The Dark Side of Samsung's Corporate Social Responsibility

Comparative Studies Cast Doubt on the Reliability of Samsung's Sustainability Report

May 17th, 2016

Executive Summary

Since 2012, China Labor Watch has on numerous occasions launched investigations into the working conditions of Samsung's facilities as well as those of their suppliers in China. In 2015, CLW, with the cooperation of workers, collected 217 pay stubs from various departments at Samsung's Tianjin Factory and one of their suppliers, Tianjin Zhonghuan. Through careful study of these pay stubs, CLW found that Tianjin Zhonghuan had most likely passed Samsung's third party audit by producing fake records, concealing their workers real overtime hours. Samsung, although aware of this issue, did not take strict measures to enforce its audit. This calls into question the effectiveness of Samsung's auditing system. Furthermore, we discovered that Zhonghuan did not provide sufficient social insurance payments. Also, there is a substantial discrepancy between the pay received by workers in the Samsung and Zhonghuan factories for the same amount of hours worked.

We believe Samsung has made limited improvements to their working conditions. Relaxed monitoring mechanisms, in conjunction with their suppliers' quest for greater profits, has led to Samsung's tacit acceptance of the labor rights violations committed by its suppliers. The actions of Samsung may be legal, but are morally wrong.

Through our investigation, we discovered the following key issues:

1. We highly suspect Tianjin Zhonghuan produces fake records to conceal the real overtime hours of workers.
2. Tianjin Samsung and Tianjin Zhonghuan ignore Chinese labor law, and workers' overtime hours are significantly higher than the law stipulates.
3. According to the Chinese labor law, the amount of social insurance Tianjin Zhonghuan pays is insufficient; Zhonghuan may have not purchased medical insurance and unemployment insurance for workers.
4. The wages of Samsung's own workers are much higher than that of workers in supplier factories. The supply chain has an "unequal pay for equal work" phenomenon.
5. The base wage is very low, workers are pressed into working overtime to ensure a steady flow of income.

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Background and Objectives

Since its establishment, China Labor Watch has undergone a string of in-depth investigations on the Chinese factories of some of the largest companies in the world. These industries include toys, bikes, shoes, homewares, clothing, and electronics. Reporting on issues in these factories serves as a means to increase the awareness of the international community on the labor issues present in supply chain production, simultaneously putting pressure on companies to improve working conditions.

In 2012, 2014 and 2015, CLW undertook four investigations on Samsung and their suppliers in China, revealing that Samsung had violated labor rights by using child labor, student labor, and excessive overtime. This investigation is a continuation of this series, with the aim of ensuring that Samsung had acted on their promise to improve labor conditions. We also sought to examine the validity of their corporate social responsibility report. Through investigation we seek to compel Samsung and other transnational corporations to continue protecting labor rights in China.

Methodology

In July and August 2015, CLW investigators collected 217 paystubs from two factories in Tianjin. 109 paystubs were collected from Tianjin Samsung Telecom Technology Co., Ltd., and 108 were collected from Tianjin Zhonghuan Telecom. Technology Co., Ltd. (Hereafter referred to as Zhonghuan). Zhonghuan is one of Samsung's 227 suppliers in China, producing Samsung's semi-finished and finished mobile phones, currently employing 900 workers. Tianjin Samsung Telecom Technology Co., Ltd. (hereafter referred to as Samsung or Tianjin Samsung) was established in China by Samsung Electronics, to manufacture phones, employing 8000 employees. Both of these factories are located in Tianjin, and both produce mobile phones for Samsung Electronics, making it an ideal setting for comparative study.

Most of our paystubs belong to workers on the production line, as they are the main focus in our investigation. As such, in order to reflect the working conditions and the treatment of these workers, unless otherwise noted, all the calculations below are based on the pay stubs of 185 production line workers. Zhonghuan's pay stubs indicate workers' ranks, P1, P2, and P3 from the lowest to the highest. Among the 108 Zhonghuan pay stubs, 99 of them were P1 workers, and we take these 99 pay stubs as Zhonghuan's sample. In Samsung's pay stubs, most workers' base wages are 2450, 2600, or 2750. A small proportion of them (16 cases) earned a base wage below 1850 (the local minimum wage, as they were newly recruited, and had worked less than a month). 7 pay stubs show base wages above 2750, which we believe belong to senior employees or managers. Based on this information, we took the 86 pay stubs whose base wages are between 1850 and 2750 as Samsung's sample. Combined together, we have a total 185 pay stubs of base workers. In both factories, all production departments work in conjunction with each other to produce mobile phones for Samsung. Therefore, workers' treatment and overtime hours among the various departments only differ slightly. We believe our sample is strong enough to represent the Samsung Tianjian and Zhonghuan's labor conditions.

