ECON 4474 Group 6
Final Term Paper

Study on the Impacts of the Statutory Minimum Wage Ordinance On Income Inequality in Hong Kong: An Analysis of the Pre- and Post-implementation Periods

Student Name	SID
CHAN Pui Yu	21013579
CHAN Kin Fai	20758562
CHONG Tsz Kei	20866931

Major Revision

1. *Corrected the coefficient explanation (Beta 1 Post): After the Statutory Minimum Wage, the time trend in the **control group** only.*
2. *Corrected the LFPR explanation: Will workers with productivity lower than the new minimum wage, who might face layoff, cannot find a job and quitted the labour force?*
3. *As promised in the draft term paper, we have refined the age group from 25-59 vs. 60 or above, to 3 groups (Youth, Middle-aged, Senior) vs. 60 or above.*
4. *In response to valuable feedback received, the refined wage growth model from the combined treatment groups (Cleaning + Guards) to separate analysis.*
5. *Supported our analysis with the rationale part: How did we come up with these focuses? Why is it important?*
6. *Added qualitative research on the actual effect on those low-wage workers by examining their welfare, e.g. Change in lunch breaks and rest days, Comprehensive Social Security Assistance (CSSA) vs. monthly income in minimum wage*
7. *After investigation, we have discovered that the labour market is competitive with many workers and employers; the employer is not able to have monopsony power, therefore we removed the part.*

1. Introduction

The income gap has been a prolonged social issue in Hong Kong, highlighting challenges in resource distribution and poverty. To address this, the government introduced the Wage Protection Movement (WPM) in 2006. However, due to its limited participation and effectiveness, the Statutory Minimum Wage (SMW) policy was implemented on May 1, 2011, as a more structured measure to protect grassroots workers.

This study investigates the impact of the Statutory Minimum Wage (SMW). Specifically, we aim to:

I. Examine the SMW's effects on Hong Kong's nominal wage growth and income distribution,
II. Assess the SMW's impact on the employment rate, and
III. Evaluate whether the SMW led to increased discrimination or welfare loss in employment based on gender or age.

2. Literature Review

In Hong Kong, income inequality has been historically high, with a Gini coefficient of 0.53 in 2006, indicating a considerable disparity (Census and Statistics Department, 2006). In response, the government initially introduced the Wage Protection Movement (WPM) in 2006, but its voluntary nature led to poor uptake, with less than 1% of owners' committees joining the scheme by 2007 (Chong & Chong, 2007). This prompted the launch of the Statutory Minimum Wage (SMW), which took effect on May 1, 2011, at an initial hourly rate of HK$28 (Legislative Council Secretariat, 2008).

The Statutory Minimum Wage (SMW) Ordinance was thus designed to provide a minimum wage at an hourly rate for employees, to protect grassroots workers by guaranteeing them a minimum income that is sufficient to meet basic living costs, and to reduce wage inequality without harming competitiveness. However, its effectiveness and impacts have remained contested.

Existing research has provided mixed evidence on the government's decision and its impacts. Wong (2012) found that many low-income workers did not experience significant wage changes post-policy, suggesting that the SMW may be set below equilibrium. These arguments highlighted the need for further empirical investigation on whether the SMW has meaningfully affected wage growth, employment outcomes, and labour market fairness in Hong Kong.

3. Rationale: Income, Minimum Wage and Labour Market

3.1. Low-Income Group and Job Nature

Industries and job positions influence workers' income. In terms of industry, security and cleaning industry workers in Hong Kong typically earn low incomes, particularly general guards and cleaners (rather than managers). These occupations generally require lower skill levels, involve repetitive tasks, and thus unskilled workers can enter the labour market easily, leading to a high labour supply, which depresses the wage levels. The lower demand for skilled workers reduces their bargaining power, as they are easily replaceable.

Since the SMW policy targets lower-income groups, analysing its impact on these low-income groups, compared to higher-paid employees, such as those in the financial sector, can provide an empirical assessment of the policy's effectiveness and its influence on the intended beneficiaries in Hong Kong.

Our main analysis focus is: ***"Did the SMW help increase wage growth for low-wage groups more than high-wage groups to narrow the income inequality?"***

3.2. Minimum Wage and the Policy Dilemma

To raise the salaries of low-income groups, the minimum wage is one common tool used by the government. However, Hong Kong cleaning and and security labour market consist of many firms, meaning employers has no monosopy power, which means an effective minimum wage has to be set above the market equilibrium wage, resulting in a surplus in the labour market. The quantity of labour supplied by workers exceeds the quantity of labour demanded by firms. This surplus manifests as involuntary unemployment, disproportionately affecting low-skilled and less productive workers. Firms, seeking to minimise labour costs and maximise productivity, may reduce hiring or substitute labour with capital, thereby exacerbating unemployment among vulnerable worker groups. Consequently, while minimum wage policies aim to improve worker welfare, they may inadvertently reduce employment opportunities for certain groups in the labour force. Therefore, Hong Kong would face a trade-off in the SMW policy. Policymakers must choose between employment levels and minimum income.

