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The ACA: Some Unpleasant Welfare Arithmetic
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ABSTRACT

Under the Affordable Care Act, between six and eleven million workers would increase their disposable income by cutting their weekly work hours. About half of them would primarily do so by making themselves eligible for the ACA's federal assistance with health insurance premiums and out-of-pocket health costs, despite the fact that subsidized workers are not able to pay health premiums with pre-tax dollars. The remainder would do so primarily by relieving their employers from penalties, or the threat of penalties, pursuant to the ACA's employer mandate. Women, especially those who are not married, are more likely than men to have their short-term financial reward to full-time work eliminated by the ACA. Additional workers, beyond the six to eleven million, could increase their disposable income by using reduced hours to climb one of the "cliffs" that are part of the ACA's mapping from household income to federal assistance.

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The Affordable Care Act presents employers and potential employees with a variety of new rewards and penalties. Will the law help the labor market recover from the recession, or further prolong it? Complete answers to these questions must consider how incentives would be different with the law than without it. The purpose of this paper is to quantify the number of people who will have essentially no short-term financial reward from working more than 29 hours, and thereby either rendering themselves ineligible for the ACA's assistance or increasing the penalties that may be owed by their employer.

Even when helping people out of work and otherwise with low incomes is a primary policy motivation and the wage elasticity of labor supply is low, labor income tax rates that equal or exceed one hundred percent are inconsistent with optimal tax theory (as long as work is not socially harmful) because at a one hundred percent rate there is no longer a tradeoff between efficiency and government revenue. From a positive point of view, economists expect that full-time employment rates will be low, if not zero, in groups of people who are aware that they receive no financial reward from working full-time (defined here to be working at least 30 hours per week). These are a couple of more reasons to quantify the prevalence of marginal tax rates that are near or exceed one hundred percent (hereafter, "prohibitive rates").

Section I begins with an overview of ACA provisions that, in effect, pay full-time workers to reduce their weekly hours to 29. Section II walks through a specific example in which moving to part time creates eligibility for subsidies that exceed the compensation lost from working fewer hours. Section III presents the arithmetic of prohibitive employer penalties. The somewhat more complicated arithmetic of prohibitive implicit taxes is presented in Section IV. Sections V and VI conclude and discuss areas for further research.

I. ACA provisions that create 29ers[1]

Two major provisions of the ACA tempt employers and employees to limit work schedules to 29 hours per week. The most acknowledged is the penalty on large employers that

[1] Persons working just below the 30-hour threshold are sometimes known as "29ers."

do not offer health insurance to their full-time employees, which are defined to be employees working 30 hours or more per week (with an exception noted below). Because the amount of the penalty is proportional to the number of full-time employees (over thirty) on the payroll, the penalty creates an incentive to substitute part-time positions for full-time positions and to monitor part-time employee hours so that they do not exceed 29 hours per week.

The marginal penalty is either $2,000, zero, or $40,000 per full-time-employee year (the ACA also adjusts each amount for health-cost inflation after 2014), depending whether the average number of full-time employees on the payroll during the calendar year is greater than, less than, or equal to, 49, respectively. For simplicity, this paper models the employer penalty as if it had a constant marginal rate of $2,000 plus health-cost inflation, but in practice some of the employers limiting work schedules to 29 hours per week will not owe any penalty and their limit serves the purpose of avoiding the $40,000 marginal penalty.[2] The penalty is not deductible from the employer's business taxes. Each $2,000 of penalty is therefore equivalent to $3,046 of employee wages.[3]

Less acknowledged is the ACA provision that full-time employees and their families cannot receive subsidized health coverage on the ACA's health insurance exchanges (hereafter, "exchange subsidies," even when referring to the subsidies that are administered as income tax credits) unless their employer fails to offer coverage. Except in the increasingly rare cases where part-time positions are eligible for employer health coverage too, an employee (and family) at a firm offering coverage would be eligible for exchange subsidies only if he worked part-time, which amounts to an implicit tax on full-time employment.[4] The amount of the implicit tax on full-time employment is equal to the employee's valuation of the exchange subsidy he forgoes as a consequence of working full-time. Assuming that household heads and spouses will not be required to obtain family coverage through a dependent's employment (sic) before they can apply for subsidized exchange coverage, this implicit tax only applies to household heads and

[2] Gallen (2013) looks at the non-linearity of the penalty (in number of employees) and how it relates to the allocation of labor between part- and full-time positions. The marginal penalty also depends on the number of full-time equivalent employees on the payroll in the prior "look back" calendar year.
[3] 3,046 = 2,000/[(1-0.39)*(1+0.0765)] where 39% and 7.65% are the employer business and payroll tax rates, respectively.
[4] See also Gamage (2012) and Mulligan (2013). The incentives can be more complicated for dual-earner couples; see below my discussion of the ACA's "family glitch."

spouses, and not to dependents because family coverage subsidies will be obtained on the basis of the opportunities that head and spouse have for employer coverage.

The implicit tax is similar in character to the employer penalty because both provisions serve to give the government more net revenue from full-time jobs than from part-time jobs. With the implicit tax, the government gets more net revenue from full-time employees at ESI employers because those employees are ineligible for exchange subsidies. With the penalty, the government gets more net revenue from full-time employees at (large) non-ESI employers because those are the employees subject to penalties.

The exchange subsidies are also phased out with household income, but the implicit full-time tax would be present even without a phase out because full-time employment at ESI employers by itself renders a worker and his family ineligible for the exchange subsidies.

II. Magnitudes of the 29er Wedge: An Example

As an example of the full-time tax in action, consider a hypothetical person comparing a part-time position to a full-time position. The full-time position, shown in the left column of Table 1 requires 40 hours of work and $100 of employment expenses (such as commuting or child care) per week, for 50 weeks per year. The part-time position requires 29 hours of work and $75 employment expenses per week. Each of the positions costs the employer $26 per hour worked, including employer payroll taxes and employer contributions for health insurance (if any).

