

The Higher Wages Tax Credit

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Abstract: In the face of continued low employment, stagnant wages, persistent poverty, and rising inequality, minimum wage increases will likely continue to hold appeal as a policy response. In this paper, I propose a Higher Wages Tax Credit (HWTC) to partially offset the costs imposed by minimum wage increases on firms that employ low-skilled labor. Following a minimum wage increase, the HWTC would provide a tax credit of 50% of the difference between the prior minimum wage and the new minimum wage, for each hour of labor employed; the credit would phase out at wages higher than the minimum wage, and as wage inflation erodes the real cost of higher nominal minimum wages. The HWTC would reduce the incentive for employers to substitute away from low-skilled workers in the face of minimum wage increases, thus mitigating the potential adverse effects of minimum wage increases while simultaneously preserving and possibly enhancing some of the benefits of minimum wage hikes. The credit is also intended to infuse the debate around increasing the minimum wage with a more realistic accounting of the costs and benefits of such a policy by partially transforming minimum wage increases into a more conventional redistributive policy.

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1 The Challenge

Long-term employment declines among less-skilled individuals, stagnant real wages at the bottom of the wage distribution, continuing poverty, rising or persistent wage and income inequality, and the increased conditioning of safety net cash and in-kind support on work have spurred policy changes and debate about how best to increase employment and income from work.

Hiring credits, whether targeted at economically-depressed areas (“place-based”) or disadvantaged individuals or families (“people-based”), have at best a mixed track record with regard to increasing employment.¹ I have elsewhere argued that hiring credits are likely to be most effective when they are triggered by economic slowdowns—workers’ eligibility for credits based on unemployment are less likely to convey a negative signal during downturns, and government expenditures on credits for firms likely to hire anyway are minimized (see Neumark, 2013). The case for hiring credits as a response to longer-term, structural problems of low employment among sub-populations is particularly weak.

The Earned Income Tax Credit (EITC) has a well-established record of increasing employment among the recipients eligible for the most generous benefits—typically less educated single mothers with children (Nichols & Rothstein, 2016). The EITC also helps reduce poverty, because of both the strong work incentives it creates and its effective targeting of low-income families (Neumark & Wascher, 2011). However, the EITC has potentially adverse effects on low-skilled workers without children, perhaps especially low-skilled men, due to the outward labor shift among low-skilled women with children that the credit may cause (Leigh, 2010; Neumark & Wascher, 2011).² The EITC can also discourage labor supply among secondary earners (Kearney & Turner, 2013). Finally, some recent evidence suggests that a more generous EITC may do little to expand employment in local labor markets plagued by insufficient labor demand (Neumark, Asquith, & Bass, 2018). Thus, while the EITC is widely viewed as a very successful program, and one that increases incomes in families with children, it is not a sufficient tool to address the full gamut of problems highlighted above. In fact, the EITC may actually exacerbate some of those problems—for example, by lowering the wages of low-skilled workers who are not eligible for it.

In contrast, a higher minimum wage is a simple tool to raises wages and income from work. While there is debate about how much an increase in the minimum wage reduces the employment or hours of affected workers, it is clear that some workers benefit. Moreover, unlike the EITC (at least as presently structured), a higher minimum wage has the potential to increase wages for low-skilled men.

¹ See Neumark (2013) for a recent review of people-based hiring credits, and Neumark and Simpson (2015) for a recent review of place-based policies.

² Expanding the EITC to solve the latter problem could have the unintended consequence of reducing the beneficial effects on low-skilled women with children.