Therefore, we would focus on the employment rate by industry, assessing whether low-wage industries face lower employment rates. Also, assessing whether the unemployed workers having productivity lower than the minimum wage are discouraged and quit the labour force.

3.3. Income and Discrimination

Labour represents human capital from the perspective of employers, who assess workers' productivity based on various characteristics. This is particularly common in low-income, physically demanding jobs, where employers may discriminate based on factors such as gender, age, and experience. For example, due to physical differences, female workers are

often perceived as less productive than males, older workers as less productive than younger ones, and less experienced workers as less productive than experienced ones. When a minimum wage is introduced, increasing the cost of labour, employers may become more selective and potentially discriminate against workers perceived as less productive. This can lead to concerns among employees about discrimination, potentially reducing their motivation and satisfaction.

Hence, we would focus on the employment rate by age, assessing whether the elderly face a lower employment rate, perhaps due to age preference.

4. Methodology

4.1. DiD Regression Models

We collected nominal wages of selected industries (the financial and insurance sectors, and the general security guards and cleaners) and nominal wages by age groups, the employment rate, labour force participation rate, GDP and CPI during 2010-2013 from the Census and Statistics Department. We select this timeframe as it encompasses both the pre-implementation and post-implementation phases of Hong Kong's Statutory Minimum Wage (SMW) policy. To reduce the confounding effects, we excluded 2008-2009 from our analysis, considering the significant economic disruptions caused by the global financial crisis during that period.

4.1.1. Nominal Wage Growth Analysis

$$NominalWageGrowth_{it} = \alpha + \beta_1 Post_t + \beta_2 Treated_i + \beta_3 (Post_t \times Treated_i)$$

$$+ \beta_4 Gender_i + \beta_5 GDPGrowth_{t-1} + \beta_6 CPI_{t-1} + \epsilon_{it}$$

Table 1: Measurement of Nominal Wage Growth Model (See appendix A for variables and coefficient explanations)

Variable	Measurement
Dependent Variable	Nominal Wage Growth (%)
Independent Variables	**Post:** 0: Before SMW; 1: After SMW
	Treated: 0: Control Group; 1: Low-wage Treatment Group
Control Variables	Gender (0=female,1=male); GDP Growth (%); CPI Growth (%)

Hypothesis for Nominal Wage Growth Analysis:

- **H_0 (Null hypothesis)**: The implementation of SMW has **no significant effect** on the nominal wage growth of low-wage workers compared to other workers.
- **H_1 (Alternative hypothesis)**: The SMW results in a **significant increase** in nominal wage growth for low-wage workers relative to other workers post-implementation.

Explanation: This hypothesis tests whether the SMW increased the nominal (not inflation-adjusted) wages of affected workers relative to the control group.

4.1.2. Industry-Based Employment Rate Analysis

$$EmploymentRate_{it} = \alpha + \beta_1 Post_t + \beta_2 Treated_i + \beta_3 (Post_t \times Treated_i) + \beta_4 Gender_i + \beta_5 GDPGrowth_{t-1} + \beta_6 CPI_{t-1} + \epsilon_{it}$$

Table 2: Measurement of Industry-Based Employment Rate Model (See appendix B for variables and coefficient explanations)

Variable	Measurement
Dependent Variable	Employment Rate
Independent Variables	**Post:** 0: Before SMW; 1: After SMW
	Treated: 0: Control Group; 1: Low-wage Treatment Group
Control Variables	Gender (0=female,1=male); GDP Growth (%); CPI Growth (%)

Hypothesis for Employment Rate Analysis:

- **H_0 (Null hypothesis)**: The implementation of the SMW has **no significant negative impact** on the employment rate of low-wage workers compared to unaffected workers.
- **H_1 (Alternative hypothesis)**: The SMW has a **minimal or negligible negative impact**, or even a **slightly positive impact**, on employment rates of low-wage workers.

  Explanation: This hypothesis tests whether the implementation of the SMW caused minimal or negligible negative impacts, or even slightly positive effects, on employment rates for affected low-wage workers compared to unaffected workers.

4.1.3. Age-Based Employment Rate Analysis

$$EmploymentRate_{it} = \alpha + \beta_1 Post_t + \beta_2 Treated_i + \beta_3 (Post_t \times Treated_i) + \beta_4 Gender_i + \beta_5 GDPGrowth_{t-1} + \beta_6 CPI_{t-1} + \epsilon_{it}$$

Table 3: Measurement of Age-Based Employment Rate Model (See appendix C for variables and coefficient explanations)

Variable	Measurement
Dependent Variable	Employment Rate
Independent Variables	**Post:** 0: Before SMW; 1: After SMW
	Treated: 0 (Control): workers aged 60 or above 1 (Treatment): Workers aged 25-34 [Youth], 35-44 [Middle-aged] or 45-59 [Senior]
Control Variables	Gender (0=female,1=male); GDP Growth (%); CPI Growth (%)

Hypothesis for Employment Rate Analysis:

- **H_0 (Null hypothesis)**: The implementation of the SMW has **no significant negative impact** on the employment rate of elderly workers compared to unaffected workers.
- **H_1 (Alternative hypothesis)**: The SMW has a **minimal or negligible negative impact**, or even a **slightly positive impact**, on the employment rates of elderly workers.

