The Fair Labor Standards Act

Worker Misclassification and the Hours and Earnings Effects of Expanded Coverage

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The Fair Labor Standards Act: Worker Misclassification and the Hours and Earnings Effects of Expanded Coverage

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Abstract

Using data from the RAND American Life Panel we quantify the frequency that employers violate the U.S. Fair Labor Standards Act's overtime rules. Among employees paid by the hour who work over 40 hours in a week, 19.0 percent were paid less than the "time-and-a-half" standard for overtime. Among salaried workers, those purportedly earning above a specified threshold and having professional-level duties that together exempt them from overtime compensation rules, 11.5 percent did not actually meet the exemption criteria. Using data from the Census Bureau's 2013 Current Population Survey, we estimate the effects of increasing the salary threshold for exemption. At the population mean for hours worked, we find no statistically significant effects on hours or earnings. However, workers above the 72^{nd} percentile of the hours distribution would lose between 5 and 10 overtime hours per week.

1 Overtime Pay in the United States

Whether or not a worker is paid for working overtime in the United States depends on whether the worker is exempt from provisions of the federal Fair Labor Standards Act (FLSA). The Act entitles employees to overtime pay if they work more than 40 hours in a week for the same employer. Overtime pay is set by the Act at 1.5 times the regular hourly wage rate. Exempt workers are paid a weekly salary that does not vary with the number of hours worked.

Generally, the FLSA permits exemption from overtime coverage if the worker's duties and responsibilities make it difficult to monitor the number of hours that he or she works, if the firm has difficulties measuring the short-term output that the worker produces, or if the worker has a significant amount of discretion. In practice, the rules governing exemptions are not always clear-cut, leaving room for interpretation. As a result, the distinction between exempt (salaried) and non-exempt (hourly) workers can be difficult to navigate for employers and employees and has also proven difficult for authorities to enforce.

Ambiguities about who is exempt from the Act also open the door to violations. In several prominent cases, large companies have been found guilty of having failed to pay overtime when it was due. For example, in 2012 Wal-Mart agreed to pay $4.8 million in back wages and damages to more than 4,500 employees after violations of the FLSA's overtime provisions were discovered by the U.S. Department of Labor (DOL). In other cases firms have tried to avoid responsibility for overtime pay by classifying workers as "independent contractors." The Kansas Supreme Court found "that under the undisputed facts presented, the FedEx delivery drivers are employees for purposes of the KWPA [Kansas Wage Payment Act]." [1] Consequently, hundreds of truck drivers who delivered packages for FedEx in Kansas were determined to be employees of the Tennessee-based firm and not independent contractors.

Apart from violations involving employee complaints against their employers, there may be cases where employers and employees arrive at an implicit understanding to interpret the law "loosely." This can result in lower costs for employers and more flexibility for the em-

[1] Kansas Supreme Court. Craig v. FedEx Ground Package Sys., Inc. October 3, 2014

ployees. For example, a worker may work more than 40 hours in the workweek by staying late to complete a task but may ask his supervisor if he can leave early in the following week as a way to be paid back. This "compensatory (comp) time" arrangement typically results in straight-time pay for overtime hours, thereby reducing labor costs for the employer, while the worker may get some valued daytime hours off. (However, employee advocates worry about negotiating asymmetry between employers and employees.)

Whether by honest misclassification, willful violation, or mutual agreement, some non-exempt workers are not paid for the overtime hours they work. For policy makers it is important to know the extent of violations for two reasons: firstly, if violations are widespread, increased enforcement of current laws could have some meaningful impact on employee income and might thus be worth pursuing; secondly, the extent of violations has important ramifications for the effectiveness of a change in the law. The following research questions emanate from these considerations and are answered in this paper:

- To what extent are non-exempt workers paid less than 1.5 times their straight-time rates for work in excess of 40 hours per week?
- What fraction of salaried employees is misclassified and ought to have been paid for the overtime hours they worked?
- How would employers change the hours their salaried employees work if criteria for exempt status were tightened? Would employment rates change? What would be the impact on workers' earnings?

2 Background: The Fair Labor Standards Act (FLSA)

The Fair Labor Standards Act (FLSA, or "the Act"), passed in 1938 as the final piece of the New Deal, was designed to bolster the earnings power of the American workforce. The Act did this with three provisions aimed at the labor market. First, the Act set a wage floor, the minimum wage, below which workers could not be paid. Second, it required paying workers overtime at a time-and-a-half premium. Third, the Act restricted the types of employment that children could undertake. Restrictions on child labor contracted labor supply and likely raised wages

in the lowest-paid portion of the labor market, [2] while the minimum wage likely reduced labor demand. Additionally the Act provided incentives for firms to hire more workers by raising the costs of labor after 40 hours of work per week. The fundamental idea behind the overtime rules was that by making employers pay an overtime premium, they would hire more workers rather than increase the hours of their existing employees above 40.[3]

In 1948 approximately 43 percent of the nonagricultural labor force worked in manufacturing, mining, and construction, making the law relatively easy to implement (agricultural workers were exempted from FLSA coverage throughout the 1950s) as compared to 13.7 percent who work in these industries in 2015.[4] However, as the United States shifted to a service economy, the distinctions between exempt and non-exempt status may have became more difficult to determine, and even in businesses traditionally associated with nonexempt jobs an increasing portion of these firms' workforces have become exempt from coverage.

In general, four types of workers are classified as exempt from the FLSA: executive, administrative, professional, and outside sales employees. Furthermore, to be exempt from the FLSA, an employee typically must be paid a salary - that is, a fixed amount regardless of hours worked - of no less than $455 per week. (Two states, California and New York, have established higher earnings thresholds.) Wage-earners in the public sector may be allowed by their contract to receive "comp time" in lieu of pay for overtime hours in excess of 40 hours per week (comp time is accrued at the time-and-a-half rate).[5]

Numerous other provisions allow exemptions to specific categories of workers in specific circumstances.[6] The complexity of the rules has led to ambiguity of interpretation. That, combined with employers' economic incentives to avoid overtime pay, has resulted in two types of violations: misclassification as exempt when the employee does not *primarily* perform

[2]Restrictions on child labor usually have as the primary rationale ensuring the children go to school, rather than to work.

[3]The 40-hour provision was not phased in until 1940; in 1938 the overtime premium had applied to hours above 45 in the work week.

[4]www.bea.gov/scb/pdf/1948/0548cont.pdf and April 2015 estimate from www.bls.gov/news.release/empsit.t17.htm

[5]For a full discussion of overtime exemptions and a list of particular occupations/industries that are exempt see http://www.dol.gov/elaws/esa/flsa/overtime/info.htm (last accessed 5 Aug 2014).

[6]See http://www.dol.gov/elaws/esa/flsa/overtime/info.htm (last accessed 5 Aug 2014).

exempt duties, and the failure to pay overtime at the appropriate rate when it is due. An employer can avoid overtime pay by eliminating tasks that lead to longer hours of work and overtime, investing in labor-saving capital to shift the work to machines, hiring additional workers to do the tasks at straight-time pay, or reclassifying non-exempt workers as exempt. The employer's marginal cost of hours of work in excess of 40 is zero for an exempt worker versus 150 percent of the hourly wage for a non-exempt worker (as compared with hiring more hourly workers and paying them straight time). For employers facing essential tasks and using available technology, the employer has an incentive to opt for a zero-marginal cost exempt worker rather than a 150-percent hourly wage premium worker. For jobs in the gray zone of ambiguity between exempt and non-exempt status, this incentive favors firms classifying jobs as exempt.

While the incentives are clear, the extent that they have been pursued has been difficult to quantify. Mostly this is due to lack of data that are representative of the U.S. population and that have the necessary information to determine misclassification or the specifics of overtime remuneration (or lack thereof). Ehrenberg and Schumann (1982), using data from the May 1978 Current Population Survey (CPS) and the 1977 Michigan Quality of Employment Survey, found that approximately 25 percent of nonexempt workers who are working overtime fail to receive a premium of at least time-and-a-half. On breaking the sample down demographically, they found no evidence that race or sex is a significant predictor of violation. However, violations are less common among workers with more education, and among unionized workers. It is difficult to know how relevant these results are to current labor markets and policy formation, given that the data are nearly 40 years old.

3 Summary of Approach and Findings

In this paper we used unique, population-representative data collected in the RAND American Life Panel (ALP) in the spring of 2014. We found that 19 percent of hourly employees who work overtime are not paid in accordance with the law for the overtime hours they worked.

Lack of compliance may be partly due to the difficulty firms have in implementing the law - as evidenced by the number of human resources guides and legal advice available.[7] However, difficult compliance is unlikely to explain a 19 percent rate of failure to pay hourly workers properly for overtime.

We also found that 11.5 percent of salaried workers were classified as exempt by their employer although they did not meet the criteria for being so. Misclassifying employees as exempt leads to overtime hours without remuneration among salaried workers when remuneration was in fact due. Many hourly workers (36 percent) are subject to pressure from the firm to avoid working more than 40 hours in a single workweek.

Finally, we examine the hours and employment effects of raising the earnings threshold for FLSA exemption to above $455 per week. That is, we simulate what would happen to currently salaried workers if the FLSA threshold were increased and they were reclassified as hourly employees. We simulate increases in the earnings thresholds to $600, $750 and $900 per week. The current administration has proposed such an increase, to bring the earnings threshold into line with historical averages, and to exempt fewer employees from FLSA coverage. Based on RAND ALP and CPS data, our simulations use a quantile treatment regression to estimate the extent to which reclassification from salaried to hourly affects weekly work hours.

