For education policy scholars, however, what is undeniable is that the legislation was useful, because its implementation offered an opportunity to study its effects. In a series of studies, I have taken advantage of the changes to teachers' labor markets introduced by the reform to shed light on the impact of flexible pay on teachers' mobility and effectiveness, the gender wage gap among teachers, and whether most teachers would prefer higher salaries today versus more generous pensions when they retire.

By **BARBARA BIASI**



Learning from Act 10

The provisions of Act 10 went into effect immediately. In practice, though, school districts acquired the power to use their newly acquired flexibility not simultaneously, but at different points in time. The two-year collective bargaining agreements reached between each district and its teachers union prior to 2011 remained valid until their expiration, and districts had been on different negotiation calendars starting from several years prior to Act 10. As a result, the timing of expiration was staggered across districts for reasons that were effectively random. This variation creates an opportunity to examine the impact of the end of collective bargaining over teacher pay.

Districts were free under Act 10 to decide whether and to what extent to use their newly gained flexibility to depart from salaries based only on seniority and academic credentials. To characterize these choices, I analyzed districts' post-Act 10 employee handbooks, documents which list the duties and rights of all teachers and describe how they are paid. As of 2015, approximately half of all districts still included a salary schedule in their handbook and did not mention any other bonuses or increments; I call these seniority-pay districts. The remaining districts, on the other hand, did not list any schedule and often clearly stated that individual pay would be set as the district saw fit; I call these flexible-pay districts.

Using employment records on all public-school teachers in Wisconsin linked to individual student information on achievement and demographics from the Wisconsin Department of Public Instruction, I first document how teacher salaries changed in flexible-pay and seniority-pay districts in the aftermath of the reform. After the expiration of districts' collective bargaining agreements, salary differences among teachers with similar seniority and credentials emerged in flexible-pay districts, but not in seniority-pay districts. Before the passage of Act 10, such teachers would have been paid the same. These newly emerging differences are related to teachers' effectiveness: Teachers with higher value-added (individual contributions to the growth in student achievement, as measured by standardized test scores) started earning more in flexible-pay districts. This finding is striking considering that school districts in Wisconsin neither calculate value-added nor use it to make any human-resources decisions. School and district administrators appear to be able to identify an effective teacher when they see one.

Does Flexible Pay Attract Better Teachers?

Changes in teachers' pay arrangements after the expiration of the collective bargaining agreements changed teachers' incentives to stay in their district or to move,

depending on the teachers' effectiveness and the pay plan in place in their district of origin. Because flexible-pay districts compensate teachers for their effectiveness and seniority-pay districts only reward them for seniority and academic credentials, teachers with higher effectiveness should want to move to flexible-pay districts, whereas teachers with lower effectiveness and higher seniority should want to move to seniority-pay districts.

The data confirm these hypotheses. The rate of cross-district movement more than doubled after Act 10, with most moves occurring across districts of different type (flexible-pay vs. seniority-pay). Teachers who moved to a flexible-pay district after a collective bargaining agree-

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ment expired were more than a standard deviation more effective, on average, than teachers who moved to the same districts before the expiration; these teachers also had lower seniority and academic credentials and enjoyed a significant pay increase upon moving. The effectiveness of teachers moving to seniority-pay districts, on the other hand, did not change, and these teachers did not experience any change in pay.

In addition to inducing sorting of teachers across districts, Act 10 led some teachers to leave the public school system altogether: The exit rate nearly doubled in the immediate aftermath of the reform, to 9 percent from 5 percent. Again, the characteristics of those who chose to leave differed depending on the pay plan each district chose after its collective bargaining agreement expired. Teachers who left flexible-pay districts were far less effective than those who left seniority-pay districts.

Changes in the composition of movers and leavers after collective bargaining agreements expired produced a 4 percent of a standard deviation increase in ex ante (i.e., measured pre-reform) teacher effectiveness in flexible-pay relative to seniority-pay districts. In flexible-pay districts, the effectiveness of teachers who did not move or leave also increased immediately after the reform, compared with teachers in seniority-pay districts, suggesting that teachers in flexible-pay districts increased their effort (Figure 1). Overall, changes in the composition and effort of the teaching workforce led to a 5 percent of a standard deviation increase in student test scores in flexible-pay

districts relative to seniority-pay districts in the five years following the reform.

