

# AN IMPACT OF MINIMUM WAGE RISING ON FIRM-SPECIFIC FACTORS: THE CASE OF THE EMERGING ECONOMY

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## Abstract

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This study examines how the minimum wage raises in Indonesia affect firm-specific factors such as sales growth, return on assets, return on equity, net profit margin, and gross profit margin. The samples used in this study were 135 companies for 12 years' financial statements ranging from 2008 to 2019, with 1620 observations. An ordinary least square and multivariate analysis of variance are employed. The MANOVA result shows differences in firms specific factors among industries' types. Meanwhile, sales growth and wage growth showed no difference in the value of sales growth and wage growth between industry types. The regression results show that 1) minimum wage has a positive effect on wage growth, but the non-significant effect on sales growth; 2) economic growth has a negative but non-significant effect on sales growth and wage growth, and 3) only total assets and wage growth variables have a positive and significant effect on gross profit margin. Bodnár et al. (2018) asserted that the negative effect of an increase in minimum wage could be lowered by cutting in non-labor costs, rising in product prices, and improving productivity; however, this study found that the increase in the minimum wage does not spur employees to be more productive because the number of companies that get positive sales growth decreases in the declining economic conditions (Acar, Bossavie, & Makovec, 2019; Luca & Luca, 2019; Che Ahmat, Kim, & Arendt, 2021; Alexandre, Bação, Cerejeira, Costa, & Portela, 2022) in which it might increase the firms' exit rate.

**Keywords:** Minimum Wage, Firm-Specific Factors, Productivity, Indonesia

**Authors' individual contribution:** Conceptualization — F.F., A.B., and R.I.Z.; Methodology — F.F.; Writing — Original Draft — F.F., A.B., and R.I.Z.; Writing — Review & Editing — F.F.; Supervision — F.F., A.B., and R.I.Z.

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## 1. INTRODUCTION

According to the International Labour Organisation (ILO), a living wage is a wage that allows workers to live with dignity. A living wage must be enough to enable workers to meet basic needs such as food, shelter, clothing, healthcare, savings, and minimal recreation for workers and their families. A living wage is based on calculating 1) food consumption with enough calories for a family of four based on local dietary habits and 2) non-food costs, including rent, utilities, children's education, and savings.

The minimum wage aims to raise the standard of living, lower poverty, narrow the wage disparity, and increase labor productivity. It is believed that equitable pay will generate a good quality of life, thus stimulating higher productivity and loyalty, lowering the employee turnover rate. On the other hand, labor productivity may increase wages as the firm may generate higher profits. However, a previous study on Thailand's minimum wage has documented that the minimum wage does not reduce overall wage inequality because of a high non-compliance rate and weak law enforcement, particularly in the informal sector (Leckcivilize, 2015). Further, Leckcivilize (2015) found that the minimum wage seems merely to be effective for the large businesses in which a small and medium firm is unaffected.

Studies from developing countries, such as Southeast Asia, found mixed evidence. Fitriya, Basyith, and Zainal (2020) examine the impact of minimum wage on labor productivity, financial performance, and foreign direct investment (FDI) using quarterly financial statements of manufactured listed firms from 2010 to 2018. The results revealed that the minimum wage hurts labor productivity and financial performance but is insignificant. The negative results indicate that an increase in the minimum wage is lower than the inflation rate; thus, it can only cover living costs. Furthermore, an increase in minimum wage affects the higher cost of production, thereby reducing company profits. It appears that changes in the minimum wage have a negative and significant impact on FDI in Indonesia.

Furthermore, for the last few decades, there has been a debate about the effect of increasing the minimum wage. Employers consider an increase in the minimum wage leads to higher labor costs, higher product prices, economic growth downturn, decreased employment, and higher firms' exit rate (Bodnár et al., 2018; Acar, Bossavie, & Makovec, 2019; Luca & Luca, 2019; Che Ahmat, Kim, & Arendt, 2021; Alexandre, Bação, Cerejeira, Costa, & Portela, 2022). In contrast, the employees consider an increase in the minimum wage brings more earnings, higher consumption, higher demands for goods and services, leading to higher economic growth and higher employment opportunities. With these two different perspectives from employers and employees, this study thus examines the impact of minimum wage on firm-specific factors in Indonesia.

The structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 analyses the methodology that has been used to conduct empirical research on the impact of the minimum wage raises in Indonesia on firm-specific factors. Sections 4 and 5 provide the findings and conclusions of the study, respectively.

