

Examining Efficiency Wage Theory in US Fast Food Restaurants

[Jaesun Lee]

Abstract— This paper investigates the correlations between wage and productivity in United States fast food restaurants. The research examines whether or not the industry's expansion is based on the labor productivity improvement. The author selects four major fast food firms, and compares the representative firm's performances with its group mean. Using data from Bureau of Labor Statics, the wages are lower generally than the economic sector average; but the productivity is not lower than the National average. The representative firm, McDonald, does not show significant change in productivity, rather productivity has followed the stable trend over time. The research found that the wage in the fast food industry was lower than economic sector average, but productivity was not lower.

Keywords—efficiency wage, fast food, productivity

I. Introduction

New York State (NYS) announced its minimum wage increase plan in fast food restaurant chains in June of 2015. The anticipated wage would exceed the State's legal minimum wage (\$8.75), so the announcement grabbed the public's attention even though the plan still needs to be confirmed by the State's Labor Department (New York Times, 2015). Before this announcement, an interesting news article compares (hourly) wages between fast food restaurants. Workers at large franchise companies (McDonald's, Burger Kings, etc.) earn less hourly wages than smaller competitors (In-N-Out Burger, etc.) (Triple Pundit, 2014). "Under these circumstances, a question arises: Do the fast food workers have the lower productivity than other similar group?" It has been believed that the wage is proportional to the worker's productivity. In this study, the author investigates the relationship between wages and productivity in the fast food industry.

There are differences in the operational region. More specifically, there exist wage differences between firms in the industry. Some franchises operate nationally and internationally, while others operate regionally. The broader operational area brings higher opportunities to firms such as revenue, visibility, and so forth. As the number of stores increases, more customers visit the store. Accordingly, the firm grows and hire more associates, and so forth. Other fast food chains focus on specific regions. It is reasonable to doubt that the differences in the operational region cause wage

differences between firms. In the fast food industry, if the wage differences in the fast food industry exist, why does this matter? In economics model, *Efficiency wage theory* states that higher compensation (wage) benefits both workers and employers. Higher wage attracts more productive workers, and the workers' motivation increases resulting in the increase of the firm's profit.

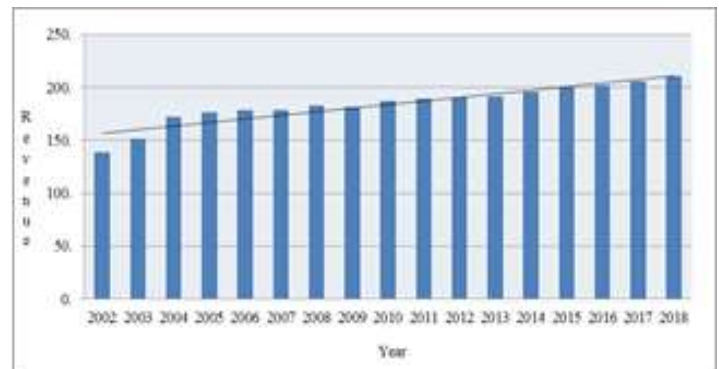
In this study, the author investigates the reason for lower wages in the fast food industry. More specifically, this research aims to investigate the relations between workers' hourly wage and productivity. Section II specifies the industry; section III describes the related theory and literature; section IV empirically analyzes the relations between wage and productivity; and section V concludes the research.

II. Industry overview

Backman (1994) described four general characteristics of fast food.

"It had a low relative monetary price; the end product was served quickly; it was suitable for eating with fingers, and the finished product durability was low."

The fast food industry is expanding in US economy in terms of revenue, and its expansion is expected to continue. The industry takes its portion in Value Added terms stably at around 2 percent in the whole economy in the last two decades (Bureau of Economic Analysis, BEA) . Fig. 1 shows the industry growth and future expansion trends predicted by Statista.



Source: Statista

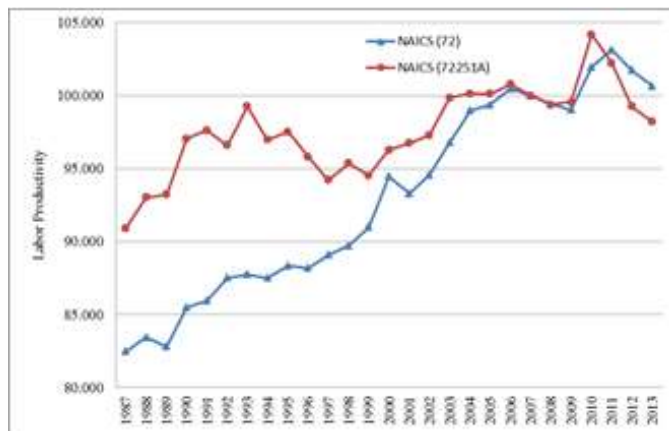
Unit: Billions of US dollars

Figure 1. US Fast food industry growth trend projection

Jaesun Lee
Claremont Graduate University
United States of America
jlee.leejaesun@gmail.com

The Bureau of Labor Statistics (BLS) provides the labor productivity of all economic sectors. The base year of the statistic is 2002 and its measurement is 2007 (2007=100). The author uses the North American Industry Classification System (NAICS) codes for fast food industry 72251A (Restaurants and other eating places, the exact NAICS code for fast food is 722513: Limited -service restaurants) and compares the productivity with its economics sector (higher economic group which the industry belongs to). Its higher economic sector, NAICS codes 72 (Accommodation and Food Services) is selected as the average labor productivity.