The paystubs information included the kind of work performed, monthly base wages, overtime wages, other rewards and compensation, leave of absence/absence without leave, social insurance (individual payment), amount of tax received, the amount of taxable income, and the amount of real income etc. According to these amounts, we also calculated other figures such as the average weekly work hours and labor costs. The method of calculation is presented in the Appendix, and information from the paystubs is presented in Table 1. Through these paystubs, we underwent a descriptive analysis of the work hours and pay of workers in both factories, comparing the differences between the two. Furthermore, we also used the t test to compare the average values of each category of both factories, using linear regression and logistic regression to analyze the relationships between variables. The results of our detailed analysis is presented in the next section.

Table 1: Samsung, Zhonghuan Overtime Hours, Pay, and Other Information

（numbers outside of parentheses are means, and the ones in parentheses are standard deviations）

	Total	Zhonghuan	Samsung
Number of paystubs	185	99	86
Gross income	4175.2(784.7)	3896.9 (493.8)	4495.6(926.2)
Base wage	2224.7(424.4)	1844.9(31.5)	2662.0(165.1)
Overtime pay	992.7(484.1)	1010.7(207.8)	972.0(675.8)
Compensation	353.4(93.5)	385.1(93.9)	316.9(78.8)
Rewards	474.3(241.4)	382.8(181.0)	579.7(259.7)
Insurance (individual payment)	464.1(313.3)	190.1(97.8)	779.4(116.0)
Number who received "Other pay"	--	65	--
Other pays	--	326.6(300.9)	--
Weekly work hours	51.8(6.61)	56.3(4.6)	46.7(4.5)
Monthly overtime hours	51.9(29.3)	71.7(20.8)	29.0(19.5)
Labor cost (RMB/hour)	18.6(3.8)	15.7(1.0)	22.0(3.1)
Job rank	--	1.4(0.5)	--
Number of paystubs in the peak season	97	62	35

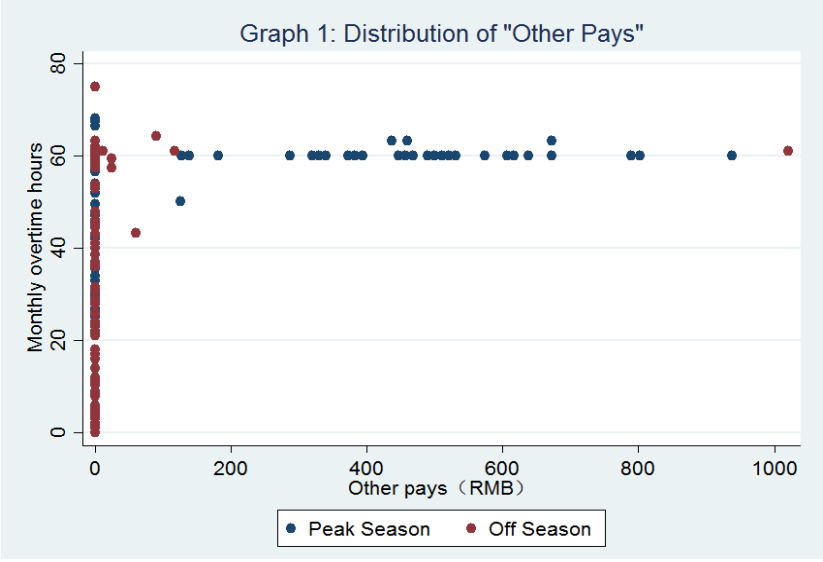
Main Findings

1. We Suspect Tianjin Zhonghuan Produces Fake Records To Conceal The Real Overtime Hours Of Workers.

In analyzing the relationship between overtime hours and total income of Samsung and Zhonghuan workers, we discovered that among the paystubs collected from Zhonghuan, the category "Other pays" was abnormal. Further analysis reveals:

