

Alternative Methods of Experience Rating Unemployment Insurance Employer Taxes

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For most states the methodology used for assigning Unemployment Insurance tax rates to employers arose when the program was first established in 1935. More than 80 years later, with evolving employment relationships, state systems have become outmoded. This paper critiques current experience rating methods and presents new methodologies that are much easier to operate and that improve the incentives for employers to increase employment. The proposed methods would assess taxes based on employment or payroll variation such that growing firms would have lower taxes. A simulation analysis illustrates the impact of the new methods on employer groups.

INTRODUCTION

The United States is the only country in the world that varies an individual employer's Unemployment Insurance (UI) tax rate based on the employer's own experience with the risk of unemployment. At its inception the establishment of a public-sector UI program that uses an experience-rated tax system was a bold initiative that was unmatched anywhere in the world. To this day the United States remains the only country to use such a system.

The decision to use experience rating methodologies in UI financing was made in 1935, at the time the UI program was first enacted. Since that time both the program and the economy have undergone significant changes which have now made the operation of existing experience rating systems antiquated and inefficient in their operation in most states. This paper discusses the historical application of experience rating and its relative importance today. A critique of the current systems is provided along with an introduction of new methodologies which are simpler to operate, potentially

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offer more effective incentives for employment, and are more appropriate for grading individual employers for assignment of UI tax rates.

HISTORICAL APPLICATION OF EXPERIENCE RATING

To understand the structure of UI tax rate assignment and how it evolved, it is necessary to review the development of program financing at its inception in the 1930s. The Social Security Act, which established the UI system, was adopted in the middle of the Great Depression. In 1935 there was an unemployment

rate of 19 percent and workers were less mobile than today. The financing features of the new state UI programs were crafted under these conditions. Indeed, the idea behind varying an individual employer's UI tax rate according to their experience was strongly shaped by both the economic conditions at the time and the established private programs that existed in wide areas of the country.

By the early 1930s, a number of large employers had established voluntary individual UI accounts for the payment of benefits to their own employees. These were similar to private employer severance plans that still operate today and are still how some less-developed countries operate required severance programs. In fact, the structure of early UI financing was similar to that of the early Workmen's Compensation programs, which had proven successful in improving accident prevention. It was thought that this approach would also be successful in stabilizing employment if used in the UI program, although some thought that employers did not have much control over layoffs and that experience rating could exacerbate economic downturns (Baicker, Goldin, and Katz 1997).

Wisconsin was the first state to pass any type of unemployment compensation program and policy makers there were extremely influential in shaping the federal process. The Wisconsin law, passed in 1932, provided for a state fund made up of individual employer accounts to be financed by contributions from the employer. Benefits would be paid to the employee only from the employer's account and benefits were to be reduced or stopped if the employer's reserves were inadequate. Each company's liability would be limited to the amount in its own reserve fund. In other words, each company would be paying for benefits for its employees only. There would be no pooling of funds, and employees would not receive any benefits if the employer's account was empty. Contribution rates for individual employers would be reduced when the employer's reserve exceeded specified amounts per employee. Benefits paid to a worker employed by multiple companies would be charged to the last employer first and then in reverse order to other employers.

At about the same time, an Ohio study commission developed a competing plan that provided for much greater sharing of the UI costs with benefit payments coming from a pooled

APPLICATIONS FOR PRACTICE

- The methodologies used to assign State Unemployment Insurance (UI) tax rates to individual employers, mostly the "Reserve Ratio" and "Benefit Ratio" methods, have become increasingly outmoded and suffer from major flaws.
- Much of the administrative work in assigning benefits to the "responsible" employers is burdensome and unnecessary.
- Alternative methods of assigning UI tax rates, based on employment or payroll changes, are proposed. These are administratively easier to apply than existing methods and provide much greater incentives for employers to increase employment.

fund rather than from individual employer accounts. The program could operate with or without experience rating. Under this type of program, claimants would be paid even after their employer's account was exhausted.

After a great deal of debate, much of the Wisconsin law became the blueprint for the federal law that was enacted in 1935. Soon after its passage, the Committee on Economic Security developed most of the guidelines surrounding experience rating provisions as a basis for setting tax rates for employers.¹ The Social Security Act allowed for systems of individual accounts but also allowed for pooled funds.²

In fact, much of the federal law has remained the same as when it was written in 1935. The law encourages states to use experience rating in assigning tax rates to individual employers by imposing significant penalties for its absence. The statute imposes a federal tax on wages paid by all UI-covered employers but allows an employer a credit of 90 percent of that tax if certain requirements are met. One requirement is that any reduction in employer UI tax rates from the standard rate (5.4 percent for this purpose) must be based primarily on an employer's "experience with respect to unemployment or other factors bearing a direct relation to unemployment risk."³

At the time of passage of the Social Security Act, most existing programs followed the Wisconsin model in which individual employers maintained their own UI accounts from which benefits were paid to their employees. The reason this is such a crucial financing issue is that large UI programs are commonly characterized by a large proportion of benefits not being assigned to or paid by a responsible employer. This necessitates a separate pool of funds from which to pay these benefits, which all of these states eventually constructed.