The industry statistic shows that the fast food industry has higher labor productivity than its group average. The fast food workers' productivity has been above the group average. This trend has been happening since the mid-1980's. Fig. 2 shows the labor productivity trend over time, and represents this upward trend.



Source: Bureau of Labor Statistics (BLS)

Figure 2. Productivity in the fast food industry

The productivity differences between the industry and its category average lessen and the labor productivity falls below average since 2011. This research examines if the productivity drop in the fast food industry is related to hourly earnings. Specifically, quantitative data is used to assess if the higher wages bring higher productivity in the fast food industry by using real data.

III. Related theory and literatures

There are bunch of literature that investigate the relations between wage and productivity. In economic theory, the productivity is the pivotal reason to determine the size of wage. Media such as Huffpost emphasizes the trends between wage and productivity. The main point is that productivity has increased over time, while the wage does not capture the productivity improvement.

A. Efficiency wage theory

It has been believed that the workers' wage was determined by their productivity. The employer pays the workers for their productivity. Unlike traditional wage-

productivity relation, higher wage results in higher productivity. This is known as "Efficiency Wage Theory". Romer (2006) Summarized the theory as following way. According to efficiency wage theory, higher wages are beneficial to both employees and employers. The reasons are

- Higher wage causes better meals and finally productivity increases.
- Higher wage prevents workers' from shirking (job loss is a costly punishment).
- Higher wage attracts more qualified workers.
- Higher wage increases the worker's devotion to the job.

Due to the associated factors above, the efficiency wage theory is one of the keys to explain the productivity of employees. The theory also explains the causes and results of labor market unemployment in the macroeconomic contexts.

B. Labor market characteristics in fast food restaurants

Van Giezen (1994) studied the effect of the federal minimum wage increase. He focused on the fast food industry because the industry growth and its employment attracted him. In the study, he described the characteristics of labor in the fast food industry. The industry has a high rate of labor mobility (turnover) due to the employment status and workers age. Most of the workers are hired as part-time, and they are in the young generation (workers under 20 years take around 70%). The employment duration is another issue; slightly more than half of the workers continue the work for a year. Under these circumstances, the workers' hourly wage is close to lawful minimum wages. In 1991, the federal mandatory hourly wages increased. Due to this regulation, the wage differences between regions got smaller. Eventually, the wages converged to the federal minimum level.

Ghiselli et al. (2001) studied the manager's turnover inclination and associated factors to fast food restaurant managers. The researchers found that over 25 percent of managers planned to leave their job shortly. Among those who are willing to leave, more than half wanted to work other industries rather than hospitality. The managers at "Limited menu, no tableservice" showed the highest intention to leave, while those at "Commercial Cafeteria" showed the lowest intention. The factors associated to the movement are "intrinsic satisfaction, life satisfaction, age, and race" in the short term. In the long-term (5 years), "intrinsic satisfaction, extrinsic satisfaction, and interrole conflict" are associated to this phenomenon.

Value Line Industry Report (Industry Overview: Restaurant) pointed out that the fast food industry's growth was due to two major reasons: overseas sales and product diversification. The international market is attractive to the firms. McDonald's was operating in over 120 countries and obtained 40 percent of its revenue from European market. Moreover, the 3 quarters of revenues results from 9 major

market (Hoovers). Thus, the international sales will bring more opportunities to the fast food chains. Another factor which brings the industry's continuous expansion is various product diversifications. The chains provide their foods beyond burgers. The coffee and other new launching beverages served in fast food chains are the examples of this phenomenon.

IV. Comparative analysis

A. Sample selection

In the industry analysis, the author selected In-N-Out Burger as the base firm because it pays higher wages to associates than others. Then, the author compared with its top competitors. The competitors are CKE Restaurants (Carl's Jr. and Hardees), Five Guys Enterprises (Five Guys Burgers and Fries) and McDonald's. From all competitors lists provided by Hoover's, A D&B Company, the author selected top competitors for the comparative analysis. Table 1 provides the descriptive statistics for each company in the analysis.