Taken together, these results suggest that higher pay can be an effective tool to attract and retain talented teachers.

It is worth stressing, though, that part of the gains enjoyed by flexible-pay districts came at the expense of seniority-pay districts, with implications for inequality in the allocation of teachers across students. Whether flexible pay undermines equity depends on which districts adopt flexible pay, which is in turn related to the characteristics of the districts' students, the pool of teachers they employed pre-reform, and their budgets. For example, to attract its most preferred teachers under flexible pay, a district with a smaller budget and a larger share of economically disadvantaged students may have to pay too high a premium, which it cannot afford. The district may thus decide to stay with seniority pay to at least be able to fill its teaching slots.

In a separate study, Chao Fu, John Stromme, and I use post-Act 10 data from Wisconsin to explore this possibility. We conclude that a switch from rigid to flexible pay (like the one that occurred in Wisconsin after the reform) could reduce disadvantaged students' access to more effective and therefore in-demand teachers. We also show, however, that properly designed bonus programs that redistribute state funds to districts serving large numbers of disadvantaged students could offset this effect.

More Pay for Male Teachers

An additional caveat for a pay approach that gives districts flexibility over teacher pay is that it may produce wage inequality across teachers with similar effectiveness but different demographic characteristics—for example, men and women. A pay plan that allows employers to adjust workers' pay at the individual level introduces the opportunity for individual negotiations. However, research suggests that women are often reluctant to negotiate for higher pay, giving an advantage to men and creating or exacerbating gender pay gaps.

To test whether this dynamic emerged among Wisconsin teachers after Act 10, Heather Sarsons and I compare the salaries of male and female teachers with the same demographic profile, with the same seniority and academic credentials, and who teach in the same district, grade, and subject. We make these comparisons before and after the expiration of each district's post-Act 10 collective bargaining agreement to see how the law affected gender equity. Prior to the passage of Act 10, strict adherence to seniority-based

salary schedules meant that there was no gender wage gap among Wisconsin teachers. With the advent of flexible pay, though, a gender gap emerged that penalizes women (Figure 2). While small on average, the gap is larger for younger and less experienced teachers. If this gap were to persist over time, women would lose an entire year's pay relative to men over the course of a 35-year career.

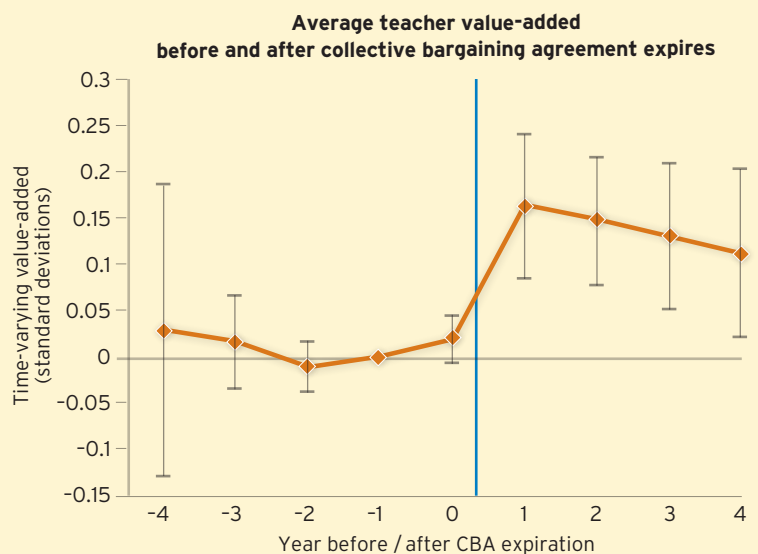
The gender wage gap associated with flexible pay also differs depending on the gender of school and district leaders. In schools with a female principal or districts with a female superintendent, the gap is virtually zero. In schools and districts run by men, the gap is substantial.

The emergence of a gender wage gap following the introduction of flexible pay suggests that gender differences in teachers' willingness to bargain or their bargaining

Post-Act 10, Teachers Increase Effort in Flexible-Pay Districts

(Figure 1)

In Wisconsin, the effectiveness of teachers who remained in flexible-pay districts increased after their collective bargaining agreements expired and the Act 10 pay reform was implemented.