Overall, we find a reduction in work hours when employees' change status from salaried to hourly, with larger effect sizes for workers with large numbers of overtime hours. This is consistent with employers wanting to decrease hours of workers for whom the marginal cost of an additional work hour increased from zero to 150 percent of the hourly wage rate. Using these estimates we simulate the effect of an increase in the FLSA earnings threshold for exemption. Overall we find minimal effects on average earnings in the short run. Reductions in estimated weekly work hours are concentrated in the upper quartile of the work-hours distribution. We suspect that long-run adjustments will lead to reduced hours and earnings for salaried workers who currently work the most hours, as well as to modest gains in employment. Finally, we

[7] See for example https://www.thompson.com/public/most-popular-resources.jsp?tagid=35 and http://www.ghjhlaw.com/NewsPublications/Articles?find=11211 [both sites last accessed 15 Feb 2015].

discuss how raising the wage threshold simplifies enforcement; it may be preferable to have fewer workers subject to the duties test, since it is open to interpretation.

4 The Effects of Overtime Pay Regulation on Wages

Do firms respond to overtime pay regulation by offering lower regular wages for workers expected to work overtime hours? A firm that knows it will require workers to work 50 hours per week may offer employees hourly pay rates that fully compensate for the overtime premium. Trejo (1991) makes the case clear: Suppose that, in the absence of overtime regulation an employee works 50 hours per week and earns $550 per week or $11 per hour. With FLSA regulations in effect, the firm could offer a regular wage of $10 per hour and pay a $5-per-hour overtime premium for the 10 overtime hours per week. Then, $11 x 50 = ($10 x 40) + ($15 x 10), and the weekly earnings of the worker remain the same, $550. Few researchers have investigated the extent that firms can avoid the overtime premium by adjusting wages downward. Using data from 1976-1978, Trejo (1991) estimates that the overtime wage premium averages 0.16 (as opposed to 0.5).[8] This suggests that firms are adjusting straight-time wages downward substantially when faced with paying an overtime premium.The finding also implies that employers were able to find workers willing to accept the wage/hours combination at a premium of 0.16, much less than the fifty percent FLSA premium. Given workers' and employers' response to the FLSA for jobs with predictable overtime, the implication is that the full fifty-percent premium will be paid when overtime is not predictable and the employer cannot make an informal *quid pro quo* arrangement of, say, fewer hours next week for overtime this week. Trejo identifies the effect relative to those who do not receive the overtime premium, but data limitations have made it difficult to determine who is exempt and who is legally covered, but not paid for their overtime hours. Employer efforts to avoid overtime payments lower the estimate of the overtime premium effect and may have resulted in a downward bias of the results presented by Trejo (1991). In other work Trejo (2003) estimates the effect of expanding

[8] A full overtime premium would be 0.5 since the estimate is net of straight-time pay, reflecting only the overtime premium.

FLSA coverage on industry-specific use of overtime. Trejo finds no effect on overtime hours in industries that experienced expanded FLSA coverage, and argues that this is consistent with full wage adjustment on overtime pay - with employers recovering the full overtime premium by driving down regular-time wage rates.

Other work by Costa (2000), using data from the early period of FLSA implementation from 1938 to about 1950 finds that comparisons of retail sales workers (not covered by FLSA) to wholesale trade workers (covered) shows that the Act reduced the length of the standard work week and lowered straight-time wages, but that this adjustment did not completely offset the overtime provisions. Finally, Barkume (2010), using data from 2004, finds that adjustments on the extensive margin (hiring) result in a reallocation of labor between workers and hours in response to the relative prices of straight-time workers and overtime hours. This is consistent with the intention of the FLSA to reduce overtime hours and increase employment. Barkume also finds that lower wages are associated with jobs where overtime is more common, and that overtime is less common for minimum-wage workers (owing to the fact that the wage floor makes it difficult to adjust wages downward to achieve a wage/hours contract). These results suggest that overtime pay regulation influences the structure of compensation, and that firms have not been able to escape the law's intent by fully adjusting wages to arrive at the same weekly pay.

5 Quantifying Violations of the FSLA

5.1 Data and Survey Instrument

To obtain data on issues related to overtime pay and misclassification of exempt workers, we designed and fielded a survey module in the RAND American Life Panel (ALP). The ALP is an ongoing Internet panel that is representative of the U.S. population age 18 and older. It has been in operation since 2006 with periodic sample refreshments and expansions, resulting in a sample of approximately 5,000 individuals. Respondents without access to the Internet or a computer at the time of recruitment are provided with them free of charge to ensure that such

access limitations do not result in sample selection.[9] Every month ALP members are asked to participate in one or two surveys for which they are compensated. For each survey, raking weights using demographic characteristics (and household income) are constructed to adjust for unit nonresponse to the survey, matching to CPS characteristics. The ALP has conducted a large number of longitudinal surveys of its respondents, yielding information on a wide range of covariates that is available for merging with other surveys. The survey module that we analyze in this paper was fielded in April 2014 (MS379) as a special module of one of the ALP Financial Crisis Surveys, which have tracked the experience of American households during the Great Recession and its aftermath.[10] A total of 3,723 ALP respondents were sampled and 2,882 of them completed the April 2014 survey, for a response rate of 77.4 percent. Of that total, 1,572 respondents indicated that they were currently working for pay; they were further asked

- whether the respondent is self-employed or working for someone else
- whether he or she is employed by the government, a private company or a nonprofit organization
- whether he or she is a member of a union
- how many hours does he or she work in a single workweek
- his or her typical earnings
- whether he or she is paid hourly or a salary
- whether he or she has job responsibilities that would justify exempt status
- whether he or she receives any overtime pay and at what rate or in what form of compensation
- how frequently he or she works overtime
- whether he or she feels pressure from the employer to avoid working overtime
- whether the employer requires the respondent to work overtime, even if he or she would prefer not to.

[9] Several different recruitment approaches have been employed over the years, following scientific methods.

[10] The ALP Financial Crisis Surveys; Rohwedder and Hurd: first wave collected November 2008. Between May 2009 and April 2013 the ALP Financial Crisis Surveys were conducted every month. Since April 2013 the ALP Financial Crisis Surveys have been fielded every quarter.

The full text of the survey module is included in the Appendix.

To verify that ALP earnings and hours data are representative of the general population, we compare them with those in the CPS - a monthly household survey conducted by the Bureau of Labor Statistics to measure labor force participation and employment. Approximately 60,000 households per month are interviewed, with a single survey respondent providing information (including labor market activity) for all members of the household. Each household in the CPS is interviewed for 4 consecutive months, exits the survey for 8 months, and then returns for 4 additional months. Households in the 4^{th} and 16^{th} month are commonly known as the Outgoing Rotation Groups (ORG). In this analysis we use only the ORG data because questions on usual weekly hours and earnings are asked only of households in their 4^{th} and 8^{th} interviews. These data are designed to be nationally representative, thus facilitating both state-level and individual-level demographic analysis. In this analysis we use the ORG files from 2013.

5.2 Characteristics of Hourly and Salaried Workers

We determine whether a worker is salaried or hourly by respondents' answers to the question:

> "Some people are paid for each hour that they work, and others are paid a fixed amount (salary) regardless of the number of hours they work. Which of these best describes how your employer pays you?
>
> 1. Hourly
> 2. Salary"

Overall 60.8 percent of workers are paid by the hour and the other 39.2 percent are salaried.

5.2.1 Demographic Characteristics

In Table 1 we compare the demographic characteristics of hourly and salaried workers. We find that women, racial and ethnic minorities, those with less education, and workers in the private sector are more likely to be classified as hourly workers. These estimates are for workers who report their main job as **not** self-employed. The most important determinant of hourly

employment is education. For workers with a high school education or less, 85 percent work as hourly employees; restricting the sample to workers over 20 years old does not alter this finding.

To examine the statistical significance of these characteristics for the likelihood of working in an hourly job, we present in Table 2 the results from a probit model of working hourly. We estimate two models, one for all workers and one for those who work full time (since most part-time workers are paid hourly). Adjusting for age and full-time work, as well as other demographics, sex is a statistically significant predictor of the likelihood of hourly pay in the model for all workers, but is no longer a statistically significant predictor once we restrict the sample to full-time workers. Marital status, education (having a college degree), age, and union membership are all statistically significant predictors in both the full sample and the sub-sample of full-time workers. However, race (African-American) is only significant in the full-time specification.

5.2.2 Earnings and Hours Worked among Hourly and Salaried Workers

In Table 3 we examine the differences in weekly earnings and hours for workers who are paid on an hourly or salaried basis. Firms that pay workers a salary face a zero marginal cost for an additional hour of work, and as a consequence we should observe large differences in hours worked for these groups. For all workers and for just full-time or part-time workers, the ratio of weekly wages between those paid hourly and those paid on a salary basis is roughly one to two. This relationship holds (roughly) at the 25th, 50th and 75th percentiles. For example, the median earnings for a full-time hourly employee are $612 per week while the median earnings for a full-time salaried worker are $1,129. For comparison, we include earnings estimates from the CPS-ORG (2013) in nominal dollars. The relationship is very similar: the point estimates from the RAND-ALP and the CPS-ORG are nearly identical in most cases.