After passage of the Social Security Act, a few more states adopted individual reserve account systems, some with partial pooling, in which employers contributed to a separate account which paid benefits to workers whose employer's account was exhausted. Other states created fully-pooled systems following the Ohio model. However, most of the states with pooled funds continued to maintain individual employer accounts, to charge benefits and credit contributions to those accounts, and to assign tax rates based on account balances.⁴

It was not until 1949 that all states had merged their individual accounts into pooled funds. At that time the UI tax essentially adopted the characteristics of an insurance premium rather than just a tax⁵—spreading the risk of high benefit payments across all employers in the state and limiting the liability of any single employer from having to pay for a high level of benefits,

1. The President's Committee on Economic Security was formed in June 1934 and was given the task of devising "recommendations concerning proposals which in its judgment will promote greater economic security" (Social Security Administration 2019).

2. The tax provisions were later moved to the Internal Revenue Code and designated the Federal Unemployment Tax Act (FUTA).

3. This language was added in 1939. The original act allowed tax rate reductions for employers with "three years of compensation experience."

4. In 1938, UI coverage extended only to private firms employing eight or more persons at least 20 weeks a year with certain employee groups exempt.

5. It ceased to be essentially a reimbursement mechanism.

TABLE 1
Distribution of Employers by Effective UI Tax Rate—2012

Contributions as percent of total wages	Percent of employers
0.00–0.49	21
0.50–0.99	52
1.00–1.49	18
1.50–1.99	6
>1.99	2

Note: U.S. Department of Labor ETA-204 reports, section C.

while individual employers no longer had to maintain their own reserves to pay for benefits. Even then many states decided to maintain a financing structure built on the concept of maintaining individual employer accounts even though benefits are not paid from these accounts. The primary difficulty then became converting a system that was based on individual accounts into one that is based on a pooled fund from which all benefits are paid.

RELEVANCE OF EXPERIENCE RATING UI TAXES TODAY

Before offering remedies to the current system it is necessary to address the importance of continuing this unique system of tax rate assignment. Despite its controversial beginning, experience rating is now firmly entrenched in the UI system and is widely supported by the employer community. Although somewhat dated, a large amount of research exists on the effects of varying an employer's UI tax rate according to that employer's unemployment risk. Almost all of these studies have found that altering the degree of experience rating has a significant impact on temporary cyclical and seasonal layoffs (Levine 1997).⁶

At the same time, it must be recognized that, while the UI tax seems to be a rather small cost factor for most employers, in some post-recession years we still find over 25 percent of employers facing annual UI taxes greater than 1.0 percent of their total wages (Table 1). This range of costs is wide enough that the choice of methodology for distributing these costs is important. In addition, changing the system in individual states seems less of a political challenge than changing the system at the federal level. Thus, this paper focuses on improving the current experience rating system rather than eliminating it altogether.

PROBLEMS WITH THE CURRENT METHODS OF EXPERIENCE RATING

Employers fund the UI systems in all states (three states have small employee contributions). Tax rates are assigned annually to individual employers and these rates are applied to wages up

⁶ In fact, there appears to be only one major research study that found no significant difference between a flat-rated UI program and an experience-rated one (Betcherman and Leckie 1995).

TABLE 2
Existing Experience Rating Systems

Experience rating system	Individual employer's tax rate based on	No. of states	Problem issues
Reserve ratio	Cumulative contributions minus cumulative benefits assigned, divided by avg. taxable payroll over history of firm	33	✓ Discourages employment increases ✓ Inhibits solvency ✓ Requires employer benefit assignment
Benefit ratio	Employer's benefit charges over previous three-year period, divided by taxable payroll over same period	17	✓ Requires employer benefit assignment ✓ Inaccurate benefit assignment ✓ Administrative burden ✓ Employer abuse
Benefit wage ratio	Amount of wages paid to former employees who collect UI benefits and total state benefits paid	2	✓ Requires assignment of benefit wages ✓ Administrative burden
Payroll decline	Percentage decline in quarterly payroll	1	✓ Measures decreases in wages only

to a statutory limit. Federal law essentially requires that these tax rates be based primarily on factors related to an employer's unemployment risk (experience rating). Four distinct types of experience rating methodologies (Table 2) are used by states, with almost all states using either Reserve Ratio or Benefit Ratio.

RESERVE RATIO

Now, almost 70 years after the elimination of individual reserve systems, the majority of states are still using this Reserve Ratio experience rating methodology for awarding reductions and increases in an employer's UI tax rate.⁷ In this system the cumulative benefits paid to former employees is subtracted from the amount of contributions paid by the employer for its entire existence and the difference (the balance) is then divided by the employer's taxable wages.

$$\text{Reserve ratio} = 100 \text{ percent} \times \text{employer reserve/average taxable wages}$$

7. The number of states using the Reserve Ratio system peaked at 33 in 1958. Since then, a few states have switched to Benefit Ratio, leaving 29 states (plus two Benefit Ratio states that use Reserve Ratio elements). Comparison of State Unemployment Insurance Laws, 2017, U.S. Department of Labor.

where, $\text{employer reserve} = \text{cumulative contributions} - \text{cumulative benefit charges}$, average taxable wages = average over a fixed number of years (usually three).