Only the full-time position includes affordable health insurance, which means that a full-time employee would not be eligible to receive assistance from the ACA for premiums or for out-of-pocket health expenses. The employer pays 78% of the premiums for the family insurance plan, and withholds the remaining premiums of $3,146 from the paychecks of participating full-time employees. Each full-time employee's income subject to tax is $35,021, which excludes employer payroll taxes (7.65% of the $35,021), employer health insurance contributions, and employee premiums withheld.

Part-time employees get less total compensation – $37,700 – because they work fewer hours. The part-time employees are not eligible for ESI and the tax exclusions that go with it, which makes their income subject to tax ($35,021) equal to their total compensation minus employer payroll taxes. It is a coincidence that income subject to tax is the same for full-time and part-time employees: more on this below.

The part-time employees are eligible for subsidized health plans from the ACA's exchanges because they are not offered affordable health insurance by their employer. I assume that the second cheapest silver plan has the same expected medical payments as the employer plan: namely, $17,300 per year including out-of-pocket health expenses. By definition of silver plan, the full premium is $12,110. However, because the employee has a family income subject to tax of 145% of the federal poverty line (the employee is the sole earner in a family of four), the ACA caps premiums for the second cheapest silver plan at 3.7 percent of their income subject to tax, or $1,304 per year. The other $10,806 is paid by the U.S. Treasury to the insurer pursuant to the ACA.

By design, the silver health plans have lower premiums and greater out-of-pocket costs (deductibles, copayments, etc.) than the typical employer plan. That design feature is visible in Table 1 because exchange plan out-of-pocket costs total $5,190 rather than the $3,000 of out-of-pocket health expenses associated with ESI. However, because the employee's family is at 145% of the poverty line, the employee gets an 80% discount on the out-of-pocket expenses, with the remainder paid by the U.S. Treasury to the insurer pursuant to the ACA.

After health and work expenses, the part-time employee makes $28,929 per year, which exceeds the full-time income ($27,021) after health and work expenses! Table 1 does not show the employee payroll and personal income taxes, but those would be the same for the full-time and part-time employee because the amount of the income subject to the two taxes is, in this example, independent of full-time status.

None of Table 1's results reflects the employer penalty because the comparison shown is for calendar year 2014.[5] However, as explained throughout this paper, the employer penalty has many of the same economic characteristics as foregone exchange subsidies, and vice versa.

The hypothetical worker examined in Table 1 can, under the ACA, have more income by working fewer hours. Table 1 does not show that this worker will have more income with the ACA than without it (he may), because both columns assume that the ACA is in place. Among other things, the ACA may affect the hourly employer cost shown in Table 1's third row.[6] The purpose of Table 1 and the rest of this paper is to look at situations under the ACA in which a decision to work less does not reduce disposable income.

Table 1's example is a bit simplified in that part-time employees have the same income subject to tax and the same hourly employer cost as full-time employees. The Table illustrates a general lesson that, under the ACA, moving from full-time employment to part-time employment can trigger generous assistance with health premiums and out-of-pocket expenses that can offset much of the income lost due to reduced work hours. The fact that the assistance is new means that hours and employment patterns will not continue exactly as they have in the past (Mulligan 2014).

Nevertheless, moving from part-time employment to full-time will not always, or even usually, reduce disposable income as it does in Table 1. The purpose of this paper is to estimate how many people will be in a "100+ percent tax" situation like the one shown in Table 1, so that full-time work pays no better than part-time work.

III. The number and types of workers likely made 29ers by employer penalties

The ACA's penalty on employers not offering affordable health insurance to their employees is one reason that work schedules might be limited to 29 hours per week. Approximately 26% of full-time employees will not be offered health insurance by their

[5] The employer penalty does not begin until 2015, and is not currently scheduled to be in full force until 2016.
[6] See Mulligan and Gallen (2013) for a fuller analysis of the incidence of the ACA.

employer.[7] I therefore assume that 26 percent of persons employed (part- or full-time) in 2011 would be working (if at all) under the ACA for an employer that does not offer insurance to full-time employees and is therefore penalized per full-time employee.[8]

In order to estimate the distribution of people (in terms of work hours and demographics) employed by employers not offering ESI, I assign a non-ESI-employer indicator to all non-elderly household heads and spouses in the March 2012 CPS employed sometime during 2011 with usual weekly hours of at least 35.[9] Sample members that do not have ESI from their job are assigned an indicator of one, and the others are assigned zero.[10] Among samples of the elderly, dependents, or part-time workers, this would be a poor indicator of type of employer because the elderly are typically insured by Medicare, dependents are typically insured by a family member's policy, and part-time workers are typically not offered coverage even while their full-time coworkers are. For the elderly, dependents, and part-time workers, I calculate a probability that their full-time coworkers are not offered ESI as the fitted value of a probit equation with dependent variable equal to the non-ESI-employer indicator noted above, estimated in the sample of non-elderly full-time household heads and spouses.[11] Results for the entire sample, or for specific groups of non-elderly persons, are not sensitive to variations on this procedure because dependents and the elderly are a small fraction of persons working at least 30 hours per week.

Whether the assessment or threat of an employer penalty will actually result in work schedule limitations depends on, among other things, the amount of the penalty and the degree to which schedules need to be limited to avoid the penalty. By 2016, the weekly penalty amount

[7] The CBO estimates that 27 percent of employees in 2008 would work for an employer that does not offer coverage (Congressional Budget Office 2007). Using Census Bureau data, Janicki (2013) estimates 29 percent in 2010. Using the Medical Expenditure Panel Survey (MEPS), Carroll and Miller (2011) estimate 13 percent in 2011. There will be some employers who drop their coverage as a consequence of the ACA, which by itself would make the three estimates above underestimates of the fraction of employees in 2014 and beyond who would work for firms not offering coverage.

[8] See above on the $2,000, zero, and $40,000 marginal penalty amounts.

[9] The Appendix presents an alternative version of my calculations that replaces the CPS usual weekly hours measure with its measure of hours worked in the reference week.

[10] As noted above, I do not use this procedure to estimate the total number of people working for employers that do not offer ESI.