1) 80% of "Other pays" was calculated as a multiple or 1/2 or 1/3 of a multiple of 10.63 (Hourly wage of Zhonghuan). Furthermore, we found about 80% of overtime pays were also calculated as a multiple or 1/2 or 1/3 of a multiple of 10.63.
2) Those who had the same base wage and overtime hours had received a substantial difference in the amount under "Other pays". As such, this category is not paid according to the actual number of work hours worked.
3) The majority of "Other pays" (58 of the 65 samples) were paid to workers who worked close to 60 overtime hours; the majority (56 of 65) was paid to workers during the peak season[1]. There were 56 samples that satisfied both these categories. (See Graph 1)

From point 1, we infer that "Other pays" has a close association with work hours. It is either a subsidy paid by work hours or overtime hours, or is itself a worker's wage, rather than compensation for transportation, meals, etc. From point 2, we can discover that "Other pays" is not a subsidy paid according to the actual number of hours worked. Thus, we suspect that "Other pays" is some sort of wage. In point 3, we reveal that "Other pays" is linked to whether overtime hours were close to 60 hours, and is also linked to whether the work happened during the peak production season. Based on the analysis above, we suspect that "Other pays" is in fact a part of overtime pay, which is transferred to a different category to conceal workers' real overtime hours.



[1] Generally, the month before new products are released is a rather busy production period for the factory. In 2015, Samsung released new phones in April and August. As such, in STATA, March and July have been recorded as peak production periods, coded as 1, whilst the other off seasons are coded as 0.

To test our hypothesis, we underwent a logistic regression analysis on the following three variables, as mentioned above in point 3: "Whether or not there was other pay", "Whether or not overtime hours were close to 60", and "Whether they worked during the peak season". We first added the dependent variable "Whether or not there was other pay". If there was, we coded it as a 1, and if not, a 0. We then added two independent variables "Whether or not overtime hours were close to 60", and "Whether they worked during the peak season", and also coded them. Of the variables, we believe that a worker's base wage, job position and subsidy amount are not related to "the presence of other pay". As such, our analysis does not include other variables. The final formula to calculate the possibility of other pays:

$$\text{Logit}(\text{others}=1|X_1\ X_2)=F(\beta_0+\beta_1X_1\ +\beta_2X_2\ )$$

β_0 is the intercept of our model with Y axis.

X_1 represent "whether they worked during peak season", if they did we coded it a 1, if not, a 0. β_1 is X_1's coefficient.

X_2 is "whether or not overtime hours was close to 60", if the overtime hours was between 59 and 60, then we coded it a 1, otherwise, a 0. β_2 is X_2's coefficient.

The result of the multivariate Logistic regression by using STATA14 is shown below:

Table 2: Logistic Regression of the Presence of "Other pays"

	Model 1		**Model 2**	**Model 3**
	n=99		n=99	n=99
	Whether it was the peak season	Whether overtime hours were close to 60	Whether it was the peak season	Whether overtime hours were close to 60
Odds Ratio	**20.54*** (5.59, 75.48)**	1.95 (0.49, 7.68)	**29.04*** (9.40, 89.73)**	**10.50*** (3.72, 29.57)**
Constant		**0.24** (0.09, 0.65)**	**-0.78** (0.15, 0.68)**	**0.37* (0.15, 0.88)**
Pseudo R^2		0.38	0.37	0.18

(Bold* indicates statistical significance, *p < .05, **p < .01, ***p< .001)

In Model 1 the independent variables are "whether they worked during peak season", and "whether or not the overtime hours were close to 60". In Model 2 and Model 3, we took "whether they worked during peak season", and "whether or not the overtime hours were close to 60" as independent variables. When tested independently, "whether or not the overtime hours is close to 60" is statistically significant, but when adjusted for "whether or not they worked during peak season", the former becomes insignificant. We believe that the variable "whether or not the overtime hours were close to 60" might be a mediator variable. In addition, to test if "whether they worked during peak season" has an impact on "whether the overtime hours is close to 60", we ran another Logistic regression.

The formula is shown as below:

$$\log(\text{overtime}=1|X_1)=F(\beta_0 + \beta_1 X_1)$$

β_0 is the model's intercept with Y.
X_1 is "whether they worked during peak season", β_1 is X_1's coefficient.