The employer's reserve ratio is applied to the tax schedule for the upcoming year to determine the rate for the year. Employers with large reserve ratios are awarded lower tax rates, those with lower or negative reserve ratios are assigned higher tax rates. The basis for this calculation is still rooted in the individual firm accounting system that prevailed before the national program enactment instead of a more rational pooled fund approach. This creates an apparent disconnect between the idea of experience rating reflected in Wisconsin-type laws (i.e., rate reductions based on individual employer account balances) and the language in FUTA (i.e., factors related to unemployment risk). Early on, the Bureau of Unemployment Compensation (1938, 69) recognized this, stating "It is unnecessary and undesirable that the amount of benefits charged against an employer be subtracted from his contributions to determine a balance;" and "The amount of contributions paid by an employer is not a fair standard upon which to measure benefits charged."

It is somewhat of a mystery why this method was certified and became widely accepted in the early days of the program. At the time that the Social Security Board first certified state laws (1940), many states already had in place either systems with individual accounts or pooled systems with Reserve Ratio experience rating. The Board was apparently reluctant to reject those existing systems. New Hampshire was the first (1935) to set up a Reserve Ratio plan. A 1946 Social Security Board legislative history (Social Security Board 1946, 17) states, "In the absence of any precise principles of experience rating any new proposal which was consistent with that plan [New Hampshire's] has been considered to be both legal and equitable." A 1952 Experience Rating Digest states, "Early certifications of reserve ratio laws were apparently made on the basis that the use of required contributions in the formula did not so impair the benefit factor as to make the employer's experience with benefits no longer the basic determinant of his rate" (Office of the Solicitor 1952, 21). In 1943, the Social Security Board, without explanation, recognized reserve balances as a factor directly related to unemployment risk (Social Security Administration 2019).

While the Reserve Ratio methodology does have a number of advocates, there are several serious drawbacks which make it ill-suited as a methodology to distribute UI tax rates in a pooled fund system:

- A reserve ratio is a poor measure of current unemployment risk, because it relies on using the amount of past employer tax payments, as well as a long history of benefit payments, which may have little correlation to an employer's current layoff experience.
- There is no formulaic relationship between an employer's reserve ratio and the individual tax rate that should be assigned to this employer. When pooled funds were created in these states the relationship between the individual employers' reserve amounts and the amount in the state's pooled trust fund was broken since there are many items that affect the state fund balance that do not affect individual employer balances (e.g., benefits not assigned to individual employers' reserve accounts). So, states using this method are at a loss to determine reasonable solvency adjustments to employer tax rates in order to build up the state

trust fund. These states are continually having to make legislative adjustments in their tax structures. For example, following this past recession, almost half of the Reserve Ratio states (16 states) made significant financing changes, such as increasing the taxable wage base or adding a new tax schedule, while only four Benefit Ratio states made any such changes (Office of Unemployment Insurance 2019a).

- A Reserve Ratio methodology creates incentives that discourage employment growth. If an employer increases employment, the employer's taxable wages increase. Because the amount of taxable wages is in the denominator of the reserve ratio formula, the employer's reserve ratio declines and the employer's tax rate potentially increases. This effect may persist for several years and is a disincentive to hiring. This is the exact opposite incentive that an experience-rated UI tax is intended to have.

BENEFIT RATIO

Early on, several states recognized the problems with the Reserve Ratio method and immediately adopted a Benefit Ratio experience rating methodology. The number of states using this method has increased from five in 1958 to 17 in 2017 (two of these use the reserve ratio as a secondary measure) (Office of Unemployment Insurance 2019a). Benefit Ratio is now the second most popular experience rating method. The general formula for computing an employer's experience factor in this method is:

$$\text{Benefit ratio} = 100 \text{ percent} \times (\text{sum of benefit charges over } X \text{ yrs.}) / (\text{sum of taxable wages over } X \text{ yrs.})$$

where, *X* is the number of years in the benefit ratio computation (usually 3–5).

Employers with low benefit ratios are awarded lower tax rates while those with higher ratios are assigned higher rates. To derive tax rates for individual employers, states start by calculating the benefit ratio for each individual employer. Then statewide percentages, to cover socialized costs and solvency adjustments, are added in to arrive at a final tax rate, subject to the application of the desired minimum and maximum tax rates.

Since a benefit ratio does not include employer contributions and employer balances, it would appear to be a more accurate measure of unemployment risk than a reserve ratio. Also, unlike the reserve ratio, for employers not paying the minimum or maximum tax rates, there is an incentive to increase employment because that increases taxable wages and reduces the benefit ratio.