[11] The independent variables are indicator variables for detailed industries and the interactions between indicators for employer size more than 100 employees and work schedule at least 40 hours. Part-time non-elderly heads and spouses that have ESI are assigned an indicator of zero, regardless of the fitted value that the probit equation assigns them.

will be about $60 (2014 dollars).[12] If a penalized employer would have had a 30 hour work schedule but for the ACA – and there are workers with 30 hour work schedules – clearly he should consider cutting the schedule to 29 in order to save the $60, unless each employee was expected to produce more than $60 of value during that hour. As shown in the second column of Table 2, cutting 31-hour schedules would save $30 per hour cut, and cutting 32-hour schedules would save $20 per hour cut. At the minimum wage of $7.25, it might be worth cutting a 37-hour schedule down to 29 in order to avoid the penalty. Even a 41-hour work schedule might, at minimum wage, be worth cutting down to 29 if the schedule cut would both avoid the penalty and reduce weekly work expenses (e.g., commuting or child care costs) by, say, $20: see the third column of the table.

Table 2 estimates the number of workers who satisfy these criteria – (i) employer not offering ESI, (ii) working at least 30 hours per week in 2011, and (iii) average hourly wages (net of work expenses) less than the salary equivalent of the employer penalty amortized over the hours between 29 and actual weekly hours worked in 2011, under two alternative assumptions about work expenses. The estimates are prepared in three steps. First, the non-ESI-employer indicator noted above is rescaled so that it averages 26 percent in the entire sample of workers. Second, the indicator is multiplied by the CPS health insurance weight in order to project 2012 national totals and then scaled by a factor of 1.01^4 to project 2016 national totals. Third, the indicator is summed across observations satisfying the criteria (ii) and (iii) noted above and reported in the right half of Table 2.

Under these assumptions, and assuming that employees are paid according to the value that they create, the sum of the indicators is the number of workers in 2016 whose weekly hours could be cut to 29 hours without reducing the weekly value they create net of the employer penalty and work expenses. The sum ranges from 2.8 to 5.1 million, depending on the assumed work expenses.

[12] $60 is the $3,046 noted above increased 3.2 percent for projected health cost inflation in excess of wages between 2014 and 2016, and then divided by 52. The ACA penalties and exchange subsidies are determined on a monthly basis, even though the annualized subsidy amounts are a function of calendar year income. For simplicity, I assume that partial months of health insurance coverage are prorated in proportion to the number of weeks covered (and ignore the fact that months usually do not have an integer number of weeks) so that I can refer to weekly amounts of penalties and subsidies.

Table 3 displays the likelihood that workers of various characteristics experience the 100 percent tax in the form of the employer penalty. Female workers are more likely than male workers to experience the 100 percent tax because their weekly work schedules tend to be closer to 29 hours. The likelihood declines with age among non-elderly workers because average hourly earnings increase with age.

It is easy to see why the employer penalty erases the reward to full-time work for a few million workers. According to the CPS, there were about 5 million workers in 2011 with usual hours of exactly 30. If roughly 26 percent (the population average) of those worked for an employer that did not offer coverage to full-time workers, then 1.3 of the 5 million will avoid an employer penalty by cutting hours to 29. If roughly 90 percent of workers earn less than $60 per hour, workers with 30-hour schedules alone contribute over a million workers to the totals shown in Table 3.[13] The more exact amount shown at the top of Table 2 accounts for the fact that the wage distribution among, and the types of jobs held by, 30-hour workers is different from the general population.

The ACA also penalizes employers that (i) offer health insurance to their employees and (ii) have employees who receive subsidized coverage through the ACA's exchanges. Both conditions can occur because there may be employees who are eligible for subsidized coverage because their employer's offer of coverage is not affordable.[14] The annualized penalty is $3,000 (plus health cost inflation after 2014) per full-time employee who receives subsidized coverage and is capped at $2,000 (plus health cost inflation after 2014) times the total number of full-time employees, including those full-time employees that do not receive subsidized coverage.[15] The $3,000 penalty can be avoided by reducing the hours of specific full-time employees. This penalty is not reflected in Tables 2 and 3, which is one reason that their estimates are conservative.

[13] There are also about 5 million workers with exactly 35-hour schedules, and probably more than a million of them work for employers not offering coverage. Any of those (one million+) with hourly earnings less than $10 (=10 = 60/(35-29)) would make more net of the penalty by working 29 hours.
[14] "Not affordable" means that employee premiums for self-only coverage exceed 9.5 percent of the employee's household's income.
[15] The cap even includes the first thirty full-time employees.

IV. The number and types of workers likely made 29ers by the exchange subsidies

IV.A. Number and types of workers facing an implicit FTET

Even if it did not penalize full-time employees at employers offering ESI, the ACA presents employees with an implicit full-time employment tax (FTET): namely, exchange subsidies foregone. Table 4 lists the demographic groups who will forego exchange subsidies by working full time, in order of aggregate weeks worked in 2011. The table represents all 20 million (as of 2016) persons presented with an implicit FTET by the ACA, regardless of its magnitude.

The top group is married households with dependents in which one spouse works full time with ESI and the other spouse either does not work full time or works for an employer that does not offer family coverage.[16] Their average annualized subsidy forgone is shown in the right column and is almost $10,000 after income and payroll taxes because of the number of family members whose exchange subsidy hinges on the job situation of the one family member who is working full time with ESI.[17] The method of calculating the forgone subsidy is presented below.

A large number of married persons are not represented in Table 4 because many of their households have two earners, each with access to family coverage on the job. If one of the two spouses in such households were to give up his ESI by moving to part-time, the entire family would still be ineligible for exchange subsidies because the ACA requires that they obtain employer coverage through the spouse that continues to have access to family coverage on her job.[18] In other words, many married persons are excluded from Table 4 and the tables below because the ACA does not present them with an implicit FTET.

The next two groups foregoing exchange subsidies are one-person households and single-parent households in which the head is working full time with ESI. According to the Kaiser

[16] For married persons who are employed full-time but enrolled in a spouse's plan, the availability of ESI at the employer is randomly imputed based on the size of that employer. 85% (8%) of not-enrolled employees at employers of 100 or more (less than 100), respectively, are assumed to have been offered coverage but turned it down.

[17] The averages in Table 4 includes zeros for the households that satisfy the eligibility criteria but have a premium that is cheap enough to affordable by the ACA's definition.