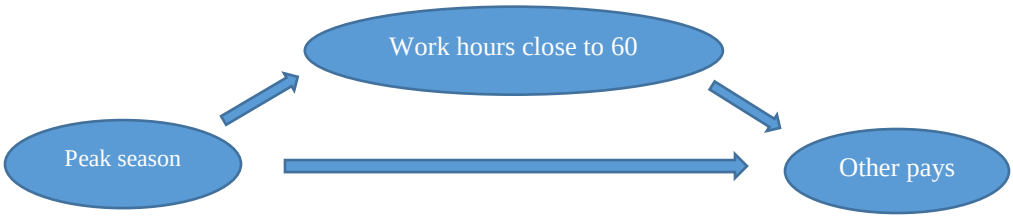
The results of the Logistic regression by using STATA14 are shown as follows:

Table 3: Logistic Regression of "whether overtime hours were close to 60"

	Model 1
	n=99
	Whether they worked during the peak season
Odds Ration	**32.31***(8.49, 123.00)**
Constant	0.24 (0.09, 0.65)
Pseudo R^2	0.36

(Bold* indicates statistical significance, *p < .05, **p < .01, ***p< .001)

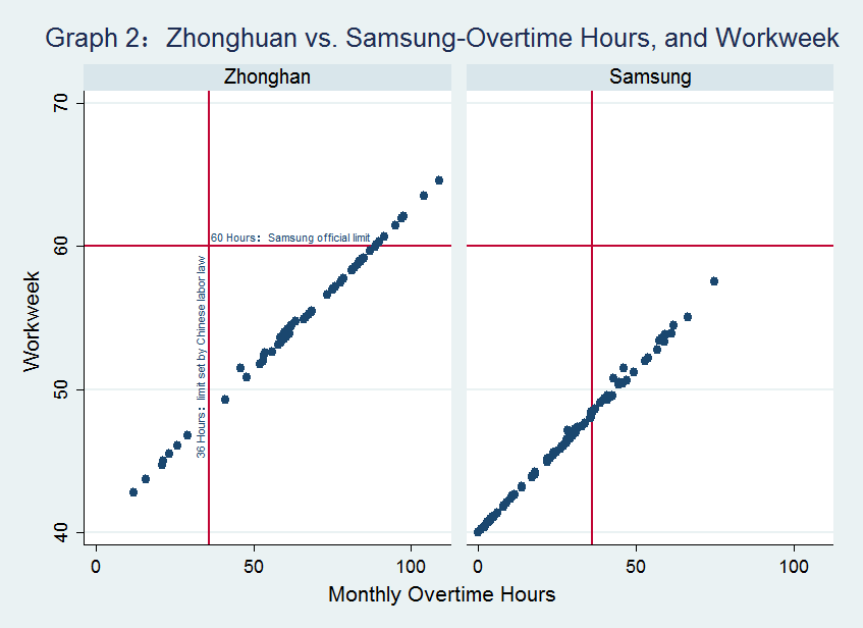
As per our last regression, we see that the variable "whether they worked during the peak season" has a significant impact on the variable "whether the overtime hours were close to 60". Based on the results of the two regressions, we conclude the relationship between the three variables as follows:



According to the coefficients in the second regression and in Model 2 of the first regression**, there is a 97.00% probability that in peak season, workers' overtime hours as shown in paystubs will be between 59 and 60 hours. The probability that workers receive "Other pays" in peak season is also as high as 96.67%.** The results of statistical analysis confirm are fully consistent with our hypothesis. Thus, we believe that "other pays" is paid during peak season, when the workload is heavy, and Zhonghuan workers have to work excessive overtime hours. **To conceal the real overtime hours, overtime pay for time worked above 60 hours was paid under a different category, "Other pays"**. In short, Zhonghuan has most likely concealed workers' overtime hours by producing fake records.

2. Low Wage And Overtime-Related Compensation Contribute To Excessive Overtime Hours.

1) If one includes hidden overtime—accounted for under the guise of "Other pays"—it is not difficult to discover that Zhonghuan's overtime hours greatly exceed those of Samsung. Using a T-Test to compare differences in hours worked, it is clear that there is a difference between hours worked at the two factories. Workers in Zhonghuan averaged 56 hours a week, 9.61 hours higher than the average for workers at the Samsung plant.[2] When calculated on a monthly basis, Zhonghuan workers are putting in on average, 42 hours more than those employed at Samsung.[3]
2) According to a conservative calculation[4], approximately 30% of Zhonghuan's workers weekly hours exceed Samsung's official limits, with as many as 90% of these workers exceeding the limits on overtime as prescribed by Chinese labor laws. In comparison, although 30% of workers at Samsung's Tianjin factory put in overtime hours exceeding standards set by Chinese labor laws; among our sample of 86 workers there was not one employee who worked over 60 overtime hours. (See Graph 2)