However, this method, like the Reserve Ratio method, relies on the process of assigning the benefits paid to former employees back to the presumably responsible employer, which is the cause of many of its serious weaknesses:

- The unequal treatment of employers that arises in the Benefit Ratio system by assigning a cost that to a large degree is not in the control of the employer. Due to changes in the

working environment and a long-term upward trend in UI duration, employers generally have less control over the length of unemployment benefits for laid-off employees than in the past. Employers have some control over the length of temporary layoffs, but temporary layoffs are a smaller proportion of overall unemployment in recessionary periods than in the past. In 2008, the number of unemployed on temporary layoff was approximately 13 percent of all unemployed, compared with 20 percent in 1982 (Bureau of Labor Statistics 2019a). Fujita (2016) demonstrates that, although use of temporary layoffs is still quite high, the share of temporary layoffs has been declining since at least the 1980s. This trend is probably related to the fact that manufacturing industries make above-average use of temporary layoffs (Bednarzik 1983) and the manufacturing share of employment has declined from 36 percent in 1939 to ten percent in 2016 (Bureau of Labor Statistics 2019b).

- Assigned benefits are a poor measure of unemployment risk since a majority of employers will have no layoffs during most expansion years causing many employers to have zero benefit ratios. The share of employers being assigned the minimum tax rate in Benefit Ratio states has averaged about 55 percent since 2009 (Office of Unemployment Insurance 2019b). With so many employers necessarily being assigned the same tax rate in this method the rationale for assigning individual tax rates is defeated.
- The reliance on assigning benefits to individual employers assumes that benefit costs can in fact be accurately and easily attributed to these employers. In reality, there is a good deal of difficulty in this process. For example, federal law does not provide a standard to determine which benefits may be assigned (charged) or non-charged to employers. Also, when a claimant has multiple recent employers, a variety of somewhat arbitrary methods are used to assign benefits to the appropriate employer or employers. In 2016, an estimated 38 percent of claimants had multiple employers in their base periods and an unknown number had a separating employer who was not a base period employer.⁸
- Benefit charging can create an adversarial relationship between employers and employees as employers try to reduce their tax rates. Employers have become more aggressive over time in challenging claims, often using payroll service companies to do so. Research (Chasanov and Cubanski 1995) and anecdotal (DeParle 2010; Whoriskey 2009) evidence indicates that some employers challenge an excessive number of claims. Over time, the proportion of claims disputed for misconduct issues has increased, from eight percent in the 1970s to 16 percent in 2016 (Office of Unemployment Insurance 2019c). The rate at which employers appeal initial decisions has also increased over time, from two percent in the 1970s to over ten percent in 2016 (Office of Unemployment Insurance 2019c). Although it is incumbent on the state agency to make correct benefit eligibility decisions, it is very likely that some eligible workers lose benefits.
- There are significant administrative burdens on states and employers as a result of having to make individual benefit assignments to employers.

8. The base period is the time period (usually the first four of the last five completed quarters) used to determine the claimant's eligibility for benefits.

ALTERNATIVE METHODS OF UI EXPERIENCE RATING

To address the problems with current methods of experience rating, this paper provides two new alternative methods, both of which are consistent with current federal law.⁹ These methods are structured to fit a pooled system of financing and to provide ease of understanding and more relevant and realistic employment incentives for employers.

While these methods are not currently in use, each one provides options for emphasizing additional factors in unemployment risk as well as avoiding the need for assigning benefits paid back to individual employers. In fact, the problems with benefit assignment, cited above, were recognized early on in the program and even caused the U.S. Department of Labor to recommend a method very similar to one offered here as the preferred experience rating method in its 1950 model legislation issuance (Unemployment Insurance Service 1950).

These proposed methods would not change the overall level of tax rates in a state. Only the distribution of tax rates would be impacted—which employers receive the lowest tax rates and which ones are assigned the highest rates. The methods are structured to assign those employers with the highest employment growth rates the lowest UI tax rates.

EMPLOYMENT VARIATION

Keeping the above-mentioned goals and the issues with the current methods in mind, the first alternative method was constructed to place the focus entirely on an individual employer's measurable behavior. This would be the employer's decisions regarding hiring and laying off employees. Rather than accounting for the UI benefits paid to past employees, or for tax contributions, employers would be graded on their overall employment change.

Using employment variation as the experience factor to assign reductions and increases in employers' UI tax rates would place the incentive on the original purpose of experience rating—employment stability—and would still reflect layoff decisions as well as increasing employment.

This employment variation measure would be calculated by first computing the employment change for each quarter over a three- to five-year period and dividing by the average employment over the same time period. The quarterly change percentages would then be averaged over the chosen time period. The quarterly employment change percentage would be calculated as follows:

$$\text{Employment change percentage } (t) = 100 \text{ percent} \times (\text{employment } (t) - \text{employment } (t - 1)) / \text{average employment}$$

9. Each of these methods would meet the requirements of federal law and thus would not put the employer's additional FUTA credit at risk.

where, average employment = average of quarterly employment levels over 12 quarters, t denotes the current quarter, $t-1$ the prior quarter.