## 2. LITERATURE REVIEW

The literature on minimum wage effects shows various approaches in which some studies impact different workers (Brown, 1999; Card & Krueger, 1995; Machin & Manning, 1997; Neumark & Wascher, 2008). The previous studies from the US, the UK, and Canada document a significant reduction of wage disparity. However, comparison studies in developing countries show mixed results due to differences in the minimum wage, labor market characteristics and institutions, regulation compliance, and law enforcement (Lemos, 2009). At the beginning of minimum wage enactment, law enforcement is relatively weak. Studies from developing countries, such as Southeast Asia, found mixed evidence. Some studies found a slight negative employment effect after a spike in the minimum wage (Rama, 2001; Alatas & Cameron, 2008; Del Carpio, Nguyen, & Wang, 2012). Some studies found a positive effect if spatial clustering is considered (Magruder, 2013). Some studies found no impact on employment (Sakellariou & Fang, 2014). Sakellariou and Fang (2014) found no effect on employment, yet it reduced wage disparity in Vietnam after the Renovation Reform.

Bodnár et al. (2018) examined the effect of minimum wage from eight Central and Eastern European countries and asserted that the negative effect of an increase in minimum wage could be lowered by cutting in non-labor costs, rising in product prices, and improving productivity. Furthermore, not only Babiak, Chorna, and Pertold-Gebicka (2019) find a negative effect of the minimum wage increase on firm profitability in Poland as it affects labor cost in the absence of labor demand adjustments, but also Acar et al. (2019) and Luca and Luca (2019) found that an increase in minimum wage escalate firms' exit rates from and stated that the probability of the exit rates could be higher for firms with low productivity levels, particularly in sectors where profit margins are low. Moreover, Che Ahmat et al. (2021) found a negative effect of minimum wage on firm value in which the investors perceived it as detrimental to firm's profitability in the long run but also a threat to business; hence, the government should impose a policy to benefit all stakeholders. In addition to Acar et al. (2019), Alexandre et al. (2022) also found a positive relationship between the increase in minimum wage and firms' exit, particularly for financially distressed firms in Portugal. They also stated that the increase in minimum wage creates a cleansing effect in which it boosts aggregate productivity by accelerating the exit of low profitability and low productivity firms.

Brassard (2004) investigated the impact of the minimum wage on poverty alleviation in Vietnam and found significant gender differences within regions for daily agricultural wages and significantly lower wages in North Vietnam. Further, the northern industrial wages are below the legal minimum wage in both state and private sectors, particularly for the textile industry. Moreover, there is a significant difference in the minimum wage between gender and regions. The poverty in Vietnam is concentrated in the rural areas, particularly amongst ethnic minorities' areas and remote areas common in most

developing countries. Further, Hansen, Rand, and Torm (2016) examined the impact of minimum wage changes on wage inequality in Vietnam, and they found that though the overall effect has been a significant decrease in wage inequality, however, the minimum wages can only reduce wage inequality in the formal sectors but not in the informal sectors.

In Cambodia, the minimum wage policymaker is the Ministry of Manpower and Vocational Training in consultation with the Labor Advisory Committee through Prakas (Ministerial Order). The Employment Advisory Committee is a tripartite body consisting of 14 government representatives, seven trade unions, and seven employers representatives. The board is required to discuss minimum wage rates each year. Following the 1997 Labor Code provisions, workers' salaries must be at least the same as the minimum wage, ensuring every worker has a decent standard of living that is compatible with human dignity. Minimum wage levels should be set without distinction by profession or occupation. However, the minimum wage may vary by region, depending on economic conditions and living costs. The critical factors in determining the minimum wage include the inflation rate, the cost of living, productivity, competition, the status of the labor market, and the profitability of a particular industry.

In Indonesia, the minimum wage policy is based on the 2004 Presidential Decree on Wage Councils (representatives of local governments, employers' associations, and trade unions) regulating advisory National, Provincial, and District Wage Councils. The minimum wage rate is determined annually following the central government wage policy. The new wage formula set by the government is the provincial minimum wage for the next year = current year's provincial minimum + (current year's provincial minimum wage (inflation + economic growth)). The factors considered in determining the minimum wage amount include workers and their families; cost of living; level of economic development and per capita income; inflation rate; labor market conditions, and company capabilities, development, and sustainability.