[18] The family coverage offered by a spouse's employer does not even have to be affordable, as long as the spouse's employer offers affordable (by ACA definitions) self-only coverage to its employees. See Burkhauser, Lyons and Simon (2011) for further discussion of this so-called "family glitch."

premium calculator, annual silver plan premiums for a one-person household are about $4,000, which means that the likely exchange subsidies are relatively small.[19] However, as dependents are added to the household exchange subsidies increase significantly, and would be about $7,000 annually for the average unmarried household with dependents and with income in the eligible range, as shown in the final column of Table 4.

The next group displayed in Table 4 is married households without dependents in which one spouse has ESI and the other does not have a job offering ESI. Although the group is not particularly large, the annualized exchange subsidies for married households that would satisfy the eligibility criteria when not working full time average about $8,300. The top four groups together contain over 90 percent of the persons expected to face an implicit full-time employment tax under the ACA.

IV.B. Prohibitive implicit FTETs: determinants of disposable income

Most workers represented in Table 4 forego an exchange subsidy that is less than the revenue that would be lost by cutting their weekly work hours to 29. Some of them may nonetheless cut their hours in order to obtain the subsidies because they value the leisure time, but the focus of this paper are the persons like those in Table 1 who would improve their cash flow by cutting their work hours.

The first step in identifying such workers is to calculate the expected (in the actuarial sense) annual medical expenditures m for each worker's household. I use the Kaiser premium calculator and March 2012 CPS information on the number and age of family members to estimate the full premium (that is, without any subsidies) that the family would pay if enrolled in a silver plan. Because silver plan premiums are set to cover 70% of expected medical expenditures, I take m to be the ratio of the silver plan premium and 0.7.

Second, I measure household AGI apart from the worker's earnings as the difference a between the CPS variable for family income and the CPS variable for the worker's wage and

[19] For example, a single person household with income of $30,000 would get half of the premium subsidized, and no cost-sharing subsidy.

salary income. All of these calculations are in 2014 dollars as a ratio to the federal poverty line.[20]

I then consider two situations for each full-time worker represented in the March 2012 CPS that has ESI and cannot obtain it through a spouse (if any): (i) the actual usual weekly work schedule h and fringe benefits he had when at work in 2011 and (ii) a 29-hour work schedule and exchange subsidies that would be available instead of ESI. If situation (i) pre-tax earnings were high enough, then situation (i) would result in more disposable income than situation (ii) because each hour worked beyond 29 would pay well and because the means-test would eliminate too much of the subsidy to be received in situation (ii). I calculate the hypothetical amount y of pre-tax compensation, if any, that would generate the same disposable incomes in both situations (i) and (ii). That amount satisfies:

$$0 \equiv (1-t)\left(1-\frac{29}{h}\right)y - x + \left[0.83t - 0.3\delta\left(a+\frac{29}{h}y\right)\right]m - \max\left\{0, 0.7m - s\left(a+\frac{29}{h}y\right)\left(a+\frac{29}{h}y\right)\right\} \quad (1)$$

where t denotes the marginal personal income tax rate (not including the phase-out of ACA subsidies), $h > 29$ denotes weekly work hours in 2011, and x denotes the extra work expenses associated with working h hours rather than 29. $a+\frac{29}{h}y$ is household AGI if the worker earning y for h hours of work would work 29 hours instead. $\delta(\cdot)$ and $s(\cdot)$ are the schedules specified by the ACA determining the discount on out-of-pocket costs and the cap on the share of AGI to be spent on premiums paid to the health insurance exchanges.

For each worker, his actual compensation in situation (i) (measured in 2011 and converted to 2014 dollars) can be compared with his critical value y, if one exists, from equation (1). If y does not exist or is less than actual compensation then working h hours results in more disposable income than working 29 hours. Otherwise, working h hours results in no more disposable income than working 29 hours does, and the ACA's subsidies present the worker with a 100+ percent tax situation like the one illustrated in Table 1.

[20] 2011 prices are converted to 2014 prices using a factor of 120.4679/113.8.

The first two terms in equation (1) are the income after taxes and work expenses, respectively, created by working h hours rather than 29, holding exclusions constant. The first term in square brackets denotes the tax savings from the exclusion of ESI premiums, which are equal to $0.83m$, that are available when obtaining coverage through the employer but not available when obtaining coverage on the exchanges.[21] The second term in square brackets is the savings on out-of-pocket costs that is available only when obtaining subsidized coverage on the exchanges. The max term denotes the premium tax credits received so that premium payments do not exceed the ACA's cap.[22]

IV.C. Prohibitive implicit FTETs: examples and comparisons

About half of workers in the CPS report a work schedule of exactly 40 hours per week. Among them, the critical compensation y varies across workers only to the degree that other AGI a and medical expenditure m (m itself is just a function of the size of the family and the age of its members) vary. Figure 1's solid line graphs m versus the critical full-time compensation amount y, assuming full-time hours $h = 40$, other AGI $a = 0$, and full-time work expenses of 0.04 FPL. The vertical lines indicate expected medical expenditures m for selected family types.

Take, for example, married couples, each aged thirty and with two children. Their expected medical expenditures are 62 percent of the federal poverty line. The solid red schedule's vertical value of 2.07 (see Figure 1) partitions those households that have a single-earner with a 40-hour full-time schedule into those that would increase disposable income by working 29 hours and that would decrease disposable income. Specifically, if the worker's full-time compensation were 2.06 (2.08) times the federal poverty line, then household income would be 1.49 (1.51) of the FPL, respectively, so that the discount rate on out-of-pocket costs would be 80 (57) percent. Both would have premiums capped at about 0.04 FPL, which would make their premium subsidy equal to about 0.40 FPL. At a 25 percent marginal income and payroll tax rate, the various terms in equation (1) would, in both cases, add to about 0.12 minus the δ term, which is 0.15 (0.11), respectively. Thus, the 2.06-compensation worker (slightly) would gain disposable income by cutting his schedule to 29 hours while the 2.08-compensation worker

[21] For simplicity, equation (1)'s $0.83tm$ term assumes that the household members who would be insured on the exchanges are also covered by ESI. In fact there are workers with ESI (and no spouse with ESI) that do not insure all non-elderly household members through their employer; for them I modify the $0.83tm$ term. The 0.83 reflects the average actuarial value of employer plans (Gabel, et al. 2012).