Due to seasonal shutdowns and other temporary suspensions of business operations, many active employers may show zero employment in some quarters. Zero employment in a quarter prevents computation of a growth rate from that quarter because division by zero would be required. To correct for this potential problem, each quarterly employment change is divided by the average employment level over the chosen time period.

One other potential weakness of the employment variation measure described above is that employers with fluctuating employment, such as seasonal employers, may have a zero average employment change over time because each employment decrease is matched by an increase.¹⁰ These employers would have the same average employment change as employers that maintained constant employment, even though the former group likely produces more costs to the system. To address this issue a greater weight is given to employment decreases relative to employment increases. The greater the weight on employment reductions, the greater the ability of this method to reward employment increases. The employment variation index is then:

$$\text{Employment variation index} = ((\text{sum of positive change percentages}) + W \times (\text{sum of negative change percentages}))/12$$

where, W is the weighting factor applied to negative employment changes.

The data for this calculation is readily available to each state through the Quarterly Census of Employment and Wages reporting system. A state could opt to use a full-time-equivalent employment measure to avoid the incentive to substitute part-time for full-time employment, but this would create an additional reporting burden on employers in most states. Although the index does need to be based on a multiple of four quarters to avoid seasonal fluctuations, it could be computed using any number of years. Using fewer than three years would make individual employer tax rates more responsive to changes in employer experience but is not allowed under federal law. Using more than three years would make employer rates more stable, but using longer periods makes the measure less applicable to current unemployment risk.

Table 3 shows what the employment variation index calculation looks like for a hypothetical employer.

Table 4 illustrates how several employers with the same average employment, but different employment patterns would be treated under this method.

Employers with the largest relative increases in employment would receive the lowest UI tax rates, while those with the largest relative decreases would receive the highest rates.¹¹

10. Note that Alaska's Payroll Decline system does not have this problem because only declines are used.

11. This method is essentially an extension of the Payroll Decline method. The main differences are that this index uses employment instead of wages and that increases are considered as well as declines.

TABLE 3
Hypothetical Calculation of Employment Variation Index

	Average employment	Employment change from prior quarter	Employment change percentage (%)	Weighted Empl. change percentage (2× negatives) (%)
Quarter 0	88			
Quarter 1	94	6	5.96	5.96
Quarter 2	91	-3	-2.98	-5.96
Quarter 3	96	5	4.97	4.97
Quarter 4	100	4	3.97	3.97
Quarter 5	100	0	0.00	0.00
Quarter 6	103	3	2.98	2.98
Quarter 7	96	-7	-6.95	-13.91
Quarter 8	100	4	3.97	3.97
Quarter 9	106	6	5.96	5.96
Quarter 10	101	-5	-4.97	-9.93
Quarter 11	108	7	6.95	6.95
Quarter 12	113	5	4.97	4.97

Notes: Average employment = $(88 + \dots + 113)/12 = 101$.

Sum of weighted empl. change percentages = $(5.96\% + -5.96\% + \dots + 4.97\%) = 9.93\%$.

Employment variation index = $9.93\%/12 = +0.83\%$.

Using this formula, an increase in employment would result in a higher employment variation index, which could potentially lead to a lower tax rate, so that the marginal cost of hiring an individual could be significantly reduced.

Various studies show that reductions in payroll taxes result in increases in hiring and employment. For example, Anderson and Meyer (2000) show that after Washington State went from a flat UI tax to an experience-rated tax, employment increased for employers with a tax cut and decreased for employers with a tax increase. Cappelli (2011) reviewed several studies that generally showed that hiring incentive programs, both broad-based and targeted, have resulted in employment increases. The Congressional Budget Office (Yang 2010) estimated that a payroll tax cut targeted to employers who increase employment would cause an increase in employment of eight to 18 workers per million dollars of tax cuts. This translates to a 0.04–0.09 percent increase in employment for a potential 0.1 percent tax rate cut.

A primary motivation for this method is to reward employers for employment increases, which the current systems, primarily the Reserve Ratio system, initially penalize with higher tax rates. In this method, those employers with the highest rates of hiring would now receive the lowest tax rates, thereby providing a strong incentive for employment increases. Those employers that have employment decreases or fluctuations in employment would be penalized under this system. Employers with the highest employment variation indexes, those with net increases in employment, would receive the lowest UI tax rates, while those with the lowest employment variation indexes, those employers with the largest net decreases in employment, would receive the highest rates.

TABLE 4
Hypothetical Calculation of Employment Variation Index for Various Employers

	Employer 1 Constant employment	Employer 2 Steady growth	Employer 3 Steady decline	Employer 4 Seasonal employment	Employer 5 Fluctuating employment
Quarter 0	100	87	113	200	130
Quarter 1	100	89	111	200	70
Quarter 2	100	91	109	0	130
Quarter 3	100	93	107	0	70
Quarter 4	100	95	105	200	130
Quarter 5	100	97	103	200	70
Quarter 6	100	99	101	0	130
Quarter 7	100	101	99	0	70
Quarter 8	100	103	97	200	130
Quarter 9	100	105	95	200	70
Quarter 10	100	107	93	0	130
Quarter 11	100	109	91	0	70
Quarter 12	100	111	89	200	130
Average employment	100	100	100	100	100
Employment variation index	0.00%	2.00%	-4.00%	-50.00%	-30.00%

Note: The data in this table represents the number of workers in each quarter. The tax rates assigned to these hypothetical employers would depend on their ranking among all employers and on the state tax schedule.