In the second panel of Table 3, we compare differences in the hours distribution for hourly and salaried workers and find that the ALP and CPS estimates are very close. On average,

Table 1: Sex, Race, Education, Age, Sector, and Union Status by Classification

		Hourly	Salaried
All		**60.8**	**39.2**
Sex			
	Female	64.1	35.9
	Male	57.3	42.7
Race/Ethnicity			
	White	58.6	41.4
	Black	68.0	32.0
	Latino	66.4	33.6
	Other	63.2	36.8
Education			
	HS or less	85.1	14.9
	Some College	73.2	26.8
	College +	29.6	70.4
Age			
	20-34	63.9	36.1
	35-54	57.2	42.8
	55+	63.4	36.6
Married			
	Yes	54.5	45.5
	No	69.7	30.3
Sector			
	Public	53.4	46.6
	Private	64.6	35.4
	Non-profit	52.0	48.0
Union			
	Yes	66.7	33.3
	No	59.5	40.5
N		881	637

Note: Demographics sum to 100 across each row. For example, 64.1 percent of women work in hourly jobs. compared to 57.3 percent of men. Authors' analysis of RAND American Life Panel April 2014. Results weighted using raked sample weights.

Table 2: Probit Estimate for Pr(Paid Hourly)

	All Workers	Full-time Workers
Female	0.0740	0.0536
	(0.85)	(0.57)
Full time hours	-1.1633**	-
	(-7.84)	
White	-	-
Black	0.2592	0.3698*
	(1.63)	(2.29)
Latino	0.1389	0.2372
	(0.87)	(1.51)
Other	0.0923	0.1012
	(0.65)	(0.65)
Less than HS	-	-
High School	0.0109	-0.2018
	(0.03)	(-0.50)
Some College	-0.4848	-0.6834+
	(-1.33)	(-1.70)
Associate	-0.4399	-0.7248+
	(-1.19)	(-1.78)
BA/BS	-1.4396**	-1.6922**
	(-3.99)	(-4.26)
Adv. Degree	-1.7702**	-2.1062**
	(-4.78)	(-5.18)
18-34	-	-
35-54	-0.3393**	-0.3121**
	(-3.36)	(-2.87)
55+	-0.1446	-0.1749
	(-1.21)	(-1.31)
Public	-	-
Private	0.1578	0.1230
	(1.43)	(1.01)
Nonprofit	0.0206	0.0332
	(0.13)	(0.19)
Union member	0.3016*	0.3599**
	(2.46)	(2.74)
Constant	1.9929**	1.0603**
	(4.74)	(2.60)
Observations	1,459	1,174

t statistics in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

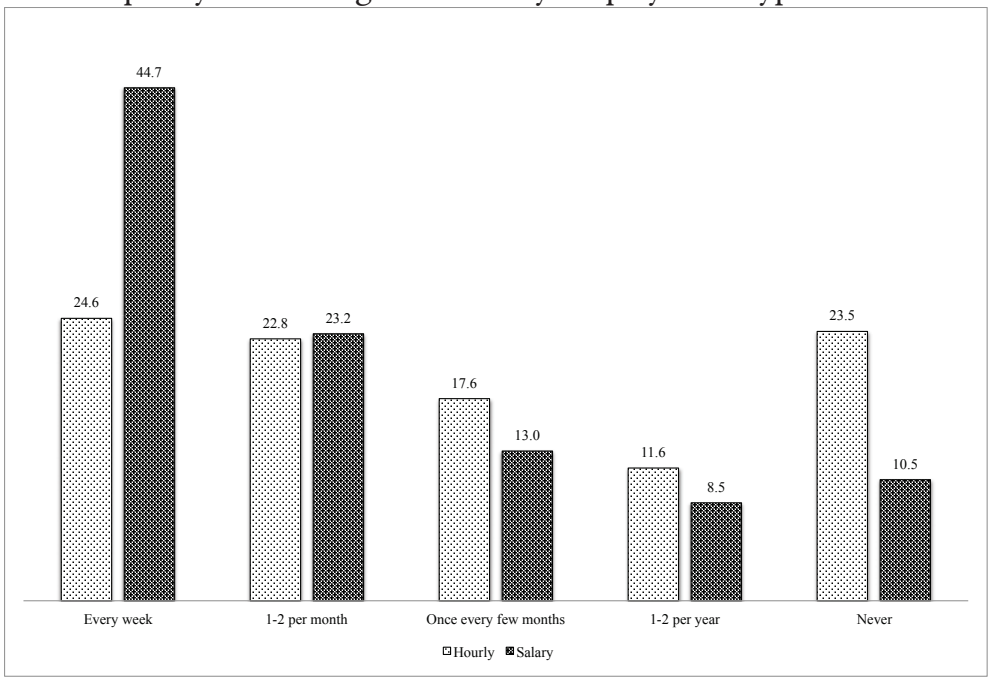
Table 3: Distribution of Workers' Weekly Earnings and Hours, by Classification

			ALP		CPS	
			Hourly	Salaried	Hourly	Salaried
Earnings ($)						
	All	Average	603	1,291	612	1,188
		25th percentile	300	769	320	673
		Median	500	1,100	500	1,000
		75th percentile	769	1,590	770	1,538
	Full-time	Average	718	1,323	712	1,245
		25th percentile	438	792	405	730
		Median	612	1,129	600	1,058
		75th percentile	878	1,615	871	1,625
	Part-time	Average	299	694	283	523
		25th percentile	135	277	150	190
		Median	225	430	225	346
		75th percentile	310	808	320	635
Hours						
	All	Average	36.5	44.0	35.6	42.0
		25th percentile	30	40	31	40
		Median	40	40	40	40
		75th percentile	40	50	40	45
	Full-time	Average	42.1	45.0	40.9	43.7
		25th percentile	40	40	40	40
		Median	40	40	40	40
		75th percentile	41	50	40	45
	Part-time	Average	21.9	24.9	21.7	21.8
		25th percentile	16	20	16	20
		Median	21	30	21	22
		75th percentile	30	30	30	30
N			881	637	97,582	68,296

Note: Authors' analysis of RAND American Life Panel (April 2014) and Current Population Survey - Outgoing Rotation Group files (2013). ALP results weighted using raked sample weights; CPS results using ORG weights. Full-time is defined as working 35 hours or more in a workweek.

full-time salaried employees work approximately 3 hours per week more than hourly workers. However, this difference is driven by salaried workers in the tail of the hours distribution who work 50 hours per week at the 75th percentile. At percentiles below the 75th, hourly workers generally work as many hours as salaried workers. For part-time workers, median hours are 21 per week for hourly workers and 30 per week for salaried. Since part-time work is defined as fewer than 35 hours per week, the upper end of the hours distribution is truncated, so at the 75th percentile both hourly and salaried part-time employees work 30 hours per week.

Figure 1: Frequency of Working Overtime by Employment Type: Full-time Workers



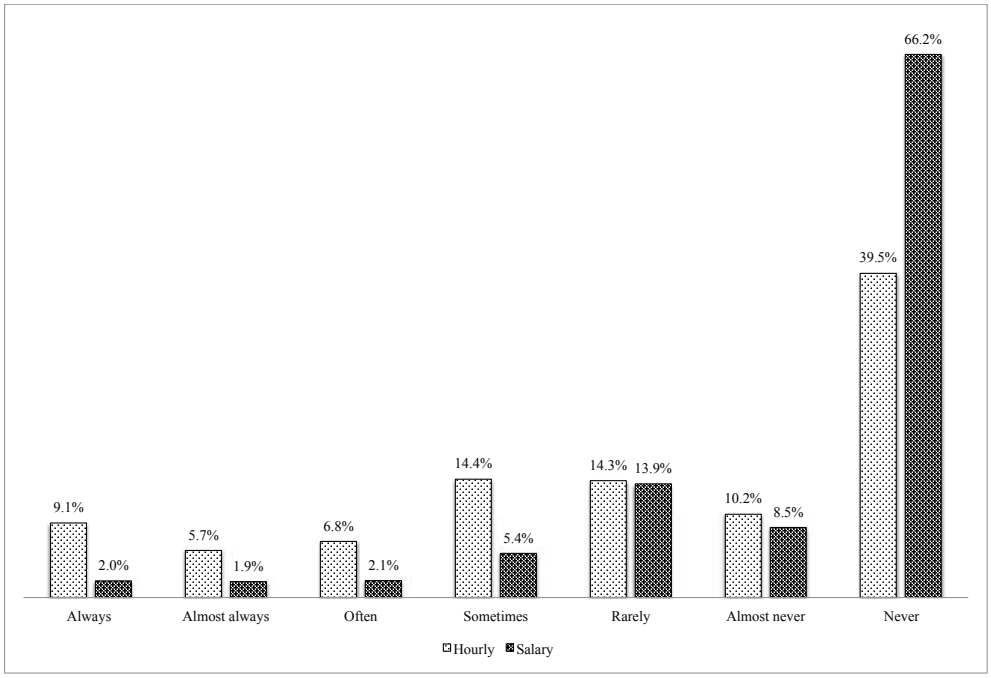
Note: Authors' analysis of the RAND American Life Panel (April 2014) using raked sample weights. Full-time is 35 hours or more per week. Note that columns sum to 100 percent for each employment type: hourly and salaried.

There is, however, one difference in the ALP as compared to the CPS: the 75th percentile of hours of work among full-time salaried workers shows a five hour difference between the surveys; the ALP estimates 50 hours for this group while the CPS estimates 45 hours. As we discuss later in the paper, we use the CPS estimates to simulate the effects of raising the FLSA exemption threshold, due to larger sample size and smaller error variance in the CPS data. This also provides a more conservative estimate of the value of uncompensated overtime.