In Samsung's 2015 sustainable development report, Samsung claimed that 99% of its factories guaranteed that their workers had the right to voluntary labor.[5] Presuming that this statement is true, then nearly all workers have chosen to work overtime voluntarily. Under this

[2] P value=0, 95% confidence interval 8.28-10.94.
[3] P value=0, 95% confidence interval 36.78-48.52.
[4] When calculating Zhonghuan workers weekend hours, we used conservative calculation. According to this, out of the 108 samples, 32 people had worked more than 60 overtime hours. If we use a liberal estimate, even if all the overtime hours was ordinary overtime hours, there were 49 people who had worked over 60 overtime hours on weekends, as such we believe that that the credible number would be between 32 and 49.
[5] Samsung Electronics,. 2016. Global Harmony with People, Society & Environment. http://www.samsung.com/us/aboutsamsung/sustainability/sustainabilityreports/.

premise, we decided to look into how the pay provided by the factory, such as base wages, compensation, rewards, and insurance might have an influence on the overtime worked, and the possibility that a factory might be using manipulative means to compel workers to work overtime. We first generated scatter plots between overtime hours and the following categories: base wage, insurance, rewards, compensation, workers' rank, and whether or not it was peak season. We believe there might be a linear relationship between worker's overtime and other variables. We then conducted univariate regressions between overtime hours and the above variables, and found them all significantly associated with our dependent variable-overtime hours. (See Table 4)

We further conducted multivariate regression by using STATA14. The formulas to calculate worker overtime according to worker treatment and other control variables is as follows:

$$E[Y] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$$

β_0 is the intercept between the curve and Y-axis

X_1 is the base wages, acting as a quantitative variable. Its units are 1,000 yuan per month. β_1 is the coefficient for X_1

X_2 is the individual contribution to the insurance sum[6], acting as a quantitative variable. Its units are in 1,000 yuan per month. β_2 is the coefficient for X_2

X_3 is the rewards, acting as a quantitative variable. Its units are 1,000 yuan per month. β_3 is X_3's coefficient.

X_4 is compensation, quantitative variable. Its units are in 1,000 yuan per month. B_4 is X_4's coefficient.

X_5 indicates whether or not it was the peak season, acting as a control variable. "1" represents peak season, "0" represents off season. β_5 is the coefficient for X_5

X_6 is the rank of the worker, acting as a control variable. Because we only had information provided to us by Zhonghuan, we can only apply this variable of rank in accordance with Zhonghuan's model. "1" represents a rank of P1-a, "2" represents a rank of P1-b, "3" represents a rank of P1-c, β_6 is the coefficient for X_6

The results we draw from the regression are as indicated in Table 4:

[6] According to Chinese labor law, outside of work accidental insurance and maternity insurance that are paid entirely by employers, the responsibility for additional insurance is shared between an individual and his or her employer according to a fixed ratio. As the sum paid by an individual for his or her insurance grows, then the insurance paid by the company for that individual and the benefits they receive grow in accordance with this fixed ratio. Because Zhonghuan's paystubs do not include the amount of money they pay for their employees insurance, we use the payments put forward by the individual workers to represent the insurance they receive.

Table 4：Regression Results of Overtime Hours

	Univariate regressions	Zhonghuan		Samsung		Total	
		Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
		n=82	n=81	n=73	n=73	n=155	n=155
Base wage	**-48.01*** (-55.27, 40.76)**			**-101.90*** (-41.10, -62.70)**	**-104.89*** (-147.52,-62.26)**	**-39.02*** (-53.96, -24.08)**	**-36.15*** (-51.17, -21.15)**
Insurance	**-62.27*** (-72.47, 52.08)**	-10.49 (-41.83,20.85)	-8.76 (-38.40, 20.88)	24.90 (-2.79, 52.58)	26.82 (-2.92, 56.55)	3.01 (-17.85, 23.88)	-1.11 (-22.10, 19.87)
Compensation	**226.36*** (194.65, 258.08)**	**162.58*** (130.61, 194.56)**	**93.04*** (41.33, 144.75)**	**182.75*** (143.11, 222.38)**	**184.17*** (143.54, 224.80)**	**171.57*** (146.49, 196.65)**	**154.00*** (124.28, 183.73)**
Rewards	**-36.30*** (-53.21, 19.39)**	-6.90 (25.06, 11.26)	-1.06 (-19.22, 17.10)	8.37 (-4.99, 21.72)	8.20 (-5.28, 21.67)	1.29 (-9.63, 12.21)	2.20 (-8.62, 13.03)
Job rank			-4.72 (-10.75, 1.30)				
Weather it was peak season	**31.41*** (24.20, 38.62)**		**16.44** (6.29, 26.60)**		-1.24 (-7.94, 5.45)		**5.84* (0.39, 11.30)**
Constant		13.87 (-1.64, 29.37)	**34.74*** (15.75, 53.74)**	**221.74*** (117.64, 325.84)**	**228.47*** (117.55, 339.40)**	**76.61*** (47.11, 106.10)**	**74.89*** (45.69,104.10)**
Adjusted R^2		0.58	0.63	0.63	0.62	0.78	0.79