In recent years, there has been a torrent of state and local minimum wage increases. For example, as of the end of 2017, 30 states (including the District of Columbia) had minimum wages above the \$7.25 federal minimum wage, with an average difference of 26% (Neumark, forthcoming). At the state and local level, California, New York, Seattle, and the District of Columbia have or will soon have a \$15 minimum wage; other localities may follow. Finally, a change in the national political alignment could result in a \$15 national minimum.³

While the effects of minimum wage increases are contested, it is impossible to dismiss the sizeable body of evidence that suggests minimum wage hikes reduce employment among the least skilled (including recent research that addresses criticisms of earlier evidence).⁴ In addition, it is uncontested that higher minimum wages do not target low-income families very well, in part because of the large number of teenagers earning the minimum wage, and in part because poverty is more strongly related to whether or not one works and how many hours one works, rather than low wages (Burkhauser, Couch, & Wittenburg, 1996; Burkhauser & Sabia, 2007).⁵

2 The Policy Proposal: The Higher Wages Tax Credit

In response to this challenge, I propose a Higher Wages Tax Credit (HWTC) to partially offset the costs imposed by minimum wage increases on firms that employ low-skilled labor. In the face of continued low employment, stagnant wages, persistent poverty, and rising inequality, I make the following assumptions:

1. Higher—possibly much higher—minimum wages will likely continue to hold appeal as a policy response.
2. There are potential adverse effects of minimum wage increases that can at least partially undermine the possible benefits of such policies.
3. There is the potential to make minimum wage increases more effective.

The HWTC attempts to mitigate the adverse responses to minimum wages increases, while simultaneously preserving and potentially enhancing some of the benefits of higher minimum wage policies. The HWTC is also intended to infuse the policy debate around increasing the minimum wage with a more realistic accounting of the costs and benefits of such a policy—it does so by partially transforming a higher minimum wage policy into a more conventional redistributive policy by shifting part of the cost of higher minimum wages to those with the highest incomes, via the income tax system.

³ The Democratic Party adopted a \$15 national minimum wage in its platform for the 2016 election, and the policy was an important component of Senator Bernie Sanders's economic agenda during his campaign for the nomination.

⁴ See the review in Neumark (forthcoming).

⁵ For example, based on 2014 Current Population Survey data, 57% of poor families with heads of household aged 18 to 64 have no workers (Neumark, 2016).

Some argue that a higher minimum wage is needed to offset the negative effects on market wages of the increase in labor supply induced by the EITC, which might be viewed as an argument against the HWTC. Such a narrative, however, is flawed—in its simplest form, if we raise the minimum wage enough to offset the reduction in the market wage from the EITC, we will also kill off the employment gains from the EITC (Neumark & Wascher, 2011). Thus, combining a higher minimum wage (to offset the negative effects of the EITC on wages) with the HWTC (to mitigate the job losses from a higher minimum wage) may better align the combined effects of the EITC and the minimum wage.

The HWTC would use government expenditures to provide a tax credit that partially offsets the costs of minimum wage increases imposed on firms that employ low-skilled labor. Presumably, the credit would be financed by the level of government that chooses to impose a higher minimum wage.

The credit would work as follows: In the year after a minimum wage increase, the HWTC would provide a tax credit, paid to businesses, of 50% of the difference between the average wage of affected workers below the new minimum wage at the time of the increase and the new minimum wage, for each hour of labor employed.⁶

Provision 1: The tax credit would apply fully to workers employed at the new minimum wage and would phase out at a rate of 50% for wages above the new minimum wage. For example, if the minimum wage increases from \$8 to \$10, and the average wage of workers paid between \$8 and \$10 per hour was \$9, the credit for each hour worked would equal 50 cents for workers employed at \$10 per hour, 25 cents for workers employed at \$11 per hour, and zero for workers employed at \$12 per hour higher.

Rationale: Tying the credit to the difference between the new minimum wage and the average wage of directly-affected workers ensures that the credit would be larger where the new minimum wage increases low-wage labor costs more, and smaller where the new minimum wage increases low-wage labor costs less. The phase-out of the HWTC would avoid a large discontinuity in the hourly cost of labor to firms at the minimum wage, which could otherwise discourage firms from raising wages above the minimum or hiring workers at wages just above the minimum.

⁶ There is nothing sacred about the 50% figure. It is chosen to be sizable, but to leave part of the responsibility for higher wages on employers of low-skilled labor.