In Malaysia, minimum wage policies are enacted under the National Wage Consultative Council Act 2011 (Law 732). A tripartite body called the National Wage Consultative Council is formed to recommend minimum wage rates to the government. After the government approves it, the Minister of Human Resources makes a Minimum Wage Order. The criteria for determining the minimum wage are divided into two: primary measures and adjustments. The basic criteria include poverty line income (PLI) and median wages. In contrast, the adjustment criteria include changes in the consumer price index (CPI), productivity growth (P), and real unemployment rate (EU).

In the Philippines, minimum wage levels are set at the local level by the Regional Tripartite Wages and Productivity Council. The regional minimum wages to be set by the Regional Councils must be as economically as possible to maintain the minimum standard of living required for employees' health, efficiency, and the general welfare in national economic and social development. In determining the minimum wage, the regional management considers, among other things, relevant factors, the needs of workers and their families, the cost of

living and changes or increases thereof, the prevailing wage level, distribution of income and wealth along with the interests of economic and social development, the effect on field creation, employment, the capacity of employers to pay, adjustment of wages to the consumer price index and the need to encourage industry to invest in rural areas and improve living standards.

In Vietnam, according to Article 90, Labour Code 2012 Vietnam, the wage is defined as a monetary amount paid to the employee by the employer to perform the work as agreed by the two parties. Wage includes remuneration based on work or position, wage allowances, and other additional payments. An employee's wage must not be lower than the minimum wage provided by the government (Labour Code 2012). The minimum wage in Vietnam is determined by tripartite negotiation of the National Wage Council. According to Vietnamese law, wage consists of 1) basic remuneration which is based on the work or position, 2) wage allowances, and 3) other additional payments. Basic remuneration is paid for the contribution given by the worker in accord with the quality and quantity under the standard working conditions applied.

Wage allowances are given compensation for working conditions, work complexity, living conditions, and retention, which is not covered by the basic remuneration. This allowance is considered an additional for basic remuneration, and the work complexity determines it. This allowance is stated in the contract as both parties agree on it. Meanwhile, the other payments in wages are set following the work performance or title of the worker in the employment contract. These additional payments are excluded from bonuses such as mid-shift meal payment and supportive payments in case that employees' close relatives die or get married, supportive payment for employees' birthdays, supportive payments for disability resulting from an occupational accident or disease, and other allowances not related to work performance or title of the employees in the employment contract. This regulation makes it difficult for companies to enforce and determine additional payment.

Further, Fair Labor Association defines net wage as compensation is equal to basic contracted wage + cash benefits + in-kind benefits - mandatory taxes and legal deductions and taxes. Further, the minimum wage in Vietnam differs by region and sector to comply with the differences in the natural and social conditions and living standards. The sectoral minimum wage in Vietnam is set according to the sectoral collective bargaining and should be higher than the regional minimum wage set by the government. Yet, some industries are not available to adhere to this regulation; for example, the salary of many textile workers is highly dependent on minimum wage (Nguyen, 2018).

In Laos, the minimum wage is determined through tripartite social discussions between employers' associations, workers' organizations, and government representatives. Laos has not implemented a minimum wage increase since 2018. At that time, the Lao government raised the minimum wage for all businesses and factories from 900,000 kip (the US\$101) to 1.1 million kip (the US\$ 124) a month.

In Myanmar, the minimum wage is set by the Confederation of Trade Unions, Myanmar. The daily minimum wage in Myanmar has been revised every two years, and discussions on new tariffs will begin in May 2020.

Thailand has the highest minimum wage and occupied the fourth rank of GDP nominal per capita amongst ASEAN countries (NWPC, n.d.). The three-party panel is included in determining the minimum wage, which comprises representatives from the government, employees, and employers. The formula to determine the minimum wage consists of the average monthly wage, bonus, and in-kind benefits such as food, clothing, housing, and other in-kind benefits. The overtime pay is excluded from the minimum wage formula as it is not consistent with a living wage analysis. The wage committee negotiated a fair minimum wage following economic growth and inflation. The Thailand minimum wage is based on three principles, that is, 1) the minimum wage is a significant measure of labor protection; 2) the minimum wage is determined by the tripartite panel, and 3) the fixation of the minimum wage is decentralized to the provincial level. The current wage rate, the consumer price index, inflation rate, standard of living, cost of production, prices of goods and services, employer's capacity to pay, labor productivity, GDP, and the socio-economic situation should be considered before determining the forthcoming minimum wage. The dual labor market (formal and informal) and stringent implementation of the minimum wage policy in Thailand make their labor market unique compared to other neighboring countries. However, due to the close geographical location with some other developing countries, the influx migration of employment is relatively high in Thailand. Most of them are low-skilled workers, and 40 percent are women.