[22] Recall that $0.7m$ is the full premium.

would lose it. Determining the number of single-earner households with these demographics that would gain disposable income by moving to the 29-hour schedule has thereby been reduced to measuring the number of those earners who have ESI on their full-time job and are compensated less than 2.07 FPL.

The dashed line in Figure 1 shows that the schedule is different for single-earner households in which the full-time schedule is 35 hours. Here the critical value for a family of four (including two adults aged 30) is 2.41, which is greater than the 2.07 for the 40-hour schedule because a 35-hour worker gives up less of his paycheck to cut to 29 hours than a 40-hour worker would.

To get a rough idea of how often salaries and fringes are below the critical values, note that more than ten percent of the 3,211 married non-elderly 40-hour-per-week workers with ESI (and with spouse not working full-time, or working less than 26 weeks in 2011) in the March 2012 CPS have salary and fringes that are less than 1.6 FPL, which is one of the smallest critical values shown in Figure 1. 29 percent have salary and fringes that are less than 2.07 FPL. 64 percent of the 255 married non-elderly workers with ESI (and with spouse not working full-time, or working less than 26 weeks in 2011) and schedules between 30 and 39 hours have salary and fringes that are less than 2.41 FPL. Given the critical values shown in Figure 1, it should be no surprise that, as a result of the ACA, more than ten percent of the workers represented in Table 4 might gain disposable income by cutting their schedules to 29 hours.

IV.D. Prohibitive implicit FTETs: frequencies in the micro data

In order to arrive at a more precise estimate, I repeated this calculation – a critical value y from equation (1) compared with actual compensation – for each March 2012 CPS observation working full time in 2011 and represented in Table 4, and totaled the results in Table 5. As in Table 2, the CPS respondents are projected to represent the national population in 2016. Depending on whether additional work expenses are considered to be an expense of working full-time, 3.3 to 4.4 million household heads and spouses would, under the ACA, have more disposable income working 29 hours than working their usual full-time schedule. Because the ACA presents a total of 20 million heads and spouses with an implicit FTET of some magnitude, by subtraction I conclude that the implicit FTET is usually less than one hundred percent. Nevertheless, four million workers – not to mention perhaps another four million workers for

whom the employer penalty is a one hundred percent FTET – is a lot on the scale of overall part-time employment.

Table 5 shows that slightly more than half of the workers subject to the one hundred percent FTET report 40 hour work schedules, but that is the result of the fact that (reported) 40-hour schedules are generally common among workers with ESI. Among the few workers facing an implicit FTET and reporting, say, 30- or 31-hour schedules, the vast majority face a FTET rate in excess of 100 percent because they would lose relatively little wage income by cutting their schedule just an hour or two.

Only household heads and spouses in which at least one member is less than 65 years old are represented in Table 5. Table 6 displays the likelihood of various sub-demographics of non-elderly heads and spouses to experience any FTET and to experience a FTET rate of at least 100 percent. Unmarried people are more likely than married people to face the 100+ rate because the former do not have a spouse with opportunities for family coverage. Unmarried women are more likely than unmarried men because the former are more likely to be working 30-39 hours even without the ACA. Married men are more likely than married women to face the 100+ rate because they are more likely to be in a position offering ESI (e.g., married women may not be employed full time).

V. Income cliffs and other 100 percent tax rates in the ACA

The premium tax credits and out-of-pocket subsidies are discontinuous functions of household income. At the income amounts or "cliffs" where the subsidy jumps, just one dollar of additional income can cost a family thousands in lost benefits.

Perhaps the biggest example of an income cliff under the ACA is the removal of all premium tax credits when household income reaches 400 percent of the poverty line.[23] Take, for example, a couple with combined earnings equal to 399% of the federal poverty line. If the adults are each aged 50 and they have two children, the actuarial value of the family's medical

[23] Another large cliff is at 200 percent of the poverty line, where the discount rate on out-of-pocket costs falls from 57% to 10%.

expenditures is 85% FPL (see the vertical line in Figure 1), 60 percentage points of which would be premium payments on a silver plan. The premium tax credit therefore has to be 22% FPL (more than $5,000 per year) in order for the family's net premium to be limited to 9.5% of its income. If this household earned, say, $300 extra, it would cross the income threshold for premium assistance and the entire subsidy would be taken away: *a loss of almost $5,000 for earning just an extra $300*.

The implicit and explicit FTET tax rates examined in this paper have nothing to do with the income cliffs. I have not attempted to measure the number of persons who, when working without ESI, would find that the reward to full-time work was completely erased by the ACA because full-time work requires the person to cross one of the income cliffs.

It is also possible that, for a period of time, not working at all pays better than working full-time. In particular, taking a few extra months off work could add enough to earned income tax credits, subsidies for health insurance, unemployment benefits, food stamps, and subtract enough from work expenses to compensate for the entire salary lost during those months. I have not attempted to quantify the number of people who might be in this type of multi-program participation situation under the ACA.

As with the FTETs, both the income cliffs and multi-program participation examples can create 100 percent taxes in which people can profit by destroying value in the labor market. But income cliffs and multi-program participation are more heterogeneous across workers than the prohibitive FTET rates because, in the latter case, every worker that would benefit from the FTET has essentially the same target behavior: a 29-hour work schedule. In contrast, the amount of earnings that would push a worker over one of the ACA's income cliffs varies across workers according to their size and composition of their family. Although beyond the scope of this paper, the heterogeneity of one hundred percent tax points may affect the amount and incidences of behavioral responses to them.