Provision 2: In years after a minimum wage increase, the credit would be reduced by the overall rate of labor cost inflation, as measured by the Average Hourly Earnings (AHE) series for private nonfarm payrolls.^{7,8}

For example, suppose a state increases its minimum wage to \$10 in 2019, and that increase results in a maximum credit, in 2019, of \$1 (assuming an average wage of affected workers of \$8). If the AHE increases by 5% from 2019 to 2020, the maximum HWTC in 2020 would be \$.95 (5% less than the initial \$1 credit) and would phase out at a 50% rate from there.

Rationale: The adjustment of the HWTC for inflation ensures that the credit would diminish as general wage inflation eroded the value of the nominal minimum wage.

Provision 3: In the event that a jurisdiction with a credit already in place increases its minimum wage again, the maximum credit paid at the new minimum wage would reset to 50% of the difference between the new minimum wage and the average wage of affected workers, plus the prior credit based on Provision 2.

For example, suppose a state increases its minimum wage from \$8 to \$10 in year 2019, with the average wage of affected workers equal to \$8, and from \$10 to \$12 in 2021, with the average wage of affected workers equal to \$10. The maximum credit in 2021 would be \$1 (based on the \$2 increase in 2021), plus the \$1 credit for the \$2 increase in 2019, adjusted downward for cumulative wage inflation in the AHE from 2019 to 2021.⁹

Rationale: The adjustment of the HWTC for new minimum wage increases ensures that the HWTC would respond to new increases but remain simple to compute as jurisdictions raise their minimum wages at different frequencies (or index their minimum wages).

Provision 4: The credit would apply only to workers with at most a high school degree.

Rationale: The application of the credit only to workers with at most a high school degree increases the likelihood that the credit would be paid for a worker more likely to be hired at a wage near the old minimum wage than at a wage near the new minimum wage. This is intended as a simple mechanism to reduce the extent to which the credit is large relative to the difference between the new minimum wage and the wage a worker would otherwise be paid. This provision could have the added benefit of helping

⁷ See Bureau of Labor Statistics (n.d.a.).

⁸ Presumably the HWTC would be adjusted once per year, based on measured wage inflation up to a recent prior date for which data are available. There are not reliable data on wage inflation at the city level, so it would be necessary to use the state-level data.

⁹ The phase-out rate could be adjusted downward as the credit gets larger, to avoid a larger kink in the relationship between wages and the credit, but this would increase the cost of the HWTC by extending the credit higher up in the wage distribution.

mitigate the costs of a higher minimum wage for workers more likely to be in families with lower incomes (explored below), and hence could improve targeting of the HWTC and perhaps induce some substitution towards these workers. On the other hand, policymakers might choose to forego this provision because there are some more educated workers who earn low wages.

For example, when the minimum wage goes from \$8 to \$10, a current worker or a new hire might, absent the minimum wage, have been paid \$9.75. If they now earn \$10—the new minimum wage—the increase in cost to employers is only \$.25 per hour, but the credit would pay \$1. In principle, the credit could be based on a current employee's prior wage, or the prior wage at a previous employer for a new hire (if previously employed). That, however, is administratively complex and infeasible for newly-hired workers not working recently. The application of the credit to those with at most a high school degree is a simple way to help ensure that the credit would be paid for workers whose wages are increased more because of the higher minimum wage.¹⁰

Provision 5: The tax credit would be either fully refundable or could be carried over to future years.

Rationale: The refundability of the HWTC, and the ability to carry it forward, would help ensure that the HWTC remains valuable to firms even during cyclical or firm-specific downturns that reduce taxable income. (This does, though, make the credit more expensive.)

Provision 6: The government expenditure to finance the HWTC would be at the level of the jurisdiction at which the minimum wage is being increased.

Rationale: Financing the HWTC at the level of the jurisdiction at which the minimum wage is being increased makes for a tighter link in policy discussion and decisions between the costs of minimum wage increases and taxpayers' willingness to pay for redistribution.