### 3. RESEARCH METHODOLOGY

This study uses primary data and secondary data. Primary data was collected using interviews and FGD techniques with related governments, company owners, company management, and labor associations. Secondary data is obtained through documentation of both the company's financial statements and reports related to the company to obtain data on the company's financial performance. Data analysis was carried out on 135 manufacturing companies from 2008 to 2019 by analyzing 1) sales growth, the minimum wage and economic growth;

2) gross profit margin growth, the minimum wage and economic growth; 3) wage growth, the minimum wage, and economic growth; 4) growth in net profit, the minimum wage and economic growth; 5) growth in profit (return on assets), the minimum wage and economic growth. FGDs were held on September 14th, 2020, with business owners and academics.

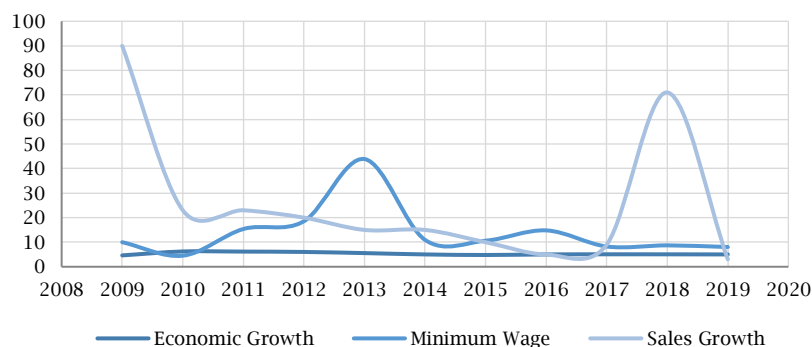
This study employed four OLS regression models and MANOVA tests. A specification test such as normality and heteroscedastic test and the result indicate no issue. The first model is sales growth as the dependent variable and the minimum wage, economic growth, debt ratio, and total assets, as independent variables. The second OLS regression model uses the variable wage growth as the dependent variable and the minimum wage, economic growth, debt ratio, and total assets and sales growth as the independent variables. The third OLS regression model uses the independent variables of gross profit margin as the dependent variable and the minimum wage, debt ratio, and total assets and wage growth. The fourth OLS regression model uses the independent variables of net profit margin as the dependent variable and the minimum wage, debt ratio, and total assets and wage growth. To enhance robustness, it is advisable for future research to include control variables, such as year effect, and more sophisticated time series methods other than OLS, such as random- or fixed-effects models.

## 4. FINDINGS

### 4.1. Sales growth, economic growth, and minimum wage rate

In 2010, when the minimum wage fell, and economic growth increased, sales increased. However, from 2011 to 2013, when the minimum wage increased and economic growth decreased slightly, sales growth declined. In 2014, the minimum wage fell, economic growth also fell somewhat, sales grew close to 20 percent. In 2015, the minimum wage increased, but sales growth fell; then, from 2016 to 2019, when the minimum wage continued to decline, sales growth increased even reaching 23 percent, but in 2019 sales growth fell. It can be concluded that an increase in the minimum wage, which is not followed by economic growth, does not encourage sales growth.

Figure 1. Sales growth, minimum wage, and economic growth

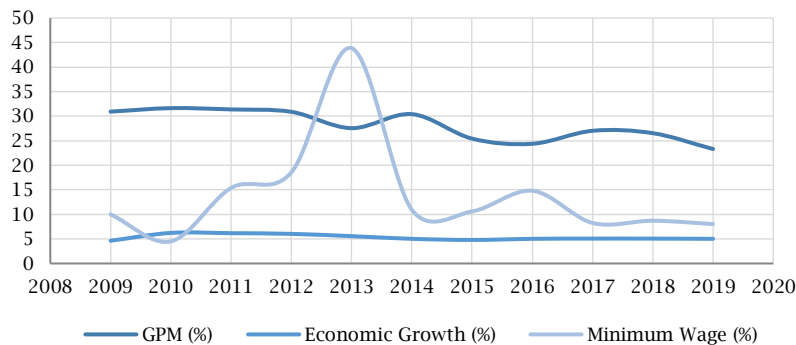


#### 4.2. Gross profit margin, economic growth, and minimum wage rate

Economic growth continues to fall in the graph below, and the gross profit margin shows a downward trend. However, the minimum wage initially tended to increase, but it has not been sloping in the last three years. In 2010, when economic growth increased and the minimum wage decreased, companies could increase their gross profit margin. In 2013, when economic growth fell, while the minimum wage increased drastically to

43 percent, the company's gross profit fell below 30 percent. In 2014, when economic growth continued to decline, and the minimum wage also fell drastically, the company increased gross profit and what happened in 2016. The minimum wage went up again, which the graph showed a decline. In 2017, the minimum wage fell again, so the company's gross profit margin increased. In 2019, when the increase in minimum wage tended to be stable at 8 percent, the company's gross profit margin showed a decreasing trend.