(Bold* indicates statistical significance, *p < .05, **p < .01, ***p< .001. Among the 185 paystubs, 30 of them indicate Leave/Absence. To more precisely reflect workers' work hours in regular situation, we excluded these 30 paystubs.)

We are mainly investigating the relationship between workers' pay (base wage, social insurance, rewards, compensation) and overtime hours. As such, the categories Zhonghuan, Samsung and Total, Model 1 only include the independent variables "base wage" "social insurance", "compensation" and "rewards". Furthermore, factors such as whether or not production was during peak season and the workers' job rank could have also had an effect on the number of overtime hours. Therefore, in Model 2, other than the four independent variables listed above, the two independent variables of "whether or not production was during peak season" and "job rank" are also included. As Samsung's paystubs do not specify the job rank, the variable "job rank" is not included in the models of Samsung and the Total.

From the above table, we find that of the 4 models that have "base wage" included, the coefficients of "base wage" are negative with statistical significance[7]. To a certain extent, this shows that the higher the base wage, the shorter the overtime hours. We also find that "compensation" is highly associated with overtime hours and statistically significant in all six models. When the worker's compensation is high, the overtime hours will also be very high, indicating a positive relationship between "compensation" and "overtime hours". In analyzing the variable "social insurance" in the 6 models, there is no consistent result, some have a positive coefficient, some have a negative coefficient, and these coefficients are much smaller than that of "base wage" and "compensation". Furthermore, in the univariate regression, "insurance" shows a statistically significant result, but when adjusted for other variables, it loses its significance. We can then conclude that "social insurance" might be a confounder, and the amount of insurance received has little effect on the number of overtime hours. For the same reason, "rewards" might also be a confounder and has little impact on overtime hours. In all of the six models, the goodness of fit is near or above 0.60, which proves that the models fit well our sample. We did not include workers' personal information such as their age and marital status due to a lack of data. This is a limitation in our model.

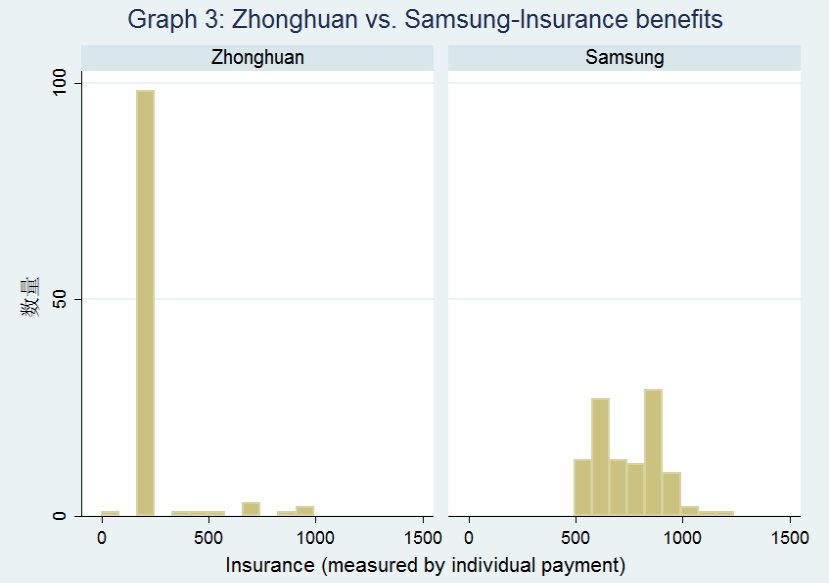
In concluding our analysis, we can say that there is a negative relationship between base wage and overtime hours, and a positive relationship between "compensation" and overtime hours. That is, **when the base wage is low and compensation is high, overtime hours are high**. We cannot assert whether or not the amount of compensation and base wage determine workers' willingness to work overtime, however, objectively, the connection between overtime hours and workers' pay exists. Zhonghuan in particular links compensation to overtime hours, which might make workers more willing to work overtime. We think this is immoral. Furthermore, we cannot assert whether or not Zhonghuan has taken advantage of workers' lack of knowledge with regards to social insurance, in order to deliberately avoid paying social insurance. However, we suspect that this is Zhonghuan's real intention. **Samsung, who is Zhonghuan's employer, has on one hand, decreased labor costs through Zhonghuan and on the other hand, indirectly collaborated with them by the loose nature of its regulations. Samsung should be held responsible for the excessive overtime hours of Zhonghuan's workers.**