We also note that there is considerable evidence that hours reports by individuals do not match company records. The research literature suggests there is a 4-6 percent discrepancy in mean reported hours - with employers regularly reporting fewer hours (see Bound, Brown and Mathiowetz (2001) for a discussion of measurement error in hours data pp.3784-3791). The best evidence for this is quite old - a special supplement of the CPS from 1977 that provides an exact match of employees to their employer. In analyzing this data Mellow and Sider (1983) find a correlation between employees' and employers' reported hours of .78; with employers reporting approximately 4 percent fewer hours worked on average. Since 1977, the US labor market has experienced significant increases in the fraction of workers who are exempt from the FLSA and for salaried workers, employers may not observe all of their hours of work. As a result employer records may not accurately reflect employees' hours of work, and therefore may not be a suitable benchmark. Finally, the finding that employer and employee accounts of hours worked to not match is especially concerning if hours over-reporting is more common at the upper tail of the hours distribution. As a result of over-reporting of hours, our estimates of total uncompensated overtime are likely to be an upper bound for hourly employees. To address this issue we offer a second estimate using a truncated hours distribution and still find large total effects on household income resulting from uncompensated overtime.

Given the difference between hourly and salaried workers in the marginal cost of an additional hour of work, one would expect to see a large difference in the frequencies with which the two groups work overtime. Figure 1 is clearly consistent with the notion that employers respond to economic incentives. Salaried workers (who are not paid overtime) are nearly twice as likely to report working more than 40 hours in a week as hourly workers. At the other end of the frequency distribution, just over 10 percent of salaried workers report never working more than 40 hours in a week, while 23.5 percent of hourly employees report never working more than 40 hours per week. In general, working hours in excess of 40 per week occurs more frequently for salaried than for hourly employees, with more than two-thirds of salaried workers indicating that they work more than 40 hours per week at least once per month.

Figure 2: Frequency of Feeling Pressure from Employer to Avoid Overtime: Full-time Workers



Note: Authors' analysis of the RAND American Life Panel (April 2014) using raked sample weights. Full-time is 35 hours or more per week. Note that columns sum to 100 percent for each employment type: hourly and salaried.

In Figure 2 we present evidence reinforcing the findings in Figure 1 regarding employer response to economic incentives. The results in Figure 2 are from our inquiry as to whether workers feel pressure to avoid working overtime hours. Our results are for full-time workers. As expected, we find that hourly workers are much more likely to report feeling pressure from their employers to avoid working overtime. Summing over the four most frequent categories (always, almost always, often, sometimes) we find that 36 percent of hourly employees "sometimes" or more often feel pressure to avoid working overtime, while only 11.4 percent of salaried workers feel that pressure.

5.3 Violations of the FLSA

5.3.1 Approach to Estimating Failure to Compensate Overtime When It is Due

A worker who is paid hourly is non-exempt from the FLSA. The DOL Wage and Hour Division describes the salary basis requirement as follows:

> "Being paid on a salary basis means an employee regularly receives a predetermined amount of compensation each pay period on a weekly, or less frequent, basis. The predetermined amount cannot be reduced because of variations in the quality or quantity of the employee's work. Subject to exceptions listed below,[11] an exempt employee must receive the full salary for any week in which the employee performs any work, regardless of the number of days or hours worked." [12]

Consequently, workers who say that they are paid "for each hour that they work" are not exempt under the FLSA since that would violate the salary basis test.

Economic incentives motivating employers to avoid overtime hours for hourly workers are only effective when employers abide by the law. To determine the level of compliance with the

[11] Deductions from pay are permissible when an exempt employee: is absent from work for one or more full days for personal reasons other than sickness or disability; for absences of one or more full days due to sickness or disability if the deduction is made in accordance with a bona fide plan, policy or practice of providing compensation for salary lost due to illness; to offset amounts employees receive as jury or witness fees, or for military pay; for penalties imposed in good faith for infractions of safety rules of major significance; or for unpaid disciplinary suspensions of one or more full days imposed in good faith for workplace conduct rule infractions. Also, an employer is not required to pay the full salary in the initial or terminal week of employment, or for weeks in which an exempt employee takes unpaid leave under the Family and Medical Leave Act.

[12] See `http://www.dol.gov/whd/overtime/fs17g_salary.htm` (last accessed 13 Aug 2014).

FLSA we asked a series of questions directly related to this issue. "If you work more than 40 hours in a single workweek (Monday through Sunday) for the same employer, do you receive additional pay or any other form of compensation?"

Respondents could choose one from the following answer categories:

1. Yes, I receive additional pay in my next paycheck.
2. Yes, I receive comp time (flextime, additional vacation time, or other time).
3. No, I receive no additional compensation in my next paycheck when working more than 40 hours in the workweek.
4. I never work more than 40 hours in one week.

Where respondents indicate that they receive additional pay, we follow up with a question about their overtime rate of pay. "When you work overtime (more than 40 hours in a single workweek for the same employer), how much are you paid for your overtime hours?" Again we offer four possible responses:

1. normal rate (same as for any other hours I work)
2. time-and-a-half (1.5 times my normal hourly rate)
3. double time (2 times my normal hourly rate)
4. other - please specify

We classify those with unpaid overtime in two categories: those who are not paid any additional income for overtime hours (in excess of 40 in the same week for the same employer), and those who are not paid the proper amount of overtime. In this second case we count those who were paid straight-time and those who were given "comp time" in lieu of pay. In the cost analysis (at the end of the paper) we explicitly take into consideration the differences in underpayment for these two types of overtime violations. When calculating an overall violation rate we combine the two measures.

If a worker *never* works overtime then then there is no risk of overtime pay violations. Secondly, we infer no error or misclassification if workers are paid straight-time instead of time-and-a-half as long as they work in the public sector and are paid "comp time." [13]

[13]Public sector workers are allowed to receive time off in lieu of overtime; however, time off must accrue at a time-and-a-half rate. For unionized workers in the public sector, contracts must explicitly stipulate that comp time can be awarded in lieu of pay if this provision is to be valid. Because we do not observe this information we assume that all public employees can be paid comp time.

5.3.2 Approach to Estimating Misclassification of Salaried Workers

A second form of FLSA violation occurs if a firm pays a worker a salary (fixed amount regardless of hours worked) and does not compensate a worker for overtime hours when the worker either a) does not earn enough to qualify as a salaried employee, or b) does not perform the duties necessary to be classified as exempt from the FLSA. In this case the worker *should* be classified as non-exempt and paid an overtime premium of time-and-a-half. We follow this rule in classifying our respondents. Specifically, for workers earning more than $455 per week, we apply a duties test consistent with that specified by DOL. In our survey we asked whether the worker does *any* of the following:

- Supervises at least 2 other employees
- Hires/fires employees or assesses job performance
- Makes managerial, financial, or legally binding business decisions without input from his/her boss
- Performs intellectual tasks requiring at least a college degree
- Develops new products or patents or authors creative works
- Sells products to customers at locations outside of the workplace
- Works as a computer programmer
- None of the above

If a worker indicates that he or she does not perform any of these job duties by selecting the option "none of the above," and is paid a fixed salary, then we infer the worker should not be classified as exempt by his or her employer, and if that worker is so treated, then he or she is misclassified. We also determine whether the person earned more than $455; if not, and if the worker was classified as exempt, again, we inferred misclassification. For both these tests, we assumed that the firm classified the worker as exempt if the worker reported no overtime compensation.

5.3.3 Results

Table 4 summarizes the results of our investigation of overtime payment errors and salary misclassifications. Our results show that one of every eight hourly workers is not properly compensated for overtime worked; a similar fraction of salaried employees is misclassified as not falling under the FLSA's protections. It is worth noting that under a Trejo-type model - where employers fully adjust to FLSA by decreasing the base wage - one would always expect overtime to be paid in full at time-and-a-half. However, Trejo found that the wage adjustment to FLSA was not full - the overtime premium was 0.16 on average (instead of .5). Hence, employers still had an incentive to avoid paying overtime. We can infer from Trejo's findings and the evidence in Table 4 that employers do not fully adjust base wages, and that they retain an incentive to forego paying overtime when it is due.

Table 4: Percentage of Hourly Workers Improperly Paid or Salaried Workers Misclassified

	Hourly *Improper Overtime Pay*	Salary *Misclassified as Salaried*
Overall	12.1%	11.5%
N	869	637

Note: Overtime error consists of workers who are paid hourly and either a) are not being paid overtime, or b) are not paid the correct amount (time-and-a-half). Salary errors consist of workers whose earnings are below $450 per week and who are not paid overtime, or those who have none of the job duties to be classified as exempt and are not paid overtime. Authors' analysis of the RAND American Life Panel (April 2014) using raked sample weights.