Figure 2. Gross profit margin, minimum wage, and economic growth



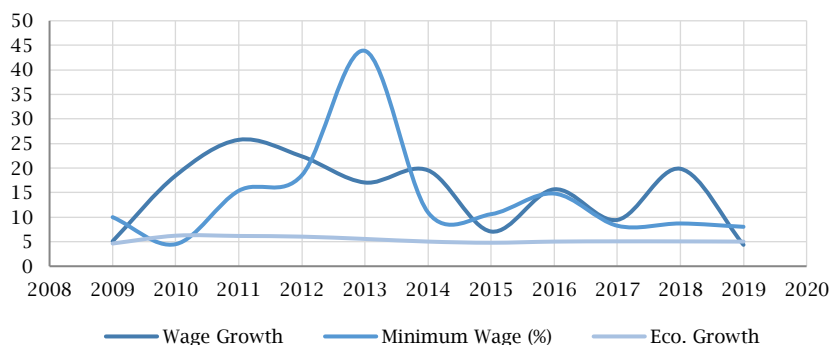
The graph above illustrates the development of the gross profit margin, minimum wages, and economic growth. Its gross profit margin ranges from 30 percent to 25 percent, but it declines from 2009 to 2019. When the minimum wage rose sharply in 2013, the company's gross profit seemed to decrease significantly. When the minimum wage increased from year to year, 2014-2016, there was a tendency for the company's gross profit to decline. It can be concluded that the increase in the minimum wage also affects the gross profit margin because the rise in the minimum wage will cause a considerable increase in labor wages while it does not affect sales.

#### 4.3. Wage growth, economic growth, and minimum wage rate

The graph below illustrates the growth in wages, the minimum wage rates, and the economic growth over the last 11 years. In 2010, the economic growth reached 6.22 percent; with this high economic growth, in 2011, the minimum wage increased

to 15.38 percent. The increase in the minimum wage is followed by a rise in wages, reaching 25.75 percent. From 2009 to 2012, the increase in wages of the firms was always higher than that of the minimum wage. From 2011 to 2013, when the economic growth continued to decline, the minimum wage continued to rise, and the increase in minimum wages reached its highest peak in 2013, where the minimum wage rose to 43.87 percent. It can be seen that in 2014, the rise in labor wages was higher than the increase in minimum wages. From 2014 to 2017, the economic growth continued to decline along with the minimum wage. In 2018, the economic growth continued to decline, but the minimum wage was relatively stable at 8 percent, and labor wages rose higher than the minimum wage increase. It can be concluded that the relationship between the minimum wage and the level of labor wages is positive. This means that the increase in the minimum wage will affect a higher rise in labor wages of firms, including other administrative workers' salaries.

Figure 3. Wage growth, minimum wage, and economic growth

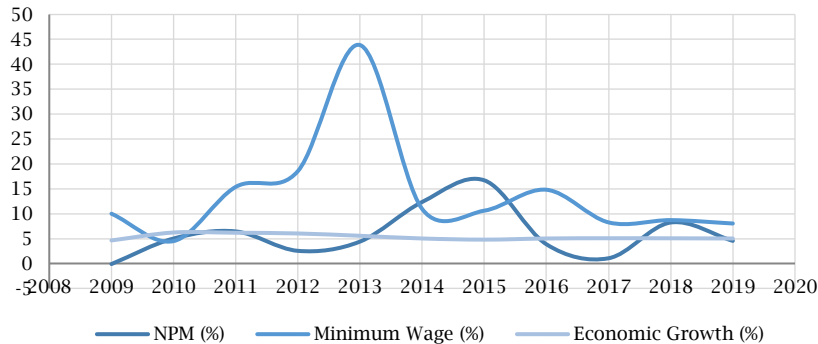


#### 4.4. Net profit growth, economic growth, and minimum wage rate

The graph below describes the development of net profit margin, the minimum wage, and economic growth. The highest net profit margin growth occurred in 2015, reaching 16.7 percent. In 2015, the net profit margin obtained by firms was higher

than the increase in the minimum wage in 2015. The net profit margin obtained in 2012 and 2017 was lower than the economic growth. Overall, an increase in the companies' net profit margin is lower than the increase in the minimum wage as the rise of minimum wage affects higher labor wages which cause higher operating expenses; thus, it lowers net profit margin.