3 Advantages, Disadvantages, and Costs

3.1 Advantages

- The key advantage of the HWTC is that it would reduce the incentive for employers to substitute away from low-skilled workers in the face of minimum wage increases. While the evidence on the employment effect of minimum wage

¹⁰ One could also have a less generous credit—rather than no credit—for more educated workers. Minorities and women are also paid lower wages. But it would likely be illegal to base the credit (or the credit amount) on race or gender.

hikes is contested, there is a good deal of evidence pointing to net job loss among the less skilled. There is also compelling evidence of labor-labor substitution so that even if net changes are small, the least skilled among the affected workers suffer job loss.¹¹

Even if one views the evidence on the employment effects of the modest minimum wage increases the United States has experienced in the past as inconclusive, there is a much greater likelihood that the larger minimum wage increases now being implemented (and contemplated) could have more deleterious employment effects. With a much higher minimum wage, a far greater share of workers is affected, which can make it harder for firms to implement other adjustments that could mitigate employment effects—such as reducing benefits, training, or customer service, or increasing prices.¹² The HWTC would reduce the extent to which higher minimum wages increase the cost of the least skilled workers, reducing the incentive for employers to substitute away from these workers.

- The HWTC would mitigate these adverse effects of higher minimum wages without reducing the payment of the higher legislated wage levels to employees. This helps preserve a benefit perceived by some minimum wage advocates—that a higher wage increases the dignity of workers. That is, as far as workers are concerned, the higher minimum wage—coupled with the HWTC moderating the disemployment effect—would increase the number of people who work and increase workers’ take-home pay from working.
- Some argue that a higher minimum wage is needed to offset the negative effects on market wages of the increase in labor supply induced by the EITC. As I discuss above, this argument is flawed—combining a higher minimum wage (to offset the negative effects of the EITC on wages) with the HWTC (to mitigate the job loss from a higher minimum wage) might better align the combined effects of the EITC and the minimum wage.
- Higher minimum wages can increase prices. There is some evidence that these price increases are regressive because minimum wages are more likely to increase prices of goods and services bought by lower income families (MaCurdy, 2015). Because the HWTC would lessen cost increases for firms, it would also mitigate price increases in industries that use low-skilled labor.
- The minimum wage is, in part, a response to widening inequality. Hence, at its core, the minimum wage is a redistributive policy. Most redistributive policies transfer money from high-income families to low-income families, via the tax

¹¹ See Neumark (2018) for a discussion of the literature.

¹² For evidence from Seattle’s high minimum wage, see Jardim et al. (2017).

system. The minimum wage, instead, transfers money from owners of businesses that employ minimum wage workers (and from others, like those who pay higher prices) to minimum wage workers and their families.¹³ We have no information on the family incomes of the owners of businesses who employ minimum wage workers, but there is good reason to believe that many of them do not have high incomes. Transferring some of the financial costs of higher minimum wages to taxpayers will do more to redistribute income from high-income families, which pay the most taxes, to low-income families. As an example, the HWTC would shift some of the costs of higher minimum wages from the owners of child care centers and diners to investment bankers, doctors, and lawyers. This is how other redistributive policies, such as the EITC, operate.

- The HWTC might generate more-reasoned debate about higher minimum wages by making it clearer to voters and policymakers that higher minimum wages do impose some costs. Ideally, the HWTC would shift some of the debate about minimum wages to our willingness to redistribute income through the tax system, as we do with other policies targeting poverty and inequality. The HWTC would help present policymakers and voters with more accurate comparisons of the costs of alternative redistributive policies—this may lead policymakers to focus on identifying the policy that is the most effective at accomplishing redistributive (and other) goals, rather than choosing a policy solely to avoid direct government expenditure.
- The HWTC—coupled with high minimum wages—would likely appeal to a broader spectrum of policymakers than other proposals to counter inequality and low incomes because it relies on the private sector and is a more pro-work policy than other alternatives. Universal Basic Income policies could have strong negative labor supply effects, and certainly are not designed to encourage work.¹⁴ And a universal guaranteed jobs program (Colander, 2016; Lowrey, 2017)—while having the potential virtue of increasing the link between income and work—would involve the government in the creation of potentially millions of jobs.
- With a standard hiring credit, there is the potential that the incidence falls on employers more than workers. In particular, if labor supply is quite elastic, then wages do not rise much, and employment expands more—so the employers capture the credit. The coupling of minimum wage increases with the HWTC would give policymakers more direct control over wage effects, even if employers capture most of the credit.