[7] As all Zhonghuan workers received the same base wage of 1850RMB, as such, in Zhonghuan's model, we did not incorporate the variable "base wage"

3. Tianjin Zhonghuan May Have Not Paid A Sufficient Amount Of Social Insurance.

Paystubs at Zhonghuan only list out a category: "Insurance paid on behalf of workers", and out of the 108 pay stubs, 99 revealed that social insurance was 168RMB. Upon reading Chinese Labor law and Tianjin Government's related regulations, 168 RMB is the minimum standard pension amount to be paid. In addition, as stipulated by law, workers and employers share the payment of medical insurance and unemployment insurance, but these two payments were not listed out on Zhonghuan's pay stubs.[8] As such, we suspect that Zhonghuan did not purchase medical insurance and unemployment insurance for workers.

1) Zhonghuan Factory is located in Urban Tianjin, and the factory should purchase insurance according to the standard wage for urban workers. However Zhonghuan purchases social insurance for workers according to a standard that is even lower than the minimum wage standard, the "peasant workers" standard. Their treatment of workers is evident here.
2) The amount of social insurance purchased for Zhonghuan workers is much less than that of Samsung workers. As a rough estimate, Zhonghuan only pays 30% of the social insurance that Samsung pays for its workers.
3) As shown in the linear regression, we suspect that Zhonghuan has made use of workers' lack of awareness of social insurance, and intentionally did not pay the full insurance.



Note: we use individual payment to represent workers insurance benefits. Detailed explanation please see footnote 6.

[8] For specific stipulations on social insurance by the Chinese Labor Law and Tianjin city government, please refer to the links below; pensions: http://www.tjrd.gov.cn/rdzlk/system/2011/02/16/010006870.shtml; medical insurance: http://www.tj.gov.cn/zwgk/wjgz/szfl/201202/t20120220_152289.htm; unemployment insurance: http://www.tj.lss.gov.cn/ecdomain/framework/tj/macfllkdehhjbbodkeblpipnamokabfk/malcgleeehhjbbodkeblpipnamokabfk.do?isfloat=1&disp_template=adlcppdeggbhbbodicmplkjhfjibfnab&fileid=20081114155928000&moduleIDPage=malcgleeehhjbbodkeblpipnamokabfk&siteIDPage=tj&infoChecked=0; maternity insurance: http://www.tj.gov.cn/zwgk/wjgz/szfwj/200710/t20071006_27614.htm; injury insurance: http://www.tj.gov.cn/zwgk/wjgz/szfl/201202/t20120220_152291.htm.

4. Unfair Treatment: Zhonghuan Workers Work More Overtime Hours Than Samsung's Workers. Total Income And Other Wages Are Less Than The Latter.

In the auditing report of suppliers in 2015, Samsung announced that they fairly treat workers in all suppliers, without any discrimination.[9] However, Samsung has overlooked an even deeper level of unfair treatment between workers it directly employs, and those of its suppliers. In this area, CLW has discovered very serious issues of unfair treatment. (For comparison of the two factories pay, see Table 5.) As such, we believe that even though Samsung is able to reach standards for the protection of labor rights in its own factories, they shift a lot of responsibility onto suppliers. The main issues we discovered include:

1) In the categories of base wages, premium allowances and social insurance, Zhonghuan workers remains inferior to that of Samsung workers. The total labor cost of Zhonghuan is 15.7 RMB/person*hour, and this is 30% less than Samsung. .
2) Zhonghuan workers on average, work 71 overtime hours per month, whereas, Samsung workers work only 30 overtime hours. Both factories do the same work, but because Zhonghuan workers' hourly wage is much lower than Samsung workers, their total income is lower than the latter.
3) If we take the average amount of social insurance paid by Samsung factories for each of their workers as the standard, we will see that for just the social insurance category, through Zhonghuan, Samsung is able to save 1400RMB every month from each worker. In Zhonghuan, a small factory with 900 workers, one year they can save 15 million RMB. (Samsung Electronics has 227 suppliers in China and 2,800 worldwide[10]).