To investigate which workers are more likely to be paid improperly for their overtime we present the rates of improper payment and misclassification by demographic characteristics, restricting the sample to those who ever work overtime. Our main findings, shown in Table 4 and in further detail in Table 5, are first, that nearly one in five (19 percent) hourly workers who work overtime are either not paid overtime, or are paid the wrong amount (straight time pay instead of time-and-a-half or comp time in the public sector), and second, more than one in ten (11 percent) salaried workers are misclassified and in effect are non-exempt workers

Table 5: Hourly Workers' Improper Payment Rate (Conditional on Working Overtime) and Salaried Workers' Misclassification Rates (by Sex, Race, Education, and Age)

		Hourly	Salary
All (conditional on working overtime)		19.0%	
All (salaried)			11.5%
Sex			
	Female	19.8	14.1
	Male	18.4	9.3
Race/Ethnicity			
	White	13.6	8.9
	Black	26.5	30.2
	Latino	37.9	15.1
	Other	26.4	13.9
Education			
	HS or less	19.2	15.9
	Some College	19.5	13.6
	College +	17.7	10.1
Age			
	20-34	20.7	14.5
	35-54	18.3	10.9
	55+	17.6	9.8
Sector			
	Public	22.8	12.4
	Private	16.6	11.1
	Non-profit	30.7	11.7
Union			
	Yes	17.1	8.2
	No	19.7	12.1
N		522	637

Note: Overtime error consists of workers who are paid hourly and who occasionally work overtime and either a) are not being paid overtime, or b) are not paid the correct amount (time-and-a-half). Salary errors consist of workers who identify as being paid a salary but whose earnings are below $450 per week and who are not paid overtime, or those who have none of the job duties to be classified as exempt and are not paid overtime. Authors' analysis of the RAND American Life Panel (April 2014) using raked sample weights.

who should be paid overtime. Women are slightly less likely than men to be paid for their overtime work, while African-Americans and Latinos are substantially more likely than whites to be underpaid for their overtime hours. Younger workers are more likely to be underpaid or to receive no overtime premium for the hours they work. While women, ethnic and racial minorities and the young may have less economic power and are more vulnerable to being subject to overtime violations, some other results are not so easily explained. In particular, workers with a college degree are considerably *less* likely to be paid for their overtime work. However, college-educated workers who have errors in overtime pay are more likely to have higher hourly earnings, suggesting that they are partially compensated for no overtime pay by a higher straight-time pay rate. These results are very similar to findings by Ehrenberg and Schumann (1982) discussed earlier. Recall that, according to that study, approximately 25 percent of hourly employees working overtime fail to receive a premium of at least time-and-a-half.

5.3.4 Lost Wages Due to Overtime Violations

In Table 6 we estimate the annual cost of overtime violations. Our estimate is conservative in that it considers only those who work overtime every week. We find that 19.5 percent of hourly workers in our sample report working overtime each week. Of them, 20.0 percent report not being paid any additional income. As a conservative measure we exclude from the remainder of the analysis shown in Table 6 those who report being paid straight time or are given comp time.

We find that 2.8 million workers are not paid for their overtime each week, and that the annual income lost for each of these workers is $10,886 per year. Importantly this is a lower bound in that only those who are not paid for their overtime are included in this estimate. Other workers who are paid in "comp time" or "straight time" are excluded as are those who work overtime less than every week. But even if we draw from lower-bound wage and hours estimates – say, the 25th percentiles of the wage and hours distributions for this population

Table 6: Lost Wages Due to Overtime Violations - Annual

Number of Hourly Workers (18+)	72,590,000
Percent Working Overtime Every Week	x 19.47%
Number of Workers with OT Every Week	= 14,133,000
Percent Not Paid for Overtime	x 19.96%
Number of Workers Not Paid Overtime Each Week	= 2,821,000
Among Those Not Paid OT Each Week:	
Average Hourly Wage	$18.34
Overtime Premium	x 1.5
Overtime Hours Worked Each Week (avg.)	x 7.61
Number of Uncompensated Weeks per Year	x 52
Annual Uncompensated Overtime per Worker	= $10,886
Annual Uncompensated Overtime (2.821 million x $10,886)	= **$30.7 billion**

Note: Authors' analysis of RAND American Life Panel (April 2014) and Bureau of Labor Statistics Workforce data. ALP results weighted using raked sample weights.

- the resulting loss for a worker with only 4 uncompensated hours per week, working at $12 per hour, would amount to $3,744 per year. Our estimates of lost wages are substantively large in that they would lift many low-income households out of poverty if they were paid. Part of the reason for this large effect is the number of hours of overtime worked on average for this group (7.61) and the relatively high average hourly wage ($18.34/hour).

The total value of this unpaid labor is approximately $30.7 billion per year. We should note, however, that even if full compliance with the FLSA was achieved, this wage bill is unlikely to be paid, since in the long run, firms would significantly reduce their overtime hours for this population.

6 Employment and Earnings Effects of Raising the FLSA-Exempt Threshold

In this section we focus on estimating the effects of raising the earnings threshold for classifying a worker as exempt from FLSA overtime compensation rules. Recall that to be classified as exempt from the FLSA, workers must earn a salary of at least $455, regardless of their job

duties.[14] The salary threshold rate is infrequently updated; it has been changed only eight times in the history of the FLSA, and only once since 1975 (Bernstein and Eisenbrey, 2013).

There have been multiple calls to raise the salary threshold so as to reduce the number of workers exempted from the FLSA, thereby entitling them to overtime pay. For example, Bernstein and Eisenbrey (2013) suggest raising the salary threshold to $970 per week (or $50,440 per year), arguing that this would adjust the 1975 level for inflation. Raising the salary threshold would automatically increase the number of workers who were non-exempt - making them eligible for overtime pay (although specific exemptions from the regulations could still apply). Secondly, raising the threshold reduces the scope for misclassification and therewith facilitates enforcement since fewer workers would be eligible for exemption.

The direct implication of increasing the salary threshold would be to change the classification of salaried workers to hourly workers for those whose salary is between the current and prospective thresholds and who meet the job duties test. (Those who do not meet that test are hourly now and would remain so even if they earn above the statutory threshold.) Reclassification from salaried to hourly would make the affected workers eligible for overtime pay. In the absence of any other changes, more workers would be paid overtime, and earnings would increase. However, as Trejo predicts, employers would adapt to reduce the costliness of such a change. In what follows, we estimate the employment and earnings effects of changing the salary threshold for exemption.

We wish to understand how different salary thresholds alter both wages earned by currently employed workers and the number of workers that firms would have to hire to fill in for the reduced hours. We simulate three alternative salary threshold levels–$600, $750, and $900 per week. To conduct the analysis, we make a number of assumptions about firm behavior. First we assume that there are no productivity gains resulting from an increase in FLSA coverage. This implies that firms are currently utilizing labor efficiently and that aggregate hours at the firm will not decline. Therefore we assume that a firm will not reduce the total number of work

[14] The salary requirement of $455 is not applicable for outside sales employees, teachers, and employees practicing law or medicine.

hours, merely that it will shift from higher-cost overtime workers to lower-cost straight-time workers. One potential problem with this assumption is that if a firm's fixed costs (e.g., search and hiring costs) are high, then adding new workers to the payroll could be more expensive in the short run than paying overtime to current workers. In this case firms may opt to pay overtime. For firms with high fixed costs of hiring, aggregate hours could fall owing to the increase in labor costs, but for simplicity we assume that this is not the case.[15] In the long run, however, firms are likely to increase hiring rather than continue to pay an overtime premium.

Second, we assume that workers who are "close" to the new (and higher) salary threshold will experience an increase in salary if a small raise is the lower-cost option under the new law. For example, assume a worker is earning $600 per week and the salary threshold is raised to $650. If the employee regularly works 5 hours of overtime, then it could be less costly for the firm to raise the worker's salary to $650 and have him or her continue working 45 hours per week than it would be to hire someone else and pay that person straight time for 5 hours - even if the cost of hiring was zero. To see this, assume the worker's average hourly pay is $15 per hour (on a 40-hour work week) or $13.33 (on a 45-hour work week). In either case, five hours working at those wages ($\$15 * 5 = \$75$ and $\$13.33 * 5 = \$66.65$) is more than the $50 per week salary increase it would take for the firm to continue to classify the worker as salaried. This requires that the 5 hours worked by the salaried worker be productive and that the firm is willing to pay for them. We assume that increasing the salary threshold is not productivity-enhancing and that a salaried employee working 45 hours per week cannot complete tasks in fewer hours than he or she would if paid hourly.

In the short run, employers have the following main options:

- For salaried workers who were already close to the new threshold, increase their earnings to the new threshold. These workers continue to be exempt from overtime payments.
- Reduce the regular wage so that the sum of the regular wage and overtime pay is close to pre-reform total pay.
- Redistribute hours away from those who become newly eligible for overtime pay to work-

[15] That is, we assume a short-run labor demand curve that is vertical.

ers who do not qualify for it (salaried workers, or hourly workers who work less than 40 hours per week).

Our aim is to quantify the short-run effects of an increase in the compensation threshold for exemption. The long-run changes allow for a vast array of possible responses by employers, many of which are beyond the scope of this paper (for example, capital substitution, or restructuring job duties to make workers exempt). We estimate the effect assuming full compliance with the law on the side of employers. Consequently, our estimates are an upper bound of the effect of the threshold increase.

The key question in modeling firm behavior is this: How will employers adjust hours and wages when converting workers from salaried to hourly? Broadly, our modeling strategy (1) estimates the shift in hours using quantile regression treatment effects, where the treatment is being converted from salary to hourly pay, and (2) adopts two scenarios for wage adjustment, yielding an upper and a lower bound.

6.1 Hours and Wage Assumptions

The key parameter of interest in our analysis is the estimate of how much employers are likely to reduce overtime work hours in light of the higher earnings thresholds and increases in the number of employees eligible for overtime pay. A higher earnings threshold means that some salaried workers will become hourly workers, and these new hourly employees will get an overtime pay premium. The firm is expected to reduce the number of employees working overtime as a result. To estimate this effect, we compare observationally equivalent hourly and salaried workers and then estimate how many fewer hours the hourly employees work. We form our comparison groups of hourly and salaried workers using quantile treatment effects (QTE) conditional on sex, race, education, age, marital status, full-time status, and occupation. The QTE provides us an estimate of the "treatment effect" of converting a salaried employee into an employee who is paid hourly.