3.2 *Disadvantages*

¹³ Draca, Machin, & Van Reenen (2011) show that a higher minimum wage reduces firm profitability.

¹⁴ However, recent evidence from Alaska’s Permanent Fund argues that this may not always be true (Jones and Marinescu, 2018).

- The HWTC could be viewed as a cynical ploy to make it less likely that higher minimum wages will be adopted, because it creates a link to government spending and, hence, taxes. But it would be hard to fault the HWTC for slowing the rate of minimum wage increases if this happens because the public and policymakers better understand and weigh the costs of these increases.

Moreover, it is not clear that this change would make minimum wage increases less likely. Currently, higher minimum wages impose large costs on a subset of businesses, which may lobby hard to prevent minimum wage increases. The HWTC might encourage more employer buy-in by sharing the costs of minimum wage increases with taxpayers demanding income redistribution. Finally, if voters and policymakers ultimately select a different policy solution—for example, an expansion of the EITC—because the HWTC made the costs of minimum wage increases clearer, this is likely because the policy is a better choice.

- The HWTC would increase government expenditure. However, a large share of the costs of the HWTC are borne anyway, but by employers (and others, like consumers) rather than taxpayers. Thus, the net cost of the program would be considerably lower than the gross cost.
- The need to phase out the HWTC at wages above the minimum wage would raise the cost of the credit, as it applies to more workers. On the other hand, the phase-out is important to avoid strong labor market distortions. Moreover, this spending would not be all a windfall for employers, as there is some evidence that higher minimum wages force up the wages of workers paid slightly more than the minimum (Neumark, Schweitzer, & Wascher, 2004).
- The HWTC might be viewed as “corporate welfare” because it gives a credit to employers who hire low-wage labor. This same criticism is often leveled at the EITC. However, the criticism is misplaced—the point of such policies is precisely to subsidize the hiring or employment of low-skilled workers, which happens by lowering the labor costs paid by firms. Moreover, the credit rate would be set at 50% so that the responsibility for higher wages is shared by taxpayers and employers of low-skilled labor.
- Administering the HWTC would require that firms report not just earnings but hourly wages (or hours, from which wages can be computed) to claim the credit. This would likely not be a very large administrative burden, and some states’ unemployment insurance systems already gather this information (i.e., Washington). There would be a potential issue of collusion, as firms would have an incentive to say to a worker: “I’ll report a lower wage and higher hours, keeping your pay the same. This will enable me to get more from the credit,

which I will share with you.” In contrast, when quarterly earnings are reported, there is no such incentive for collusion.

Of course, many government programs have the potential for dishonest reporting, so the mere possibility of this does not discredit the proposal. Moreover, this kind of behavior might be particularly easy to monitor. The incentive for this kind of misreporting would increase immediately following a minimum wage increase. That should make it relatively easy to monitor for upward changes in hours and downward changes in wages after minimum wage increase. It is also the case that the minimum wage itself provides a floor that limits this kind of collusion, since there would be no reason (and it would be a violation of minimum wage law) to report a wage below the minimum. The potential cost of this collusion is also low because the only profitable collusion would be for wages between the new minimum wage and the wage at which the credit phases out.

- The HWTC is more complicated than a general hiring credit, but it has a couple advantages in comparison to a general credit. It is not tied to hiring per se, which we know creates complications for these kinds of credits. It is tied directly to the minimum wage; it is triggered by minimum wage increases; and it fades away if minimum wages do not increase. It also is designed to interact with policy, so that if the minimum wage went up faster, the HWTC would become more generous to help offset the costs and better target the benefits, and to help policymakers and the public understand the costs of higher minimum wages.