Table 5: T test- Comparison of Differences in Pay between Zhonghuan and Samsung

	Samsung average	Zhonghuan average	Difference (Samsung - Zhonghuan)	Confidence Interval	P Value
Monthly gross income	4495.6	3896.9	598.7	(387.2, 810.2)	0
Base wage	2662.0	1845.0	817.0	(783.6, 850.4)	0
Insurance	779.4	190.1	589.3	(558.3, 620,3)	0
Rewards	382.8	579.7	196.9	(132.6, 261.1)	0
Compensation	385.1	316.9	-68.2	(-93.6, -42.8)	0

[9] Samsung Electronics,. Page 54
[10] Number of Chinese Suppliers: Samsung Electronics, 2016. Code of Conduct EICC, page 66.
In 2015, a report by Samsung indicated that around the world they have around 2,800 suppliers: Samsung Electronics, 2015. Society-Special Report.

Conclusion and Suggestions

The Samsung 2015 Sustainability Report announced that 94% of suppliers satisfied the requirement of no more than 60 overtime hours every week, 94% of factory worker's wages and benefits reached Samsung's set standards, 100% workers received fair treatment.[11] However, according to the paystub investigation by CLW, we doubt the corporate social responsibility report and corporate social responsibility audit of Samsung:

1. Firstly, the third party audit of Samsung is not strict enough. Suppliers such as Zhonghuan possibly produce fake records to conceal the real working conditions of workers. We remain skeptical of the statistics related to labor rights in the Samsung Sustainability Report.
2. Contrary to Apple, Samsung hires suppliers to manufacture, they also have their own factories. However, there are serious discrepancies between Samsung's own factory and the factories of its suppliers. The pay, which includes wages, social insurance, and total monthly income is much greater at Samsung's own factories.
3. Samsung and its suppliers ignore Chinese Law. About 90% of Zhonghuan workers and 30% of Samsung Tianjin workers have overtime hours higher than that stipulated by Chinese Law. We suspect Samsung places their own regulations above that of Chinese Law, and have not strictly enforced third-party audits that are aligned with Chinese Law.

As such, we propose the four recommendations:

1. Respect Chinese Law, and strictly adhere to Chinese Law standards with regards to supply chain behavior and also third party auditing standards.
2. Invest in the increase of wages for supplier workers, and through Samsung's contract with their suppliers ensure that workers enjoy the same treatment as workers in Samsung's own factories.
3. Ensure workers are able to voluntarily choose to work overtime. At the same time, Samsung and supplier should increase the base wages of workers, or transfer the overtime-related "compensation" into base wage. This prevents workers from working excessively overtime due to low wages.
4. According to the analysis as calculated by CLW above, if Samsung wishes to decrease the overtime hours worked by workers to adhere to the China Labor Law Standards, whilst at the same time, avoid decreasing wages which will push workers to leave, suppliers must increase their base wages to around 2800RMB.

[11] Samsung Electronics,. 2016, page 54

Appendix: Calculation Method

Zhonghuan paystub related calculations:

Rewards = Performance rewards + Full attendance rewards + Skills rewards

Compensation = Compensation for work in excessive heat + Heating allowance + Meal + Night shift subsidy

Total overtime hours (Conservative calculation) = Regular overtime pay/15.95 + Weekend overtime pay/21.26 + Holiday overtime pay/30.89 + Other pays/21.26

Total overtime hours (Non-conservative calculation) = Regular overtime pay/15.95 + Weekend overtime pay/21.26 + Holiday overtime pay/30.89 + Other pays/15.95

Average weekly work hours = 40 hours + total overtime work hours/(Number of days per month/7)

Labor costs = Average monthly gross income/(174+monthly overtime hours)

Samsung paystub related calculations:

Rewards = Monthly rewards + Full attendance Rewards + Skills rewards

Compensation = Position allowance + Compensation for work in excessive heat + Heating allowance + Meal allowance+ Shift swap allowance

Total overtime hours = Regular overtime hours + Weekend overtime hours + Holiday overtime hours

Average weekly work hours = 40 hours + total overtime work hours/(Number of days per month/7)

Labor costs = Average monthly gross income/(174+monthly overtime hours)