Households that recognize the dynamic structure of the ACA's procedures for income measurement can use it to strategically create their own one hundred percent tax situations. In particular, the premium tax credits and cost-sharing subsidies are advanced on the basis of income estimates and are thereby a function of income earned prior to the insurance year to

which the subsidies apply.[24] A household might file a paper copy of its prior year tax return in October, so that as of the November enrollment period the exchanges are only aware of its income for the year before last. Unless the household files late again the next year, this relieves the household of some of the implicit taxes on its prior year income, but doubles some of the implicit taxes on income earned in the year before last.[25] With double implicit ACA taxes plus the normal income and payroll taxes, a household could find its marginal tax rate on income in the year before last to be over one hundred percent. I have not attempted to quantify the frequency of one hundred percent marginal tax rates that occur via this mechanism.

VI. Conclusions

It has been acknowledged that the ACA erodes the reward to work, meaning that people gain less by working under the ACA than they would without the law.[26] But this is the first paper to show that the ACA will put millions of workers in the economically extreme situation of having zero short-term financial reward, or less, to working full-time rather than part-time.

There are two separate ACA provisions that can fully eliminate the reward to full-time work. The first, which is scheduled to be in full force in 2016, pertains to full-time employees of firms that do not offer health insurance: by cutting weekly work hours to 29, they save their employer the annual salary equivalent of more than $3,000, or save them the threat of even larger penalties. As shown in Table 3, by this mechanism women workers, young workers, and persons already working 30-35 hour schedules, are especially likely to have their short-term financial reward to working full-time erased by the ACA. Three or four million workers overall will have their reward erased by this penalty provision.

The second provision pertains to full-time employees at firms that *do* offer health insurance. Over 60 million workers obtain health insurance from their employer, not including

[24] The premium tax credits are imperfectly reconciled with income earned during the insurance year (Mulligan 2013).
[25] For example, 2014 income (reported to the IRS in April 2015) could be used to determine cost-sharing subsidies and advance premium tax credits for both insurance year 2016 and insurance year 2017 (enrollment for these insurance years begins in November 2015 and November 2016, respectively). 2015 income (reported to the IRS in October 2016) might not be used to determine any year's cost-sharing subsidy or advance premium tax credit.
[26] See Mankiw (2009), Kessler (2011), Gamage (2012), and Mulligan (2013).

workers who obtain health insurance from a family member's employer. About half of them (26 million) are in families between 100 and 400 percent of the poverty line and therefore satisfy the income criteria for exchange subsidies. 11 million of those are unmarried – by definition cannot be covered by a spouse's plan – and another 8 million of the married have a spouse that does not work or otherwise cannot obtain coverage through a spouse. In other words, almost 20 million workers are ineligible for exchange subsidies solely because their employer offers coverage to full-time employees: these are the workers subject to the ACA's implicit full-time employment tax (FTET). A 29-hour work schedule, on the other hand would make them eligible for subsidies without creating any penalty for the employer.

In about four million cases (of the 20 million facing an implicit FTET of some magnitude), the dollar amount of subsidy gain can exceed the after-tax income that is earned for working beyond 29 hours per week. A distinguishing feature of almost 90 percent of these workers is that their family incomes are below 250 percent of the federal poverty line. The four million disproportionately consist of working unmarried household heads because, as noted above, unmarried heads are especially likely to be ineligible for exchange subsidies solely because their employer is offering coverage to full-time employees.

Older (but not elderly) workers are also disproportionately represented among those facing an implicit FTET rate of 100+ percent because older workers are more likely to have ESI and are more expensive to insure. The 100+ percent FTET from the employer penalty has the opposite age pattern, which means that there may be little age pattern for the propensity to face one of the 100+ percent FTETs.

The prevalence of 100+ percent FTETs is an important indicator of their behavioral effects, but it is not the only one. There are other ways to avoid the FTET, such as working more hours per week for fewer weeks of the year (Mulligan 2014). If employers are unwilling or unable to adjust work schedules, the FTET may affect the equilibrium relationship between hours and earnings (i.e., compensating differences) rather than changing the distribution of hours. At the other extreme, employers may be able to substantially adjust measured work hours without changing the actual work that is done (e.g., require employees to "punch out" during break periods, and then adjust their hourly wage so that weekly earnings are the same), in which case the ACA will reduce the measured hours for quite a large number of workers.

In effect, millions of workers are becoming eligible for fully federally funded paid days off work, akin to the sick leave policies in Western European countries. Because the Western European data suggest that paid sick days really do result in fewer days at work (Lusinyan 2007), we should expect the ACA's FTETs to reduced days worked as well, at least for the segments of the workforce that do not avoid the ACA's taxes in other ways.

VII. Appendix: Estimates based on the work schedule for the CPS reference week

The estimates in the body of the paper measure work schedules in the March 2012 CPS using the survey's question about "usual" work hours in the previous calendar year, but the CPS also asks about hours worked in the CPS reference week, namely the week before the CPS interview.[27] The measures are somewhat different. The mean weekly hours, conditional on positive hours, is slightly more than 39 for both measures, but ten percent fewer respondents (weighted by weeks worked in 2011) report positive reference week hours. 52 percent of respondents with positive usual weekly hours report that their usual hours are exactly 40, whereas 44 percent of respondents with positive reference week hours report 40. Both measures have somewhat more than 3 percent reporting exactly 30 hours, but exactly 32 hours is twice as common among the reference week hours reports as it is among the usual hours reports. Arguably many of the 32-hour reports "missing" from the usual hours data are found among those reporting exactly 35 usual hours because the frequency of 35 hours is greater in the usual hours distribution.

The ACA refers to average hours worked over an extended period: typically one year. By ACA definitions, a worker will not change his full-time status from week to week even though his work schedule may vary from week to week. In this regard, one could argue that the

[27] The reference week is the calendar week containing March 12.

CPS usual hours measure is the closest to what the ACA measures, which is why I use it in the main text.

On the other hand, CPS respondents may recall their hours last week more accurately than they recall their hours last year. The purpose of this appendix is to reproduce Tables 3 and 5 replacing the usual hours measure with the hours last week measure (also for the purpose of converting calendar year earnings into hourly earnings).

Tables 7 and 8 show the results. 2.8 to 5.1 million workers face prohibitive penalties (Table 7), as compared to a range of 3.6 to 6.6 shown in Table 2. Part, but not all, of the difference between Tables 2 and 7 is due to the fact that hours last week are more often unmeasured. 3.4 or 4.5 million workers face prohibitive implicit FTETs (Table 8), as compared to a range of 3.3 to 4.4 shown in Table 5. By comparing Tables 5 and 8, we see how the two hours measures differ in the frequency of 32-hour reports.