3.3 *Estimated Costs and Benefits of the HWTC*

I have used data from the Current Population Survey to estimate the direct government costs of the HWTC and how the benefits would be distributed across the family income distribution. There are a few key points to make about the cost estimates.

First, the estimates are suggestive, not decisive, as there are several decisions I made about how to use the data that impact the exact estimates. The notes to Tables 1 and 2, which present information on these costs, explain the calculations in detail.

Second, I do the estimation for an assumed increase in the federal minimum wage to \$10. This impacts some states and not others, depending on their minimum wage. Third, I assume no behavioral responses to either the new minimum wage or the HWTC. Rather, I simply assume workers previously paid less than the new minimum wage are paid the new minimum, and the credit—the value of which depends on how much this raises average wages below the new minimum—is then paid according to the parameters of the policy. The assumption of no behavioral responses does not mean I believe there would be no behavioral responses, but it allows me to avoid wading into the debate on what those behavioral responses are. In actual fact, I believe the true cost of the HWTC

would be somewhat lower than my estimates below due to the disemployment (and lower hours) effects of the minimum wage. (I expect the HWTC would partially offset some of these effects.)

Fourth, I do not include in the main calculation workers who, according to the data, are paid less than the minimum wage. I use data on hourly wages whenever possible (from the Current Population Outgoing Rotation Groups) to maximize the accuracy with which hourly wages are measured, but some of the recorded or estimated low wages may still be in error. And some workers do legally earn less than the stated minimum wage—for example, tipped workers in tip credit states. There are potentially complicated ways to estimate what a higher minimum wage and the HWTC might do to wages below the minimum, but it is difficult to calculate accurately, so I omit this from my calculation.

Note that the measurement of hourly wages in my calculation would also underlie actual implementation of the HWTC, since the policy would have to specify how the value of the credit is determined based on a new minimum wage and the wage distribution. I would advocate doing the calculation this way, based on recent Current Population Survey data at the time of a minimum wage change.

Finally, it is important to keep in mind that the estimated cost of the HWTC is for the most part not a *new* cost. Rather, it is largely a shift in cost from employers to the government associated with the HWTC offsetting some employer costs of a higher minimum wage. The cost is likely somewhat higher than what employers would pay absent the HWTC, because the HWTC would mitigate the employment or hours reductions from the higher minimum wage. But again, in that case, the cost should be thought of more as a shift in costs from workers to the government. The policy would also entail enforcement costs, which I have not tried to estimate. Overall, however, the cost estimate is most relevant as an estimate of how much the HWTC would raise government expenditure; the true social cost may be quite small.¹⁵

Table 1 shows the estimated cost of the HWTC. It first reports estimated costs for some sample states. In Alabama, the federal minimum wage of \$7.25 binds, whereas Maryland has a higher minimum wage (\$9.25), so only the new federal minimum wage of \$10 would bind. Because of this, and because of higher wages in Maryland, the average wage between the prevailing state minimum and the new \$10 minimum is much higher in Maryland (\$9.85 vs. \$8.36—see column (2)).¹⁶ This makes the value of the HWTC in Maryland much smaller, and so the wage at which the HWTC fully phases out is also much lower (\$10.16 vs. \$11.64—see column (5)). Thus, the total number of hours covered by the HWTC is much higher in Alabama—for both workers above and below the new minimum (see columns (3) and (6)). Finally, because of this, the HWTC costs

¹⁵ There are both distortion costs from the minimum wage and from the taxation to fund the HWTC that would mitigate the effects of the minimum wage. I do not have reliable evidence on the magnitudes of these, but to a first order they seem likely to be largely offsetting.

¹⁶ All figures are as of March, 2018, based on inflating CPS data from March, 2017.

considerably more in Alabama than in Maryland—about \$350 million vs. \$7 million (see column (8)). The next row is for Oregon. Because Oregon’s minimum wage is above \$10, there is no cost of the HWTC associated with Oregon.