TABLE 1. Descriptive statistics of the players

Company	Wages (\$/h)	Stores	Employee	Stock
CKE	\$9.11	3,450	23,000	Private
Five Guys	\$8.23	1,000+	200	Private
In-N-Out	\$10.5	305	10,000	Private
McDonald's	\$9.01	14,350	420,000	Public (NYSE: MCD)

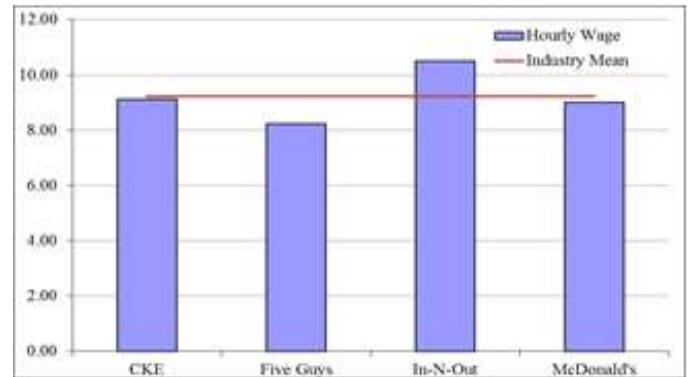
*Source: Hoovers, each company's web, Statista and Wikipedia

** Notes: Employee size refers to all sites in 2014.

As Table 1 demonstrates, McDonald's is the only public firm and others are privately owned. CKE Restaurant Holding was publicly traded starting in 1981 and re-listed in 1994, but Columbia Lake Acquisition Holdings, Inc. merged (www.ckr.com). Among these statistics, the hourly wages range from \$8.23 to \$10.5 and their operational regions are also varied. Fig. 3 compares their hourly wages and industry average earnings (hourly). The industry average earning used was "Fast Food and Counter Workers, broad (OCC code: 35-3020, 2014).

B. Empirical analysis

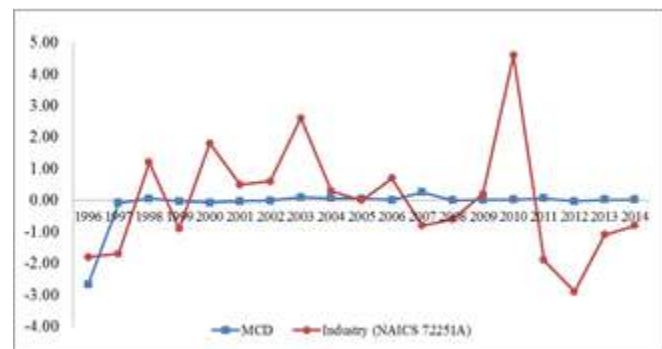
In Fig. 3, In-N-Out burger is the only firm that exceeds the industry mean, while others slightly below the average. Because those other three companies operate in many regions in the United States, I used US national level for each company. Since In-N-Out mostly operates in California and some stores in neighboring States (Arizona, Nevada, Oregon, Texas, Utah), I left hourly wage and productivity comparison in a specific state or regional for the future extension.



Source: The industry average earnings are from Occupational Employment Statistics (OES) Survey provided by Bureau of Labor Statistics (BLS) 2014.

Figure 3. Hourly earnings comparison

Fig. 4 illustrates the company productivity and fast food industry. The representative firm is McDonald's and its productivity was measured by *Revenue per Employee*. Following Schmenner (2004), this measurement is quite reasonable to evaluate the company's productivity. It was obtained from Mergent Online. The industry productivity measure was obtained from BLS data, and I used NAICS 72251A. I also note that the index is productivity changes measured by annual percentage change.



Source: McDonald's from Mergent Online and author's Calculation. Industry (NAICS 72251A) from BLS.

Unit: Δ in percentage

Figure 4. Annual Labor Productivity Change

Fig. 4 illustrates the firm's labor productivity change is stably moving around 0%, which means its productivity is not changing. The industry's overall productivity change fluctuates from time to time, however. The industry consists of various firms beyond fast food, and the productivity changes might follow the economic conditions. ValueLine Industry

overview pointed that the fast food franchises are less sensitive economic conditions than other restaurants (diners, full-service restaurants, etc.).

V. Conclusion

The fast food restaurant does not show the productivity improvement. It does not have productivity drop as well. The productivity change in the fast food industry shows the stable movement at the zero. The result indicates that the labor productivity does not result in fast food restaurant itself and industry as a whole growth.

The wages in the fast food industry are slightly lower than its economic sector average. The deviation of the wage in the industry is large. As noted, workers in the larger chains tend to earn lower payment than smaller competitors. This seems to result from the employment status; most are hired as part-time.

The geographical differences need to be more investigated. Some chains operated in the specific regions, while others do in the nationwide. Even internationally operates.

In the future research, the relation between wage and productivity will more deeply examined. The future examination, the other variables that affects wage and productivity will be controlled.

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About Author (s):

	Jaesun Lee is a Ph. D student at Claremont Graduate University. His research focuses on the behavioral economics, behavioral game theory and industrial organization. He also researches the innovation and technology management.
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