Once we estimate the effect that moving from salaried to hourly has on hours, we adjust a

worker's weekly hours by *at most* that amount *by reducing overtime*; straight-time hours (40 or less) are not cut. If, for example, our QTE model estimates that an hourly employee at the conditional median typically works five fewer hours per week than a similar salaried employee, then we adjust (reduce) overtime hours by five when we convert an employee from salaried to hourly. We do not reduce regular full-time hours, since we assume that the firm will need to hire labor to make up for the lost overtime hours. In some cases firms will pay overtime to their converted salaried workers because the overtime adjustment will not reduce overtime hours to zero.

It is also possible that the firm will react by requiring the *relatively* higher-paid salaried workers to take on some of the hourly workers' duties (including those of the previously salaried workers). This may mean that workers on the lowest rung of the salary ladder may work more hours than prior to the increases in the earnings threshold. We do not account for this possibility in our analysis since we have no information on who would be impacted by this, or how extensive the practice would be.

Finally, to estimate the effect of the hours reduction on wages, we must make an assumption as to how the firm will calculate hourly wages for workers who are converted from salary to hourly pay as a result of the increase in the earnings threshold. If the employer takes into consideration all of the hours a salaried employee works and adjusts the hourly rate so as to keep earnings constant, then an employee will simply work the same hours and receive the same pay. This argument was presented by Trejo (1991).[16] However, Trejo (1991) finds that employers cannot fully adjust wages to compensate for the overtime premium.

Furthermore, we do not know the actual overtime premium and do not have the data to estimate it. Therefore we start out by considering two scenarios for wages: one lower-bound and one upper-bound. The true value will lie somewhere in between. The upper-bound (high-wage) assumption is that employers will use a 40-hour workweek in the wage calculation when converting workers from salaried to hourly. The lower-bound estimate assumes that employ-

[16] Recall that $\$11 * 50h = \$10 * 40h + \$15 * 10h = \$550$.

ers calculate wages based on usual hours. Both assumptions are problematic. In practice an employer is unlikely to choose a 40-hour workweek, since that raises labor costs and may result in wages considerably above market wages; conversely, employers may simply be unaware of how many hours a salaried employee works in a given week. However, the simulation results for these upper and lower bounds turn out to be not all that different.

6.2 Estimation

Identification of the QTE model relies on the fact that different employers may classify observationally similar workers as either hourly *or* salaried as was demonstrated in the first part of the paper. The obvious examples are those workers who are misclassified. That is, there is a large group of workers who should be classified as hourly - since they do not have any of the job duties that would allow them to be classified as exempt – but are nevertheless paid a salary, i.e., their paycheck is for the same amount each week, independent of hours worked. Similarly there is a group of workers who are paid hourly, but for only 40 hours per week, regardless of how many hours they work. This is nearly the same as being salaried. Additionally, because there are differences in classification across industries and occupations, there are workers who are classified as salaried "exempt" in one firm/ industry but are classified as hourly/non-exempt in another.

We exploit this variation in classification to estimate a quantile treatment effects model where the treatment effect, a dichotomous one, is classification as hourly or salaried, and the outcome variable is hours worked per week. We use the heteroskedasticity-robust model proposed by Frölich and Melly (2010). Since we are interested in hours reductions associated with the change from salaried to hourly for full-time workers, we estimate quantile treatment effect models at each percentile from the 51^{st} upward to the 99^{th} percentile of the hours distribution. We estimate this model using data from the 2013 Current Population Survey (CPS). We use the CPS because of its large sample size and its detailed information on work hours, combined with information about whether a worker is paid on an hourly or salaried basis. Our

base model is

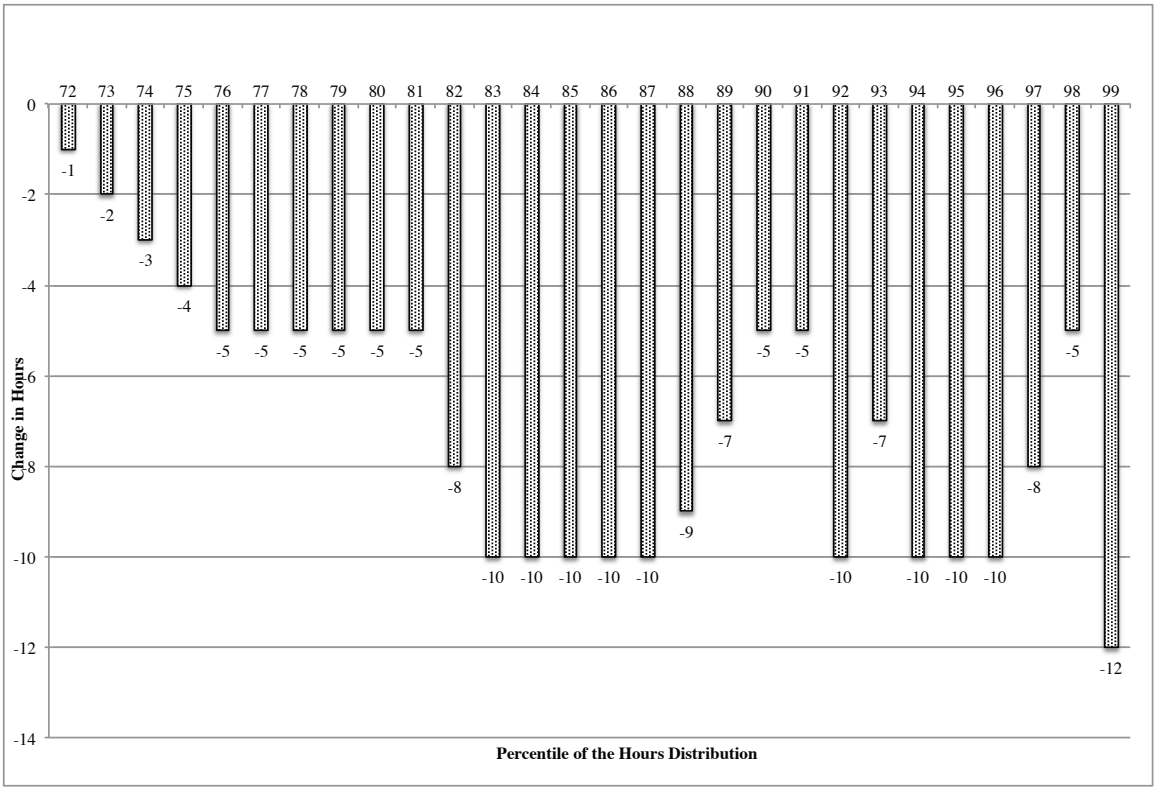
$$H_i^d = X_i\beta^\tau + D_i\delta^\tau + \epsilon_i \quad and \quad Q_{\epsilon_i}^\tau = 0 \tag{1}$$

for $i = 1, ..., n$ and $d \in (0, 1)$. $Q_{\epsilon_i}^\tau$ refers to the τ^{th} quantile of the unobserved random variable ϵ_i. β^τ and δ^τ are the unknown parameters of the model. Here δ^τ represents the conditional quantile treatment effects at quantile τ which in our case is the treatment effect of being classified as salaried (D=0) or hourly (D=1). Given that ϵ is orthogonal to X and D (exogenous), then the β^τ and δ^τ can be estimated by the quantile regression estimator proposed by Koenker and Bassett (1978); here we use the heteroskedasticity-robust estimator discussed by Frölich and Melly (2010). We estimate this model for prime-age workers (25-54) and include in X sex, race, ethnicity, occupation, education, age and marital status.

6.3 Results

The results of the QTE regression are shown in Figure 3, which orders the frequency distribution of hours worked by percentile and for each of those percentiles estimates the reduction in hours worked, conditional on covariates, when the salary basis is raised to $900 per week. The effect size from the 51^{st} to the 71^{st} percentile is zero and are not shown in the figure. At the 75^{th} percentile we estimate a four-hour reduction in work for hourly workers compared to salaried, at the 80^{th} percentile we find a five-hour reduction, the 90^{th} percentile yields a five-hour reduction, and at the 95^{th} percentile of hours we find a 10-hour reduction in work hours for those who are paid hourly compared to those who are salaried. All of the non-zero estimates (those above the 72^{nd} percentile) are statistically significant at the $\alpha = .05$ level or smaller. That is, for workers who would be converted from salaried to hourly as a result of the FLSA earnings threshold increase, we find a statistically significant reduction in hours. The effect size ranges from a one-hour reduction to a 12-hour reduction.

Figure 3: Quantile Treatment Effect Estimates: Hours Reductions Resulting from Increasing the Earnings Threshold to $900/week



Note: Authors' analysis of the Current Populations Survey 2013. Hours reductions due to salaried workers being reclassified as hourly by raising the FLSA earnings threshold to $900/week.

We use the estimates of the quantile treatment regression to adjust worker hours based on their location in the conditional hours distribution. We assign a treatment effect for each worker in the sample based on his or her position in the hours distribution and then assume that he or she will be paid overtime for the remaining hours in excess of 40 per week. We then average the adjusted hours and calculated earnings for the affected group. We conduct the analysis for three different earnings thresholds: $600, $750, and $900 per week. Overall, we find that there are *no* significant reductions in earnings or hours, *on average*; however, the distributional consequences of the change in policy lead to reductions in overtime hours (but not earnings) for those who work significant amounts of overtime.