Figure 4. Net profit margin, minimum wage, and economic growth

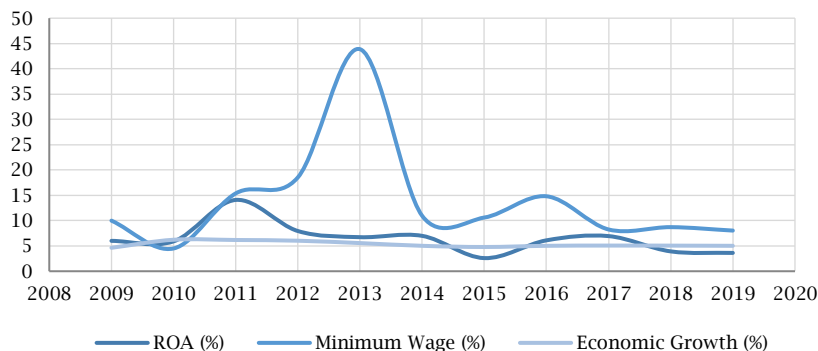


#### 4.5. Growth profit (ROA), economic growth, and minimum wage rate

The graph below depicts the development of return on assets, minimum wages, and economic growth. In the early period (2009-2011), the company's ROA level was higher than the minimum wage. This was

because the sales growth rate was relatively higher than the minimum wage level in that period. However, in the next period, the ROA obtained by the company was lower than the minimum. This is because the increase in the minimum wage causes the company's net profit to fall as the total assets are unchanged so ROA will decrease.

Figure 5. Return on assets (ROA), minimum wage, and economic growth



#### 4.6. MANOVA result

This subsection explains the impact of minimum wages on sales growth, wage growth, gross profit margin, net profit margin, return on assets (ROA), and return on equity (ROE) between industries. Box's test of equality of covariance matrices shows a value of 0.0000; thus, it can be concluded that the covariance matrices of sales growth wage growth, gross profit margin, net profit margin, ROA, and ROE amongst types of industries are the same. Multivariate tests for sales growth, wage growth, gross profit margin, net profit margin, ROA, and ROE amongst types of industry as can be seen from the value of Pillai's trace, Wilks's lambda, Hotelling's trace, Roy's largest root, yield 0.0000 which indicates a difference in sales growth, wage growth,

gross profit margin, net profit margin, ROA and ROE amongst types of industries. Then the tests of between-subjects effects show a significance value below 0.05 for gross profit margin, net profit margin, ROA, and ROE amongst industry types. In contrast, sales growth and wage growth show a significance value above 0.05. The tests of between-subjects effects results indicate differences in the value of gross profit margin, net profit margin, ROA, and ROE between types of industry. In contrast, the value of sales growth and wage growth between industry types is not different. Furthermore, the post hoc test, namely the Bonferroni test, is employed to examine which industries differ in terms of gross profit margin (GPM), net profit margin (NPM), ROA, and ROE.

**Table 1.** Test of between-subject effect

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.	Observed power
Corrected model	Sales growth	2.641	7	.377	1.310	.242	.567
	Wage growth	2.626	7	.375	.967	.454	.424
	GPM	9.946	7	1.421	10.975	.000	1.000
	NPM	2.634	7	.376	5.115	.000	.998
	ROA	1.595	7	.228	2.808	.007	.922
	ROE	6.868	7	.981	2.499	.015	.883
Intercept	Sales growth	19.998	1	19.998	69.422	.000	1.000
	Wage growth	26.971	1	26.971	69.504	.000	1.000
	GPM	94.482	1	94.482	729.775	.000	1.000
	NPM	4.063	1	4.063	55.227	.000	1.000
	ROA	3.967	1	3.967	48.889	.000	1.000
	ROE	26.864	1	26.864	68.434	.000	1.000
INDS	Sales growth	2.641	7	.377	1.310	.242	.567
	Wage growth	2.626	7	.375	.967	.454	.424
	GPM	9.946	7	1.421	10.975	.000	1.000
	NPM	2.634	7	.376	5.115	.000	.998
	ROA	1.595	7	.228	2.808	.007	.922
	ROE	6.868	7	.981	2.499	.015	.883
Error	Sales growth	425.463	1477	.288			
	Wage growth	573.156	1477	.388			
	GPM	191.223	1477	.129			
	NPM	108.650	1477	.074			
	ROA	119.854	1477	.081			
	ROE	579.799	1477	.393			
Total	Sales growth	452.848	1485				
	Wage growth	609.063	1485				
	GPM	318.735	1485				
	NPM	116.469	1485				
	ROA	127.605	1485				
	ROE	619.217	1485				
Corrected total	Sales growth	428.104	1484				
	Wage growth	575.782	1484				
	GPM	201.169	1484				
	NPM	111.284	1484				
	ROA	121.449	1484				
	ROE	586.667	1484				