NOTE: Difference in teacher value-added between teachers in flexible-pay and those in seniority-pay districts, by time-to-expiration of districts' collective bargaining agreements. Estimates control for district and year fixed effects; for teachers' experience and academic credentials; and for district characteristics.

SOURCE: "The Labor Market for Teachers under Different Pay Schemes," Barbara Biasi, *American Economic Journal: Economic Policy* (2021)

ability could be driving part or all of it. To shed light on bargaining's role, we surveyed all current Wisconsin public school teachers. We asked respondents whether they have ever negotiated their pay or plan to do so in the future. We then asked teachers who declined to negotiate why they chose to do so. We asked those who did bargain whether they believed the negotiation was successful.

Survey responses indicate that women are systematically less likely than men to have negotiated their pay at various points in their careers or to anticipate negotiating in the future. The magnitude of the differences is substantial, suggesting that differences in bargaining could lead to a gender wage gap as large as 12%. In line with our wage results, gender differences in negotiating behavior are entirely driven by men being more likely to bargain under a male superintendent, whereas men and women who work under a female superintendent are equally

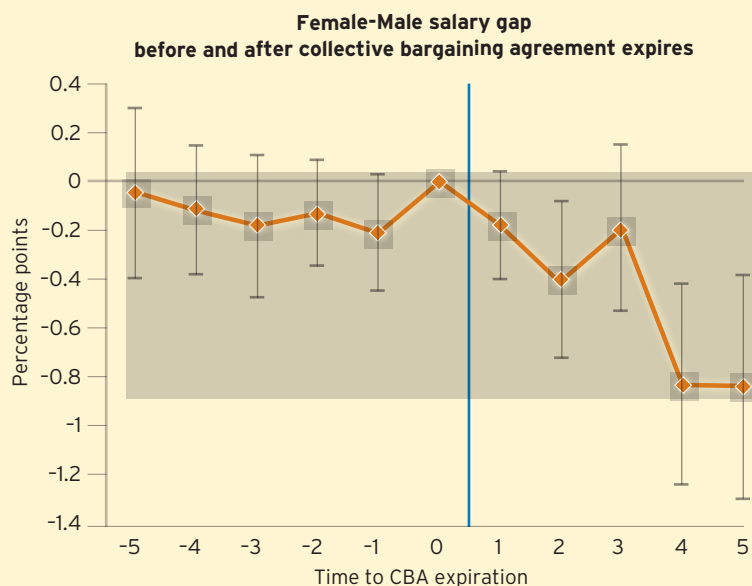
likely to negotiate their salaries. When asked why they did not negotiate, women are 31% more likely than men to report that they do not feel comfortable negotiating pay. Differences in the perceived returns to bargaining and beliefs about one's teaching ability do not explain why women are less likely to negotiate.

In short, our survey data point to gender differences in bargaining as a likely determinant of the gender wage gap. We also test for, and rule out, three additional explanations. The first is the possibility of gender differences in teaching quality: As districts use wage flexibility to pay higher salaries to more effective teachers, a gender gap could emerge if men are better teachers than women. Our data do not support this hypothesis: women's value-added is slightly higher than men's and controlling for it does not affect the gap. Furthermore, the returns to having high value-added after the introduction of flexible pay are positive for men,

but not for women. A second possible explanation is job mobility. If women are less likely than men to move, they might be unable to take advantage of outside offers with higher pay. In our data, however, women are as likely as men to move. The third possible explanation is higher demand for male teachers from certain schools, for example those employing fewer men, those that lost male teachers immediately before Act 10, and those enrolling a higher share of male students. While the gender wage gap is larger in such schools, these differences only explain a very small portion of the total gap. Taken together, our results highlight how flexible pay, while possibly beneficial to attract effective teachers and incentivize all teachers to exert more effort, can be detrimental for some subgroups.

Gender Wage Gap Emerges after Pay Reform (Figure 2)

Seniority-based pay schedules prior to Act 10 saw no gap in salaries between men and women teachers. After the reform, younger, less-experienced female teachers experienced widening gaps with their male counterparts.



NOTE: Difference in 100 * log salaries of observationally equivalent men and women. Estimates control for district and year fixed effects and for teachers' experience and academic credentials.