The remainder of Table 1 reports similar estimates for the United States as a whole from raising the federal minimum wage to \$10. These costs come from all states with a current minimum wage below \$10. The estimate of the total cost for the United States is about \$9.5 billion. Excluding those with more than a high school degree drops the cost to \$7.4 billion.

Finally, the last row shows the estimated cost if I assume the new minimum wage would apply to all workers paid below \$10, regardless of whether they are currently paid below the prevailing minimum wage. For the average wage calculation, workers currently paid below the prevailing minimum are assumed to be making the minimum wage.¹⁷ The estimated cost calculated under this assumption is about \$15.5 billion.

Table 2 shows how the total value of HWTC payments would be “distributed” across the distribution of income relative to needs, which is family income divided by the poverty line (so a value of 1 means the family is at the poverty line). I put distributed in quotes because, unlike with a minimum wage, the HWTC would go to employers, not workers. Still, this calculation provides information on the types of workers—by family income—for which higher minimum wages would be offset by the HWTC. That is relevant, especially if one thinks a higher minimum wage will create some declines in employment or hours worked—evidence that the HWTC would tend to offset a higher minimum wage going to workers in poor or low-income families implies that the HWTC might help preserve jobs (or hours) in poor or low-income families.

Table 2 shows that, in fact, HWTC payments would not be strongly concentrated on workers in low-income families. That is not surprising, as the minimum wage targets low-income families badly, as discussed earlier. More important is the question of how restricting the HWTC to less-educated workers would improve the targeting of the credit. Table 2 shows that this restriction would help, but only a little. Without the exclusion, 13.1% of HWTC payments would be for workers in poor families, and 29.2% would be for workers in families below 1.5 times the poverty line (the “near poor”). In contrast, with the education restriction, the corresponding figures are 14.8% and 32.4%. Thus, the restrictions on workers for whom employers can claim the HWTC would do a

¹⁷ This can be rationalized by assuming that wages below the minimum wage are erroneous. If they are not, then this calculation still makes sense—we would not want to base the credit on the difference between their recorded wages and the new minimum wage, since their wages would be unlikely to rise to the new minimum wage. Rather, the credit is then based on the legislated increase. All in all, this is an illustration of the ambiguity around how to treat wages below the prevailing minimum.

little to help the targeting of the HWTC's mitigation effects to lower-income families. But the restrictions would not substantially improve the targeting of the credit.¹⁸

Of course, in principle we could restrict the HWTC to workers in low-income families and improve the targeting tremendously. This would likely have the added effect of shifting employment from low-wage workers in higher income families to low-wage workers in lower income families, improving the distributional effects even more. However, this would be a much more complicated policy, and would potentially run into the stigma problems associated with hiring credits focused on the less advantaged, which is something that previous research has documented (see Neumark, 2013). Thus, because the minimum wage does not target low-income families well, it is hard to design a hiring credit based on the minimum wage that targets these families much better. But the types of restrictions I have proposed can improve targeting modestly.

¹⁸ It is conceivable that the restriction of the HWTC to workers with a high school degree or less would improve the targeting of the minimum wage by reducing the relative cost of less educated low-wage workers, who are a bit more likely to be in low-income families than are more educated low-wage workers.

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Table 1: Estimated Costs of the HWTC, for Increase of Federal Minimum Wage to \$10

State examples	State MW, 2018	Avg. wage, \$ (2018 MW) ≤ wage < \$10	Total hours, \$(2018 MW) ≤ wage < \$10 (000s)	Tax credit cost, workers below new MW (000s)	Wage at full HWTC phase-out	Total hours, \$10 ≤ wage < full phase-out wage (000s)	Tax credit cost, workers below new MW (000s)	Full tax credit cost (000s)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Alabama	\$7.25	\$8.363	212,571	\$174,037	\$11.637	312,054	\$176,449	\$350,486
Maryland	\$9.25	\$9.845	41,916	\$3,248	\$10.155	96,477	\$3,992	\$7,240
Oregon	\$10.25	--	--	\$0	--	--	\$0	\$0
	Avg. state MW for states with MW < \$10				Avg. wage at full HWTC phase-out			
U.S. total, for states with MW < \$10	\$7.86	\$8.931	10,101,211	\$5,888,998	\$11.069	10,004,792	\$3,566,443	\$9,455,441
Alternative U.S. calculations								
Excluded education > HS degree	\$7.86	\$8.892	7,852,028	\$4,663,566	\$11.108	7,706,837	\$2,724,740	\$7,388,306
Include workers with wage < state MW	\$7.86	\$8.677	15,356,108	\$10,306,652	\$11.354	11,861,899	\$5,146,528	\$15,453,180