Table 7 displays the results of our simulations. Overall there are six simulated results, two for each hypothetical increase in the FLSA salary threshold. For each salary threshold we allow hourly wages to be calculated in two ways: high wage, using current earnings per week divided

Table 7: Effect of Raising FLSA Salary Threshold on Non-exempt Status, Earnings, and Hours: Alternate Wage Scenarios

	Threshold Level					
	$600		$750		$900	
Coverage Increase						
Low-wage	1.85%	[1.80 - 1.91]	3.87%	[3.79 - 3.95]	6.25%	[6.15 - 6.34]
High-wage	1.85%	[1.80 - 1.91]	3.87%	[3.79 - 3.95]	6.25%	[6.15 - 6.34]
Earnings Effect						
Baseline	$527	[526 - 528]	$600	[599 - 602]	$680	[678 - 682]
Low-wage	$529	[528 - 531]	$602	[601 - 605]	$682	[681 - 685]
High-wage	$542	[540 - 544]	$624	[622 - 626]	$712	[710 - 715]
Hours Effect						
Baseline	39.7	[39.4 - 39.9]	40.4	[40.3 - 40.6]	41.0	[40.8 - 41.1]
Low-wage	39.4	[39.1 - 39.6]	40.0	[39.8 - 40.1]	40.4	[40.3 - 40.5]
High-wage	39.4	[39.1 - 39.6]	40.0	[39.8 - 40.1]	40.4	[40.3 - 40.5]
N	5,571		11,867		19,226	

[95% confidence intervals]

Low-wage estimates assume that hourly wages are determined by the usual hours worked in the work week. **High-wage** estimates assume that hourly wages are based on a 40 hour work week, regardless of number of hours worked. *Percentages are the share of the US workforce.* Authors' analysis of Current Population Survey, Outgoing Rotation Groups 2013.

by 40 hours, and low-wage, using current earnings per week divided by usual hours per week. Both of these hourly wages are higher than the "zero effect" wage, which fully accounts for the overtime premium, but these wage estimates are in keeping with the literature on overtime that shows that firms do not fully adjust wages to account for the overtime premium (Trejo, 1991).

As expected, each increase in the earnings threshold results in more workers having their coverage status changed from salaried to hourly. These estimates reflect the firm's decision to give a raise (and potentially increase hours) for those workers who are near the threshold. For example, for the $900 threshold, more than 16 percent of workers are given a raise and kept as exempt (not shown in table). The estimates in Table 7 reflect this salary increase, and exclude them from any further effects of the policy change (raising the threshold). For an increase in the salary basis from $455 per week to $600, we find that 1.85 percent of *workers* will be moved from salaried to hourly pay. The 95% confidence interval suggests that somewhere between 1.8 and 1.9 percent of the workforce will experience this change. Higher thresholds affect more workers, with the $900 threshold affecting approximately 6 percent of the workforce.

The earnings and hours effects in all the scenarios are modest. In no case do we anticipate a sizable increase (or decline) in wages. For an increase in the earnings threshold to $600 we estimate a $2 - $18 increase in weekly wages and a 30-minute (.5 hour) reduction in the work week, but we cannot reject the null hypothesis of no effect.[17] The increase in mean salary is indistinguishable from zero. Importantly, these estimates result from relatively generous assumptions about wages and the firm's ability to adjust the overtime hours. Other threshold increases, $750 and $900, yield similar results of small and statistically insignificant increases in earning and reductions in hours. Further analyzing the distributional effects of the policy change, we find that workers farthest from the earnings threshold experience wage declines. For example, using a $900-per-week threshold, workers at the 10^{th} percentile of the earnings

[17] Earnings and hours effects include all workers at or below the threshold since some workers will receive an increase in wages and (by assumption) no change in hours. This is unlike the coverage estimates that include only those who are converted from salary to hourly.

distribution experience a decline in weekly wages from $508 to $500; those at the 25^{th} percentile have no change in wages; and those above the 50^{th} percentile see an increase. Again none of these effects is statistically different from zero.

Table 8: Distributional Analysis: Effect of Raising FLSA Salary Threshold on Earnings, and Hours

		Avg. Weekly Earnings		
Hours Reduction	Adj. Hours	Baseline	Policy	Avg. Hourly Wage
0	39.2	$683	$686	$17.31
-1	44.0	$670	$685	$15.38
-5	46.0	$663	$636	$13.38
-7	53.0	$656	$651	$11.22
-10 or more	63.2	$652	$643	$9.06

All estimates use the **low-wage** assumption: hourly wages are determined by the usual hours worked in the work week. Authors' analysis of Current Population Survey, Outgoing Rotation Groups 2013.

In Table 8 we present the results of a distributional analysis of the earnings effects stratified by the estimated reduction in hours. To calculate these effects, we estimate a quantile treatment effect for each percentile above the median. The treatment estimates from Figure 3 show the effect of moving a worker from exempt status (salaried) to non-exempt (hourly). Overall we find no significant reduction in earnings for those at the upper end of the conditional hours distribution. Two other interesting results stand out. First, converting workers from salaried to hourly results in reductions of hours from 1 to 12 per week with the upper bound affecting salaried employees who work the most hours (see Figure 3.) We find no consistent reduction in earnings. Even in cases where work hours are reduced by 10 hours per week, average weekly earnings for this group stayed roughly the same (declined by $9 per week). This occurred because in the short run, these workers continued to work more than 10 hours of overtime, *even after being converted from salary to hourly*. The consequence of this is to offset the reduction in hours with an increase in overtime earnings.

Second, hourly wages decline monotonically with rising hours. On a per-hour basis, those affected by the policy (earning between the current earnings threshold of $455 and the simu-

lated threshold of $900) are paid the lowest hourly wage. This is somewhat surprising if seen against an expectation that salaried workers with large numbers of hours were likely to be more highly compensated.[18]

Table 9: Percentage of Salaried Workers Affected by Raising FLSA Salary Threshold

		Threshold Level		
		$600	$750	$900
All		6.3%	15.0%	26.5%
Sex				
	Female	9.5	18.5	33.4
	Male	3.6	12.1	20.6
Race/Ethnicity				
	White	6.6	16.3	26.0
	Black	7.3	9.1	14.0
	Latino	6.3	16.5	38.1
	Other	4.0	9.6	28.7
Education				
	HS or less	20.0	33.4	38.3
	Some College	4.7	15.5	29.7
	College +	4.5	11.6	23.4
Age				
	20-34	8.3	21.7	37.8
	35-54	6.2	11.0	22.0
	55+	3.4	14.6	19.6

Note: Estimates assume that hourly wages are determined by a usual hours work week. *Estimates are the percentage of salaried workers affected, by characteristic.* Authors' analysis of RAND American Life Panel April 2014. Results weighted using raked sample weights.

In Table 9 we present the results of our examination of which salaried workers are likely to be affected by the policy change. In these results, we use the low-wage assumption that wages are determined by dividing weekly earnings by usual hours. These estimates now reflect the percentage of *salaried workers* who will be affected by the policy, in contrast to the results in Table 7, which are given as the percentage of the full workforce. The results show that women,

[18] This is at least in part due to the structure of the FLSA. By truncating the earnings at $900 per week (or else the worker would remain salaried) we ensure that earnings cannot rise commensurate with hours; however, it is still surprising that the *mean* earnings for those with the most hours are so low.

across all of the threshold levels, are more likely than men to be switched from salaried to hourly employees. One in three women who currently work as salaried would become hourly employees if the FLSA salary threshold was increased to $900 per week. Similarly, almost four in ten salary-earning Latinos, and the same fraction of salaried workers with a high school education or less, would become hourly workers at that threshold. More than one in three younger workers between 20 and 34 years old would be converted to hourly employees.

7 Discussion

The results of our policy simulations suggest that on average and in the short run, employees will not experience significant reductions in hours or earnings as a result of increasing the FLSA salary threshold to $900 per week. However, our distributional analysis shows that salaried workers at the upper tail of the hours distribution are likely to experience significant short-run reductions in hours - offset by the increase in overtime pay. These short-run results are unlikely to hold in the long run, when we expect that firms will continue to reduce hours for these workers with commensurate reductions in earnings. While it might be compelling to argue that this is welfare-reducing for workers (they could no longer work as many hours and earn as much), Kawaguchi, Lee and Hamermesh (2013) do not find evidence of welfare reductions from "gifts" of leisure in Japan and Korea - although they caution researchers from extrapolating their findings to other countries.

We also note that incomplete compliance is likely to mitigate the size of the hours effects associated with increases in the salary threshold estimated above. Based on data collected through the RAND American Life Panel data, we expect that nearly 20 percent of those working overtime will not be paid properly for the overtime hours. Raising the threshold may reduce non-compliance, but even if non-compliance falls to 10 percent, the effect sizes will be smaller than those estimated here - which were essentially zero in terms of hours and earnings at the mean, but larger for those who are at the tails of the hours distribution. Thus, while compliance is an important issue overall, it does not appear to influence our short-run results.

In the long run, however, non-compliance will mitigate the effects of the policy - reducing the downward effects on hours and any potential employment effects.