Focusing the tax on employment rather than the duration of unemployment, over which employers have little control, makes the program more relevant to employer decisions. Not only would this method improve the incentives facing employers, it would not require the documentation of hiring and retention that has been part of almost all of the past hiring incentive programs.¹²

Use of this index would still incorporate a measure of unemployment risk into experience rating to the extent that employment declines are associated with increased layoffs and employment increases reduce the probability of layoffs occurring.

Once the employment variation indexes have been calculated, a state would undertake a similar process to that of almost any insurance company's yearly premium assignment to derive an individual tax rate for an employer.¹³ First, an overall financing rate would be calculated to meet expected benefit payments based on the average total benefits the state has paid out in the last several years. Then, employers would be ranked by their employment variation indexes. Finally, individual or group increases and decreases from

12. For example, the Work Opportunity Tax Credit.

13. In 2018, there were also eight states that used this methodology to calculate an individual employer's UI tax rate after applying one of the existing experience rating methodologies.

the financing rate would be assigned based on that ranking such that the system still generates the desired financing amount. For any employer, then, the tax rate depends on the employer's ranking among all employers and on the state rate schedule for the year.

Another advantage of this method over many of the existing systems is the greater ease with which employers could calculate the expected change in taxes for any employment change. The employer would make the calculation as though all other employers would not change employment and only that employer's ranking would change. If, in fact, all other employers changed employment in the same way, the individual employer's ranking and tax rate would remain the same. In this case, the employer's tax rate would still be higher or lower than if they did not change employment, so the calculation is still valid.

It is important to note that this method would still allocate the costs of the program to those employers producing the highest costs to the system since those employers creating the most layoffs would still likely be assigned the highest tax rates. This is true, however, in any of the existing experience rating methodologies. Employers in declining industries and individual employers with continued large number of layoffs and falling employment are assigned the highest tax rates whether based on reserve ratio, benefit ratio, or employment variation index.

For most states, there would be significant administrative cost savings when implementing this new type of experience rating methodology. Although some states may not currently include employment in their tax systems, employment at the employer level is currently reported to the Bureau of Labor Statistics under the Quarterly Census of Employment and Wages program, so it should be a relatively simple matter to capture this data in the state's tax system. Quarterly average employment would be the average of the three monthly employment levels for the weeks of the 12th of each month. Any cost associated with adding this data element would be small compared to the cost savings from eliminating the task of assigning benefits paid back to individual employers.

A possible negative aspect of the Employment Variation method is that employers could replace one group of workers with another (e.g., laying off high-wage workers and hiring lower wage workers) without penalty, whereas there would be a penalty for this under benefit charging systems. However, there still would be a tax incentive to just do the hiring without the layoffs.

There may be some concern that, in moving away from the Reserve Ratio methodology, employers would no longer receive credit for having paid into the system, since those employers with large positive reserve balances might no longer receive the lowest tax rates. However, eliminating the idea that an employer who has paid enough into the UI system to have a large balance should now be allowed to make cost-free layoffs is an important justification for adopting the new method.

PAYROLL VARIATION

A second alternative experience rating measure would be calculated in the same way as the employment variation index except that changes in total wages would be used instead of

changes in employment. In this method the focus is entirely on an employer's decision to change the level of their payroll by either changing the number of employees or the pay level of current employees.

$$\text{Payroll change percentage } (t) = 100 \text{ percent} \times \frac{(\text{total wages } (t) - \text{total wages } (t - 1))}{\text{average total wages}}$$

where, average total wages = the average of the quarterly total wage levels over 12 quarters, t denotes the current quarter, $t-1$ the prior quarter.

$$\text{Payroll variation index} = ((\text{sum of positive change percentages}) + W \times (\text{sum of negative change percentages}))/12$$

where, W is the weight applied to negative payroll changes.

After ranking employers by this measure, those employers with the largest relative increases in payroll would be assigned the lowest UI tax rates, while those with the largest relative decreases in payroll would receive the highest rates. This would be similar to the existing Payroll Decline system in Alaska, except that in that system payroll increases are not used at all in the calculation.

The incentives under this system would be similar to the Employment Variation method. Employers would still have employment stabilization and hiring incentives, but employers would also be rewarded for wage increases or for replacing lower-wage jobs with higher-wage jobs and would be penalized for the opposite behavior. Any incentive to substitute part-time for full-time employment would be eliminated. Payroll Variation may be somewhat easier to implement than Employment Variation because almost all states include employer wage reporting in their UI tax systems. On the contrary, there may need to be adjustments to the definition of wages for such things as year-end bonuses, which would cause an artificial increase in payroll followed by a decrease.