Notes: Data from the Outgoing Rotation Groups in the 2017 Current Population Survey March Annual Social and Economic Supplement (ASEC) file. (We use the IPUMS; see Flood et al., 2017). Hourly wages are either given for hourly workers or constructed from reported weekly earnings divided by usual hours worked, when available (adjusted for inflation from March, 2017 to March, 2018). Observations with wages less than the state minimum wage are excluded, except in the last row. Total hours are annualized and calculated by multiplying the usual hours worked per week last year multiplied by the number of weeks worked last year for each worker. People who do not report usual hours worked are excluded. The hours are then added up for each state, taking into account ORG-specific survey weights as representative of the U.S. population. The average wage for each state is calculated for each state by weighing each individual

observation's hourly wage by their survey weights. The average U.S. total is an unweighted average across all states' average wage. (Alaska qualifies for the tax credit, but the average wage was not calculated because the ORG did not have anyone with an hourly wage between \$9.84 and \$10.00, so it is omitted from the cost estimation.) The tax credit cost in column (4) is computed as 50% of the difference between the \$10 minimum wage and the average wage in the state for workers paid between the old and the new minimum (column 2), multiplied by the total hours for these workers (column (3)). The tax credit cost in column (7) is computed as follows. First, the wage at which the HWTC is fully phased out (column (5)) is computed as \$10 plus twice the difference between the \$10 minimum wage and the average wage in the state for workers paid between the old and the new minimum (from column (2)). Second, the per hour credit for workers with wages between \$10 and this wage is calculated as 50% multiplied by the difference between the individual worker's wage and \$10. This figure is then multiplied by hours worked for these workers. The total credit cost in column (8) is the sum of columns (4) and (6). In the last row, the figures in columns (2) and (3) are computed for all workers paid less than \$10 per hour.

Table 2: Targeting of HWTC by Income-to-Needs of Families

	Total, excluding workers below state MW (000s)	Excluded education > HS degree (000s)	Include workers with wage < state MW (000s)
Income-to-Needs Ratio	Total HWTC	Total HWTC	Total HWTC
Less than 1.00	\$1,240,730	\$1,092,728	\$1,948,415
1.00 to 1.24	\$801,034	\$691,703	\$1,242,679
1.25 to 1.49	\$716,288	\$605,299	\$1,016,041
1.50 to 1.99	\$1,098,517	\$950,112	\$1,762,820
2.00 to 2.99	\$1,779,053	\$1,339,232	\$3,024,895
3.00 or above	\$3,819,819	\$2,709,232	\$6,458,330
Total	\$9,455,441	\$7,388,306	\$15,453,180
	% of HWTC	% of HWTC	% of HWTC
Less than 1.00	13.1%	14.8%	12.6%
1.00 to 1.24	8.5%	9.4%	8.0%
1.25 to 1.49	7.6%	8.2%	6.6%
1.50 to 1.99	11.6%	12.9%	11.4%
2.00 to 2.99	18.8%	18.1%	19.6%
3.00 or above	40.4%	36.7%	41.8%

Note: Data from the Outgoing Rotation Groups in the 2017 Current Population Survey March Annual Social and Economic Supplement (ASEC) file. (We use the IPUMS; see Flood et al., 2017). The total HWTC credit is calculated as described in Table 1. The income-to-needs ratio is calculated by dividing family income by the poverty cutoff threshold for an individual's family size (provided in the March file). The tax credit is then grouped into where the worker falls in their family's income-to-needs ratio. Families include subfamilies.