8 Conclusions

This research presents the first nationally representative estimates of the extent of overtime violations in the United States since the 1970s Ehrenberg and Schumann (1982). Using data from the RAND American Life Panel, we find that approximately 12 percent of hourly workers are not paid, or are paid the wrong amount, for hours worked in excess of 40 per week. *Conditional on working overtime*, this number rises to 19 percent - nearly 1 in 5 workers - not paid for overtime hours worked. We also find similar rates of misclassification for salaried workers: 11.5 percent of such workers do *none* of the duties required for exemption from overtime rules or are categorized as salaried employees despite earning less than the $455 weekly minimum for exemption.

If employers were to become fully compliant with current FLSA rules, their employees would earn an additional $30.7 billion per year. This assumes that the total hours of overtime remain unchanged, and that the average hourly wage remains at $18.34/hour for those who had been unpaid. It is unlikely that all paid overtime hours would persist even if paid at the time-and-a-half overtime premium, however. Adding up all overtime hours, and assuming that all forgone hours of work would be replaced by newly hired workers, we estimate a one-time employment increase of 530,000 full-time workers. Monthly job creation in 2014 was approximately 260,000 per month. Both the estimate of $30 billion in forgone wages and the 530,000 full-time workers hired when moving to full compliance are upper bounds, because typically employers would not replace all hours.

Fine and Gordon (2010) and Weil and Pyles (2005) have discussed the difficulty of FLSA enforcement under the current system. Raising the earnings threshold might simplify the implementation of the law and its enforcement, because for workers who are paid less than the threshold, the duties test does not apply. If policymakers raise the earnings threshold,

assuming full compliance, there would be no earnings effects on average (only slight increases that are indistinguishable from zero) and only modest hours reductions at the means of the hours distribution (also indistinguishable from zero).

We also conduct a distributional analysis and estimate that workers above the 75^{th} percentile of the conditional hours distribution (more than 40 hours per week) who move from a salaried job to an hourly job would reduce their work hours between 1 and 12 hours per week (depending on their location in the hours distribution), but because of the overtime premium and because workers would still put in many hours of overtime, earnings would not decline. We test the robustness of these estimates using upper and lower bounds of wage estimates, and find that the results are not very sensitive to our assumptions for determining hourly wages.

In reality, compliance will be less than complete. Consequently our estimates can be seen as an upper bound of the effect sizes *in the short term*. However, we urge caution about making policy based on our estimated short-run effects where firms are assumed not to adjust capital or their production process. Assuming that all the hours worked by salaried employees are equally productive, employers will still have to redistribute the work that used to be performed by those now working fewer overtime hours. This may happen through hiring new workers, or increasing hours for the part-time labor force, but employers could also reassign tasks within the firm or substitute capital for labor.

While average short-run effects appear small, there is a group of workers whose overtime hours would be reduced substantially. We estimate that their work hours would decrease up to 12 hours per week, with only modest earnings effects in the short run. This would most likely be utility-increasing, even if we cannot easily quantify this positive effect in monetary terms. However, if long-run earnings fall for this population, then utility increases may be non-existent, even if they spend fewer hours on the job.

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A1. Appendix 1

Table 10: Counts and Percentages of Occupational Group Affected by Raising FLSA Salary Threshold (in thousands)

Occupation	Population (000)	No. Affected (000)	% Affected
Office and administrative support	17,833	2,538	14.2%
Education, training, and library†	8,675	1,872	21.6
Sales and related†	15,443	1,723	11.2
Management	16,027	1,692	10.6
Business and financial operations	6,832	946	13.8
Transportation and material moving	8,716	779	8.9
Healthcare practitioner and technical†	8,124	622	7.7
Community and social service	2,335	560	24.0
Construction and extraction	7,175	519	7.2
Personal care and service	5,440	478	8.8
Installation, maintenance, and repair	4,924	471	9.6
Production	8,278	443	5.4
Computer and mathematical science	3,963	418	10.5
Protective service	3,144	413	13.1
Food preparation and serving related	8,184	334	4.1
Building and grounds cleaning and maintenance	5,593	320	5.7
Arts, design, entertainment, sports	2,883	318	11.0
Healthcare support	3,516	225	6.4
Architecture and engineering	2,806	206	7.3
Legal†	1,799	186	10.3
Life, physical, and social science	1,294	170	13.2
Farming, fishing, and forestry	944	81	8.6
Total	143,929	15,313	10.6

†Under current regulations the salary requirement of $455 is not applicable for outside sales employees, teachers, and employees practicing law or medicine; however, that does not mean that all employees in these occupational groups are exempt from coverage. It is likely that this will remain the case if the salary basis is increased.

Note: Estimates are the percentage of salaried workers effected, by occupation and *sorted in descending order by number of workers effected by policy change.* Authors' analysis of Current Population Survey - Outgoing Rotation Groups 2013. Estimates based on raising the the threshold for exempt status to $900 per week. Results weighted using Outgoing Rotation Group sample weights for the entire 2013 year; consequently, the sample weights have been divided by 12.

Table 11: Top 10 Industries (by count) Affected by Raising FLSA Salary Threshold

Industry	Population (000)	No. Affected (000)	% Affected
Educational services†	13,012	2,618	20.1%
Retail trade	16,103	1,367	8.5
Public administration	6,695	1,069	16.0
Professional and technical services	10,037	1,021	10.2
Health care services, except hospitals†	10,197	924	9.1
Transportation and warehousing	6,251	732	11.7
Construction	9,257	728	7.9
Finance	4,372	610	14.0
Hospitals†	6,180	514	8.3
Food services and drinking places	8,918	492	5.5

†Under current regulations the salary requirement of $455 is not applicable for outside sales employees, teachers, and employees practicing law or medicine; however, that does not mean that all employees in these occupational groups are exempt from coverage. It is likely that this will remain the case if the salary basis is increased.

Note: Estimates are the percentage of salaried workers effected, by industry and *sorted in descending order by number of workers effected by policy change.* Authors' analysis of Current Population Survey - Outgoing Rotation Groups 2013. Estimates based on raising the the threshold for exempt status to $900 per week. Results weighted using Outgoing Rotation Group sample weights for the entire 2013 year; consequently, the sample weights have been divided by 12.

A2. Appendix 2

```
If LF001s1 = 1 (i.e. R indicated working for pay lf001s1==1)

LF040_Intro:

Now we have a few questions about your job.

If you have more than one job, please refer to your main job when answering these

questions.


LF041. Self-emp or employed

Would you consider yourself self-employed or are you working for someone else?

1. Self-employed

2. Working for someone else

[Note: if self-employed or no answer skip questions LF042 to LF051]
```

If LF041 = 2. Working for someone else, then ask

LF042. Are you employed by government, by a private company, or a nonprofit organization?

1. Federal government
2. State government
3. Local government
4. Private-for-profit company
5. Non-profit organization including tax exempt and charitable organizations

LF043. On this job, are you a member of a labor union, an employee association similar to a union, or covered by a collective bargaining agreement?

1. Yes
2. No

LF044.usual work hours per week

In your main job, how many hours do you usually work in a single workweek?

_____hours per week

IF no answer in LF044 (usual earnings) THEN

LF044_NR_BR

Your answers are important to us. Please go back and give us your best guess.

Or if it is easier for you to give an approximate answer choose one of the options below:

My usual hours in a single workweek are:

1. less than 35 hours
2. 35 hours or more

LF045. Usual earnings

In your main job, [including overtime pay, tips, bonuses, or commissions] how much do you typically earn?

$_____ per

[drop down week, every two weeks, twice a month, month, year]

IF no answer in LF045 (usual earnings) THEN

Your answers are important to us. Please go back and give us your best guess.

Or if it is easier for you to give an approximate answer choose one of the options below:

My earnings per week (including overtime pay, tips, bonuses, or commissions) are:

1. less than $200
2. $201 - $450
3. $451 - $950
4. $951 - $1,200
5. $1,201 or more

LF046. Hourly or salaried worker

Some people are paid for each hour that they work, and others are paid a fixed amount (salary) regardless of the number of hours they work. Which of these best describes how your employer pays you?

1. hourly
2. salary

LF047. Job responsibilities FLSA

Does your job involve any of the following:

(check all that apply)

1. Supervising at least 2 other employees

2. Hiring/firing employees or assessing job performance

3. Managerial, financial, or legally binding business decisions

without input from your boss

4. intellectual tasks requiring at least a college degree

5. Developing new products, patents, or authoring creative works

6. Selling products to customers at locations outside of your workplace

7. Computer programming

10. None of the above

LF048. Any overtime pay

If you work more than 40 hours in a single workweek (Monday through Sunday) for the same employer, do you receive additional pay or any other form of compensation?

1. Yes, I receive additional pay in my next paycheck.

2. Yes, I receive comp time (flextime, additional vacation time, or other time).

3. No, I receive no additional compensation in my next paycheck when working more than 40 hours in the workweek.

4. I never work more than 40 hours in one week.

If LF048 = 1. Yes, receive additional pay, then ask:

LF049. Overtime pay - rate

When you work overtime (more than 40 hours in a single workweek for the same employer), how much are you paid for your overtime hours?

For overtime hours I am paid ...

1. normal rate (same as for any other hours I work)

2. time-and-a-half (1.5 times my normal hourly rate)

3. double time (2 times my normal hourly rate)

4. other - please specify_____

LF050. I feel pressure from my employer to avoid working overtime.

[7 point Likert scale]

1) always

2) almost always

3) often

4) sometimes

5) rarely

6) almost never

7) never

LF051. My employer requires me to work overtime - even when I prefer not to.

[7 point Likert scale]

1) always

2) almost always

3) often

4) sometimes

5) rarely

6) almost never

7) never