#### 4.7. Regression result

This section presents the relationship between the minimum wages and sales growth, gross profit margin, and net profit margin. The OLS regression results are shown in Table 2 below.

This study employed four OLS regression models. The first model is sales growth as the dependent variable and the minimum wage, economic growth, debt ratio, and total assets as independent variables. The regression result shows that economic growth has a negative effect on sales growth but is non-significant.

It can be seen that the economic growth for the eleven years observation tended to decline, while sales growth tended to increase. Even though there is a decline in the economy, the sales growth is rising, but sales growth is not significant. The minimum wage has a positive but non-significant effect on sales growth as it cannot spur higher sales. It can be concluded that an increase in the minimum wage cannot stimulate an increase in sales productivity, as can be seen in the graph below.

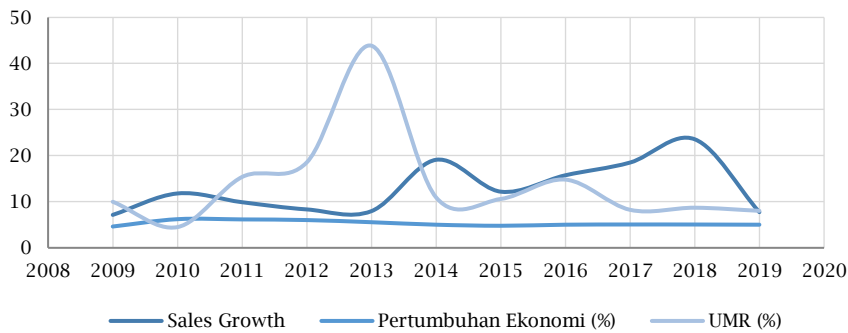
**Table 2.** Regression result

	<i>Sales growth</i>	<i>Wage growth</i>	<i>Gross profit margin</i>	<i>Net profit margin</i>
Constant	.269	.416**	.175***	.074***
Minimum wage	.080	.239	.100	-.042
Economic growth	-.043	-.048		
Debt ratio	.002	.068***	-.006	.006
Ln. assets	.010	-.010	.011**	-.002
Sales growth		-.007		
Wage growth			.045***	.002
F	0.351	.035*	.008**	.922 <sup>b</sup>

Notes: \* alpha 10%; \*\* alpha 5%; \*\*\* alpha 1%.



**Figure 6.** Sales growth, economic growth, and minimum wage

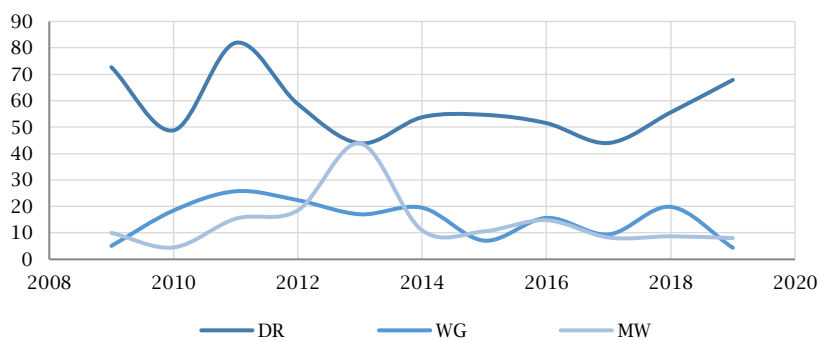


The second OLS regression model uses the variable wage growth as the dependent variable and the minimum wage, economic growth, debt ratio, and total assets and sales growth as the independent variables. The regression result shows that only the debt ratio variable positively and significantly affects wage growth.

The graph below shows that the development of the wage ratio followed the result of the debt ratio. When the debt ratio increases, the wage ratio

also increases. This can be seen in 2011, 2014, and 2018 where wage growth also increased when the debt ratio increased, and wage growth decreased when the debt ratio decreased in 2010, 2013, and 2017. Even though there is an increase in labor wages that have increased more significantly than the increase in the minimum wage; however, the rise in labor wages is non-significant in affecting the minimum wage growth.