Table 1. The ACA's Implicit Tax on Full-time Work: An Example

beginning in 2014, for employers offering health insurance to full-time employees.
All dollar amounts are annualized unless noted otherwise.
Subsidies are calculated for a family of four with one earner.

	full-time position	part-time position	
Health insurance source	ESI	ACA exchange	
Employee costs			
weekly hours worked	40	29	(1)
weekly work expense	$ 100	$ 75	(2)
Employer costs			
hourly basis	26	26	(3)
annual	52,000	37,700	(4) = 50*(3)*(1)
employer payroll taxes	2,679	2,679	(5) = 50*[(4)-(6)-(7)]*0.0765/1.0765
Health insurance premiums			
employer	11,154	0	(6) = 78% of total premium (ESI only)
employee, excluded from tax base	3,146	0	(7) = 22% of total premium (ESI only)
employee, included in tax base	0	1,304	(8) = 3.7% of (12)
ACA	0	10,806	(9) = 70% of total health expenses - (8)
out-of-pocket health expenses			
employee	3,000	1,038	(10) = 17% (6%) of total ESI (exch.) expenses
ACA	0	4,152	(11) = (3/7)*[(8)+(9)]-(10)
Employee income subject to tax			
total	35,021	35,021	(12) = (4) - (5) - (6) - (7)
ratio to FPL	1.45	1.45	(13) = (12)/24100
after health & work expenses, annual	27,021	28,929	(14) = (12) - (8) - (10) - 50*(2)

Notes: Both types of employees work 50 weeks per year. The ACA exchange plan is assumed to be a silver plan (70% actuarial value).

Table 2. Penalized employees who would make more by working less

Calendar year 2016. Dollar amounts in 2014 dollars

Weekly work hours but for the penalty	Weekly penalty and work expenses, per hour worked past 29: Penalty only	Penalty + work expense	Number of penalized workers with hourly earnings at or below: Penalty only	Penalty + work expense
30	$60	$63	1,904,817	1,906,479
31	$30	$33	7,930	7,930
32	$20	$23	498,350	529,380
33	$15	$18	40,507	43,872
34	$12	$15	40,721	51,776
35	$10	$13	944,351	1,308,070
36	$9	$11	116,037	171,920
37	$8	$10	32,639	64,302
38		$9	0	107,913
39		$9	0	15,820
40	less than $7.25	$8	0	2,399,561
41		$8	0	3,086
42		less than $7.25	0	0
		Total:	3,585,352	6,610,111

Notes: The penalty is expressed as a salary equivalent. Work expenses are assumed to be $20 per 8 hours
Numbers of workers are national projections from the March 2012 CPS, and scaled for population growth through 2016 by a factor of 1.01^4. I assume that no workers have hourly earnings below $7.25.

Table 3. Propensity that the penalty fully erases the reward to full-time work

among persons working sometime during a calendar year

Age	Men	Women	Both
less than 25	0.091	0.103	0.097
25-34	0.043	0.065	0.053
35-44	0.026	0.050	0.037
45-54	0.021	0.043	0.031
55-64	0.019	0.035	0.027
65+	0.030	0.042	0.035
All ages	0.037	0.057	0.047

Notes: the reward to work is net of work expenses. The alternative to full-time work is assumed to be a 29-hour work schedule.

Table 4. Demographic groups subject to the implicit FTET

Marital status	Insurance/work status	Dependents	Percentage of all workweeks subject to implicit FTET	Average annualized subsidy foregone
Married	FT ESI w/o access through spouse	spouse & dependents	32.7%	$ 9,557
Unmarried	FT ESI	one person household	27.0%	$ 2,498
Unmarried	FT ESI	dependents	25.1%	$ 6,761
Married	FT ESI w/o access through spouse	spouse, no dependents	9.0%	$ 8,165
Unmarried	PT no-ESI, but FT coworkers have ESI	dependents	1.9%	$ 9,143
Unmarried	PT no-ESI, but FT coworkers have ESI	one person household	1.9%	$ 4,498
Married	PT no-ESI, but FT coworkers have ESI	all	0.9%	$ 10,461
Married	FT ESI w/o access through spouse	spouse on Medicare	1.5%	$ 6,065
Entire sample			100.0%	$ 6,821

Notes: FTET denotes the full-time employment tax. FT denotes full-time worker. ESI denotes employer-sponsored health insurance. Dollar amounts are in 2014 dollars after income and payroll taxes.

Table 5. ESI employees who would make more by working less

by work schedule, calendar year 2016.

Weekly work hours but for the implicit FTET	Number of ESI workers that would have more disposable income with a 29-hour: Ignoring work expense	Including work
30	70,429	72,804
31	6,133	6,133
32	67,752	75,114
33	5,024	5,024
34	3,982	3,982
35	260,032	300,151
36	94,236	111,669
37	64,761	78,875
38	109,566	131,565
39	7,493	9,369
40	2,395,046	3,243,606
more than 40	183,875	345,790
Total:	3,268,330	4,384,081

Notes: Work expenses are assumed to be $20 per 8 hours. The workers in the table are not subject to the employer penalty. Numbers of workers are national projections from the March 2012 CPS, and scaled for population growth through 2016 by a factor of 1.01^4. I assume that no workers have hourly earnings below $7.25.

Table 6. Propensity that the implicit FTET fully erases the reward to full-time work

among non-poor non-elderly heads and spouses working at least 30 hours and in households less than 400 percent FPL

	Unmarried		Married		
Age	Men	Women	Men	Women	All
less than 25	0.096	0.083	0.069	0.028	0.075
25-34	0.067	0.105	0.062	0.035	0.066
35-44	0.078	0.145	0.065	0.044	0.076
45-54	0.072	0.135	0.075	0.079	0.088
55-64	0.111	0.193	0.097	0.139	0.135
All ages	0.081	0.137	0.073	0.065	0.086

Note: the alternative to full-time work is assumed to be a 29-hour work schedule.