SOURCE: "Flexible Wages, Bargaining, and the Gender Gap," Barbara Biasi and Heather Sarsons, *The Quarterly Journal of Economics* (2022)

How Much Do Teachers Value Their Pensions?

To date, most of the debate on how to design teacher pay to improve selection and retention has focused on salaries—that is, the compensation that teachers receive while active in the labor force. Yet, almost all U.S. public school teachers receive a large portion of their lifetime compensation in the form of defined-benefit retirement pensions.

Pension benefits are typically calculated using a formula that multiplies years of service, average salary over the final several years of the teacher's career, and a "replacement factor" (e.g., 2.5 percent). On one hand, this makes pensions very generous for career teachers and thus extremely onerous for state budgets, to the point that the pension liabilities of current public-sector employees (approximately half of whom are teachers) were

fully funded in only two states in 2018. Reforms to increase the solvency of these plans have thus been debated for years across many states. On the other hand, the use of defined-benefit plans implies that any changes to the structure and growth of teachers' pay—especially towards the end of the career—would translate into changes in pension benefits.

To fully appreciate how salaries and pension reforms would affect the composition of the teaching workforce, it is crucial to understand how teachers value higher salaries vis à vis generous pensions. The multiple provisions of Act 10, which changed teachers' salaries and

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future pension benefits with a staggered timing across districts, also allow me to study this question. First, as mentioned above, the legislation introduced flexible pay across districts after the end of each collective bargaining agreement. For the subsample of teachers already eligible to retire (those who are at least 55 years old and have at least five years of service), who enjoyed the most generous salaries before Act 10 because of salary schedules that rewarded seniority, this led to a 7.5 percent decline in gross salaries. Importantly, since pension benefits are calculated using a defined-benefit formula, this decline also translated into a 5.8 percent decline in future pension benefits for the average retirement-eligible teacher.

Second, Act 10 raised employees' contributions to their pension plan from zero to approximately 6 percent of annual salaries, lowering employer contributions by the same amount (so that the total per worker contribution remained the same). Akin to the levy of a payroll tax, this provision lowered net salaries for all teachers and took place starting from 2012 in all districts.

To estimate the impact of these changes in compensation on teachers' decisions about whether to remain in the classroom, I track teacher retirement rates across districts as these two provisions of the reform went into effect. Overall, retirement (defined as the share of teachers eligible to claim a pension, which in Wisconsin are those aged 55 and above with 5 or more years of service, who leave at the

end of the year) rose to 34% from 15% after Act 10. The staggered timing of the changes' implementation allows me to separate responses to changes in net salaries (due to the increase in contribution rates) from responses to changes in gross salaries and pension benefits (due to the introduction of flexible pay). I find that approximately 45% of the increase in retirement can be attributed to the decline in net salaries, whereas 55% can be ascribed to the fall in gross salaries and pension benefits.

Next, I test whether teachers' response to a decline in salaries is equivalent to their response to the same decline in pension benefits, or if teachers instead react more strongly to changes in either form of compensation (which would be consistent with them having stronger preferences for it). The data reveal that teachers respond more to changes in current salaries than they do to equivalent changes in the value of their future pension benefits. This finding has an important implication for the design of teachers' compensation schemes: shifting part of their lifetime compensation away from retirement towards employment (i.e., raising salaries and making pensions less generous) could significantly improve teacher retention.

Act 10's Lessons

In sum, Act 10 offered a unique opportunity to understand what would happen to the teacher labor market if it were to become more similar to "standard" labor markets in terms of pay. This reform is still relatively recent; its long-run effects on the public education system in Wisconsin remain to be seen. In particular, careful study of its effects on the selection of new teachers and entry in the profession represents an important avenue for future research.

Taken together, however, the results of the studies conducted to date highlight how reforms of the structure of teachers' pay can be a powerful instrument to attract and retain effective educators, which could have profound and long-lasting effects on students. Giving school districts autonomy over the design of pay and limiting the rigidity embedded in the use of seniority-based salary schedules can help administrators attract more effective teachers from other school districts—and, presumably, from outside of education. Yet, some of the findings call for caution when re-designing teachers' pay arrangements: Flexibility can generate inequities across students in the effectiveness of their teachers, and across male and female teachers in the pay they receive.

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