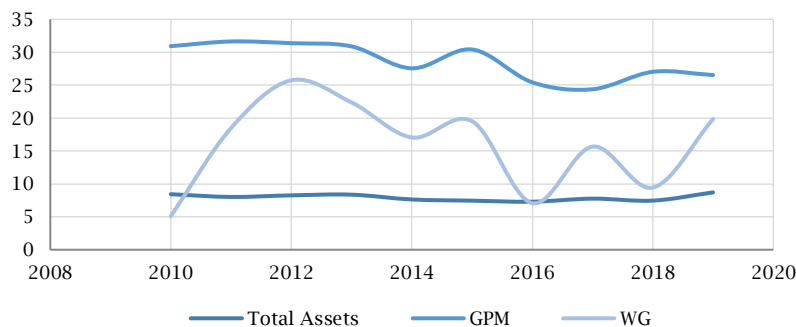
**Figure 7.** Wage growth, debt ratio, and minimum wage



The third OLS regression model uses the independent variables of gross profit margin as the dependent variable and the minimum wage, debt ratio, and total assets and wage growth. The regression result shows that the total assets and wage growth variables positively and significantly affect the gross profit margin. The company's total assets and gross profit margin experienced a downward trend from 2009 to 2018, although

a slight increase initially. Likewise, there is a considerable increase in wage growth. There was a slight increase in the company's gross profit margin from 2012 to 2016. Though wage growth decreased and reached its lowest point in 2016, the gross profit margin also reduced. This shows that other factors affect the gross profit margin, such as raw material prices and overhead costs.

**Figure 8.** Total assets, gross profit margin, and wage growth





The fourth OLS regression model uses the independent variables of net profit margin as the dependent variable and the minimum wage, debt ratio, and total assets and wage growth. The regression result shows that none of the variables significantly affect the net profit margin. The four regression models used show that the minimum wage has no significant impact on sales growth, wage growth, gross profit margin, and net profit margin. Meanwhile, wage growth has a significant effect on the gross profit margin.

## 5. CONCLUSION

It can be concluded that 1) an increase in the minimum wage, which is not followed by higher economic growth, will not encourage sales growth; 2) an increase in the minimum wage also affects the gross profit margin because it caused a considerable increase in labor wages, while in contrast, it affected no increment in sales; 3) an increase in the minimum wage will be followed by an increase in the wages of corporate workers that are higher, both for operational workers and administrative workers; 4) overall, the increase in the company's net profit margin is lower than the increase in the minimum wage, because the increase in labor wages is higher than the sales so that it can cause an increase in operating expenses which results in a low net profit margin of the company. This is because the increase in the minimum wage causes the company's net profit to decrease.

The results of the MANOVA test using the multivariate test for sales growth, wage growth, gross profit margin, net profit margin, ROA, and ROE using the Pillai's trace, Wilks's lambda, Hotelling's trace, Roy's largest root tests show that there are differences in sales growth, wage growth, gross profit margin, net profit margin, ROA, and ROE amongst industry types. The tests of between-

subjects effects test results show differences in the value of gross profit margin, net profit margin, ROA, and ROE between types of industries. Meanwhile, sales growth and wage growth showed no difference in the value of sales growth and wage growth between industry types.

The regression results show that 1) none of the independent variables significantly affect sales growth. The minimum wage has a positive but insignificant effect on sales growth, while economic growth has a negative but insignificant impact on sales growth; 2) only the debt ratio has a positive and significant effect on wage growth; 3) only total assets and wage growth variables have a positive and significant impact on gross profit margin; 4) none of the independent variables have a significant effect on net profit margin; 5) minimum wage has a positive impact on wage growth; 6) wage growth has a positive and significant impact on gross profit margin; 7) economic growth has a negative but insignificant effect on sales growth and wage growth. The findings of this study are restricted to the limitation of the data, which was collected through publicly available data sources such as annual reports and other databases. Nonetheless, the sample size is limited by the number of manufacturing firms listed on the Indonesian Stock Exchange from 2008 to 2019. Further, the validity of the findings interpreted in this study is limited to the scope of the data and the condition of economics for the period of the data. This paper is essential for future research as it could be used as a benchmark of the previous impact of minimum wage on firm-specific factors as the demand to increase minimum wage occurs continuously and frequently every year. Further, this study is essential for firms, labor unions, and the government to review what has been done so that all parties can have equal benefits.

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