Table 7. Penalized employees who would make more by working less

Calendar year 2016. Dollar amounts in 2014 dollars. Work hours are measured from the March survey week.

Weekly work hours but for the penalty	Weekly penalty and work expenses, per hour worked past 29: Penalty only	Weekly penalty and work expenses, per hour worked past 29: Penalty + work expense	Number of penalized workers with hourly earnings at or below: Penalty only	Number of penalized workers with hourly earnings at or below: Penalty + work expense
30	$60	$63	1,273,160	1,275,285
31	$30	$33	40,334	40,334
32	$20	$23	594,092	637,838
33	$15	$18	62,486	68,590
34	$12	$15	55,009	63,529
35	$10	$13	572,629	783,948
36	$9	$11	137,906	212,802
37	$8	$10	49,781	84,891
38		$9	0	145,711
39		$9	0	36,718
40	less than $7.25	$8	0	1,750,362
41		$8	0	11,796
42		less than $7.25	0	0
		Total:	2,785,398	5,111,805

Notes: The penalty is expressed as a salary equivalent. Work expenses are assumed to be $20 per 8 hours
Numbers of workers are national projections from the March 2012 CPS, and scaled for population growth through 2016 by a factor of 1.01^4. I assume that no workers have hourly earnings below $7.25.

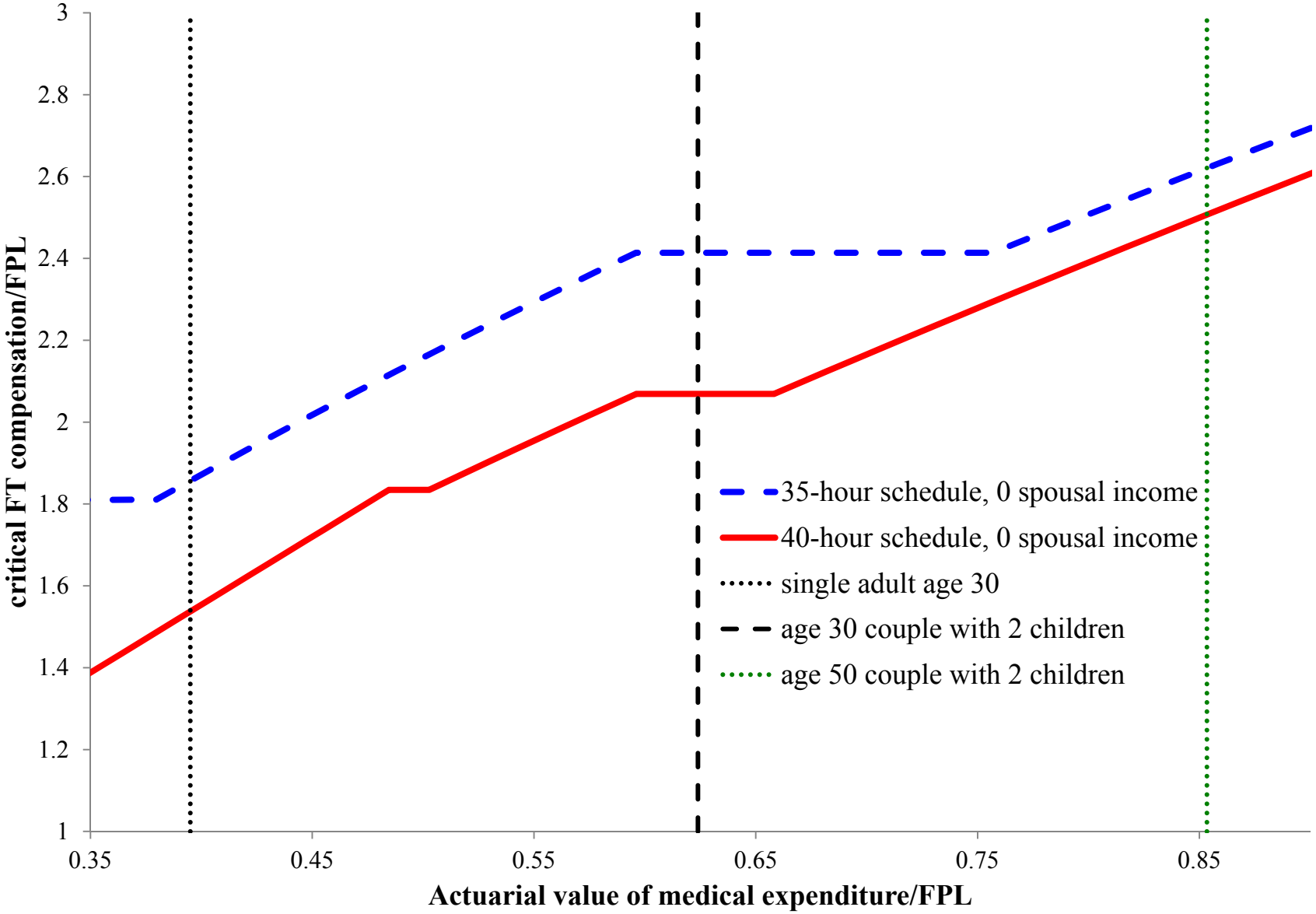
Table 8. ESI employees who would make more by working less

by work schedule, calendar year 2016. Work hours are measured from the March survey week.

Weekly work hours but for the implicit FTET	Number of ESI workers that would have more disposable income with a 29-hour: Ignoring work expense	Including work
30	167,022	171,730
31	24,607	25,275
32	339,506	367,569
33	37,244	41,329
34	34,852	42,397
35	215,111	242,968
36	136,323	145,945
37	77,462	89,001
38	115,464	143,116
39	33,853	39,687
40	1,940,583	2,656,920
more than 40	307,706	559,319
Total:	3,429,733	4,525,256

Notes: Work expenses are assumed to be $20 per 8 hours. The workers in the table are not subject to the employer penalty. Numbers of workers are national projections from the March 2012 CPS, and scaled for population growth through 2016 by a factor of 1.01^4. I assume that no workers have hourly earnings below $7.25.

Figure 1. Compensation below the critical value indicates 100+% FTET rate



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