SIMULATION ANALYSIS OF THE EMPLOYMENT VARIATION METHOD

To understand and validate the impact of implementing the Employment Variation method of experience rating, a simulation analysis was run comparing that method to an existing methodology. In this exercise, data from the state of Washington for July 2010–June 2014 was used.¹⁴

14. Staff of the Washington Employment Security Division, led by Jeff Robinson, ran all simulations.

Washington is a Benefit Ratio experience-rating state that assigns individual employers to tax rate intervals based on the ratio of benefits assigned over the previous four years to the employer's taxable wages. In order to measure the impact on employer tax rates of applying the alternative method it was necessary to convert Washington's existing distribution of employer tax rates into one that would be applied in the same way as the alternative experience rating methodology, so that the difference in tax rate assignment would be due only to the type of experience rating method employed and to no other factor. In this simulation the same tax rates were used in both methodologies, with the only difference being to which employers the rates would be assigned.

A tax structure was created in which, from a single average tax rate, increases and decreases were distributed into 40 separate tax intervals (the tax rates used were the actual Washington rates for those tax classes). The average tax rate for the simulated Benefit Ratio array allocation was 2.45 percent. A specified portion of employers—2.5 percent of taxable wages—was placed in each tax rate interval. The first step in the simulation was to rank Washington employers' benefit ratios and then assign employers accounting for 2.5 percent of taxable wages to each of the 40 tax classes.

The Employment Variation method was also run using the same distribution of tax rates so that there would be a reasonable comparison between the two methods. For the simulated Employment Variation method, an employment variation index was computed for each employer, using data for the same four years as the benefit ratio calculation. For this simulation, a weight of 2.0 on negative employment change percentages was used. Because Washington uses 16 quarters in the calculation of an employer's benefit ratio for its current system, both simulations were based on data for the 16 quarters ending June 30, 2014. Employers were ranked according to the experience factors, and 2.5 percent of taxable wages were assigned to each tax class and tax rate. Thus, the taxable wage distribution was identical between experience rating methods and the average tax rate (as a percent of total wages) for the Employment Variation method was equal to the average rate for the Benefit Ratio system (1.41 percent of total wages). The difference between the Employment Variation method and the simulated Benefit Ratio system was then the ranking of employers and the assignment of tax rates to individual employers. It should be noted that the Employment Variation calculations do not reflect behavioral effects that may occur under this method.

The purpose of the simulations was to determine how the distribution of tax rates changed between the Benefit Ratio methodology and the Employment Variation methodology. In particular, we compared average tax rates by industry and by employer size between the two methodologies to find which groups of employers would have higher or lower taxes under the new methodology.

Table 5 shows the distribution of Washington employers by their employment variation indexes and by their benefit ratios for the period studied—the 16 quarters ending June 2014. This time period may not be the most representative time period since the average unemployment rate was 8.0 percent, versus Washington's 20-year average unemployment rate of 6.4 percent, and the last three years of the period featured overall employment growth as the

TABLE 5
Distribution of Employers Under the Employment Variation and Benefit Ratio Methodologies

Employment variation distribution		Benefit ratio distribution	
Employment variation index (%)	Percent of employers (%)	Benefit ratio (%)	Percent of employers (%)
>10	4.2	0.0	48.7
5% to 10	8.9	0.0–0.5	12.3
0% to 5	5.7	0.5–1.0	8.0
–5% to 0	38.7	1.0–1.5	6.0
–10% to –5	14.3	1.5–2.0	4.3
–15% to –10	8.8	2.0–3.0	5.8
–20% to –15	6.5	3.0–4.0	3.7
–30% to –20	6.0	4.0–5.0	2.4
<–30	7.0	>5.0	8.8

Note: The Employment Variation distribution is based on the calculation of the employment variation index described in the text and illustrated in Table 3.

economy recovered from the Great Recession. However, it does provide an illustration of the application of the methodology to an actual situation.

Table 6 describes the shift in employer rankings going from Benefit Ratio to the simulated Employment Variation system. This table was created by ranking employers by experience factor and assigning tax classes for both Employment Variation and Benefit Ratio as described above. We then measured the change in tax class between Benefit Ratio and Employment Variation.

Employers accounting for just three percent of taxable wages had approximately the same ranking (i.e., fell into the same tax class) under the Employment Variation method as under the Benefit Ratio method. Looking at small shifts in ranking, just over one quarter of taxable wages moved five tax classes or fewer in either direction under the Employment Variation measures. Employers accounting for more than half of taxable wages changed their ranking by more than ten tax classes (out of 40).

These results appear to show that there is a significant difference between employer rankings based on benefit ratios and rankings based on employment variation indexes. Since Employment Variation focuses on unemployment risk, not benefit reimbursement, all employers with employment growth would move to the lowest tax intervals rather than just those with low benefit charges. In the Benefit Ratio simulation, a significant percentage of employers (taxable wages) were clustered at zero benefit ratios, which not only led to many employers receiving the same tax rate, but also made some of the tax class assignments arbitrary under Benefit Ratio.

The Employment Variation method also had considerable effects on different groups of employers. Table 7 shows average effective tax rates (contributions as a

TABLE 6
Cumulative Tax Class Shifts From Benefit Ratio to Employment Variation

	Percent of taxable wages (%)
Same tax class	3
±1 class	8
±2 classes	13
±3 classes	17
±4 classes	22
±5 classes	26
±6 classes	31
±7 classes	35
±8 classes	39
±9 classes	43
±10 classes	47

Note: This table is based on the simulations described above.

percent of total wages) by industry for Benefit Ratio and for the Employment Variation method.

There are significant shifts of tax burden among industries. Under the specified tax levels, three industries would experience an average effective tax rate increase of at least 40 percent moving from Benefit Ratio to Employment Variation, while four industries would see a reduction of at least 20 percent. Most notably, the construction industry would experience lower rates due to the credit given for hiring more employees, while Retail Trade and Information Services would find higher rates in the new methodology since their hiring was not as great relative to the other industries during this period. The redistribution of tax burden would likely cause employment decreases in some industries and employment increases in other industries. It seems likely that overall employment in the economy would remain about the same, however.

We also simulated the effect on employers of different sizes (number of employees) in moving from Benefit Ratio to Employment Variation. Employment Variation would also significantly reduce the range between the highest (20–49 employees) and lowest (1,000+) average effective tax rates by employer size compared to Benefit Ratio, from 1.55 percent to 0.71 percent. Employment Variation would increase rates for the smallest and largest employers while reducing them for those in the middle. Employers with zero employment in the measurement quarter would now have the highest rates, but employers with 1,000+ employees would still have the lowest rates.

These simulations highlight the fact that some individual employers and groups of employers would experience significant changes in UI tax burden when implementing a new experience rating method. Sharp increases in tax rates, particularly in recessions, could be mitigated by phasing in the new method over two or three years. For example, employer tax rates could be determined by taking a weighted average of the tax rates assigned under the two

TABLE 7
Average Effective Tax Rate Differences between Experience Rating Methods by Industry

	Share of total wages (%)	Average effective rate		Percent difference (%)
		Benefit ratio (%)	Employment variation (%)	
NAICS 11—Agriculture	1.5	3.16	3.66	15.8
NAICS 21—Mining	0.1	2.98	1.65	−44.6
NAICS 23—Construction	5.9	3.06	1.93	−36.9
NAICS 31–33—Manufacturing	13.1	1.30	1.30	0.0
NAICS 42—Wholesale Trade	6.7	1.45	1.17	−19.3
NAICS 44–45—Retail Trade	10.5	1.46	2.17	48.6
NAICS 48–49—Transportation and Warehousing	3.3	1.71	1.49	−12.9
NAICS 51—Information Services	20.9	0.33	0.50	51.5
NAICS 53—Real Estate and Rental Leasing	1.4	2.16	1.64	−24.1
NAICS 54—Professional, Scientific, Technical Services	9.4	1.30	1.12	−13.8
NAICS 55—Management of Companies/Enterprises	0.4	1.12	0.90	−19.6
NAICS 56—Admin., Support, Waste Management Services	4.6	2.73	2.16	−20.9
NAICS 61—Education Services	0.6	1.75	1.93	10.3
NAICS 62—Health Care and Social Assistance	6.9	1.57	1.50	−4.5
NAICS 71—Arts, Entertainment, Recreation	0.9	1.86	1.76	−5.4
NAICS 72—Accommodation and Food Services	4.2	1.74	2.46	41.4
NAICS 81—Other Services	2.1	1.88	1.56	−17.0
All Industries		1.41	1.41	

Note: NAICS 22 (Utilities), 52 (Finance and Insurance), and 92 (Public Administration) are not included in this table—these industries account for 7.6 percent of total wages.

systems until the new method is fully phased in. Implementation could also be delayed in the event of a recession.

CONCLUSION

For most states the methodology used for assigning UI tax rates to employers is one that arose when the program was first established in 1935. Now, more than 80 years later, state UI tax system methodologies have become increasingly outmoded, while at the same time the private insurance industry has developed many innovative risk factors in order to produce more accurate premium calculations. The most common experience rating method, Reserve Ratio, still operates as if each employer had a reserve balance of funds to pay only their employees, even though all states moved to a pooled financing scheme soon after the federal law passed. In addition, almost all states use assigned benefits as a measure of unemployment risk even though this measure is not accurate and has adverse incentives.

This paper highlights the significant problems with the existing UI experience rating methodologies and presents new experience rating methodologies based on risk factors other than reserve balances and assigned benefits. These methods are offered as mechanisms to lower administrative costs and to improve the incentives offered to employers to increase employment in this new economic environment. A simulation analysis is used to illustrate the impact of the new methods on various groups of employers, showing the considerable differences in tax rate distribution that would arise when employment is used as a primary measure in a new methodology. In addition, the adoption of a new experience rating methodology would assuredly bring greater relevance back to this unique and innovative American method of assigning Unemployment Insurance tax rates.

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