  Explanation: This hypothesis tests whether the implementation of the SMW caused minimal or negligible negative impacts, or even slightly positive effects, on employment rates for the elderly workers compared to unaffected workers.

4.1.4. Labour Force Participation Rate Analysis

$$LFPR_{it} = \alpha + \beta_1 Post_t + \beta_2 Treated_i + \beta_3 (Post_t \times Treated_i) + \beta_4 Gender_i + \beta_5 GDPGrowth_{t-1} + \beta_6 CPI_{t-1} + \epsilon_{it}$$

Table 4: Measurement of Labour Force Participation Rate Model (See Appendix D for variables and coefficient explanations)

Variable	Measurement
Dependent Variable	Labour Force Participation Rate
Independent Variables	**Post:** 0: Before SMW; 1: After SMW
	Treated: 0: Control Group; 1: Low-wage Treatment Group
Control Variables	Gender (0=female,1=male); GDP Growth (%); CPI Growth (%)

Hypothesis for Labour Force Participation Rate Analysis:

- **H_0 (Null hypothesis)**: The implementation of SMW has **no significant effect** on the labour force participation rate.
- **H_1 (Alternative hypothesis)**: The SMW results in a **significant decrease** in labour force participation rate.

  Explanation: This hypothesis tests whether the SMW decreased the labour force participation rate of affected workers relative to the control group.

4.2. Empirical Analysis Based on Literature and Statistical Data

Due to the limited availability of data on low-income part-time workers between 2010 and 2013, as well as challenges in quantifying qualitative aspects of workers' welfare, we adopted an alternative analytical approach instead of relying solely on regression models. We also reviewed relevant literature and statistical data from 2010 to the present to assess the impact of the minimum wage on workers.

5. Results and Findings

5.1. Nominal Wage Growth

5.1.1 Nominal Wage Growth Model Results (See details in Table A.1 in Appendix A)

Table 5: Nominal Wage Growth Model Simplified Result

Variable	Cleaners*		Security Guards**	
	Coefficient	P-value	Coefficient	P-value
Intercept	-8.3389	0.257	-5.4905	0.154
POST	4.4464	0.226	4.0568	0.065
TREAT	2.4850	0.145	1.7893	0.238
Post_Treated	-1.4500	0.706	-0.6418	0.721
GENDER	0.0117	0.995	-0.0643	0.941
CPI_lag	0.6435	0.276	0.0326	0.914
GDP_lag	1.2326	0.215	0.9571	0.074

***Cleaner:** Refers to general or lavatory cleaning workers under the "Pest control and cleaning services" sector, categorized as miscellaneous non-production workers.*

***Security Guards:** Refers to building attendants/guards under the "Real estate maintenance management" sector, also classified as miscellaneous non-production workers.*

5.1.2. Impact of the Statutory Minimum Wage Ordinance

POST is insignificant for cleaners with p-value at 0.226; While for security guards, it has a marginally significant impact with a p-value = 0.065 and a coefficient = 4.0568. It indicates that after the SMW, the control group (Security Guards) has a higher wage growth, but not for the cleaners. Meanwhile, **TREAT** are insignificant for both cleaners (p-value = 0.145) and security guards (p-value = 0.238), meaning before the SWM, there is no baseline difference between the treatment group (Cleaners or Security Guards) and the control group (Financial and insurance industry) in terms of wage growth.

Regarding our targeted analysis of the model,

*Did the SMW help increase wage growth for treatment groups **more than** control groups to ease the income inequality issue?*

The interaction term **Post_Treated**, which captures the differential effect of the policy on the treatment group relative to the control group, is insignificant (p-value = 0.706 for cleaners;

p-value = 0.721 for guards), indicating no clear differential effect. Essentially, the SMW did not differently affect wage growth in treatment groups compared to control groups, indicating the impact is the same for both groups.

5.1.4. Short Conclusion

Overall, while the SMW contributed to raising base wages, especially for security guards, its impact on overall wage growth relative to control groups was limited. The interaction effects were statistically insignificant, suggesting no distinct advantage for low-wage sectors compared to higher-wage industries. These findings indicate that although SMW improved minimum earnings on paper, its real-world effectiveness in addressing income inequality and enhancing worker welfare was constrained by employer cost-cutting strategies.

5.2. Industry-Based Employment Rate Model

5.2.1 Model Results (See details in Table A.2 in Appendix A)

Table 6: Industry-Based Employment Rate Model Simplified Result

Variable	Coefficient	P-value
Intercept	97.2596	0.000
POST	-0.0443	0.793
TREAT	2.081e-14	1.000
Post_Treated	1.954e-14	1.000
GENDER	-1.1333	0.000
CPI_lag	0.0990	0.000
GDP_lag	-0.0993	0.014

5.2.2. Impact of the Statutory Minimum Wage Ordinance

The **POST** variable is insignificant (p = 0.793), suggesting that the SMW implementation is not associated with any employment changes for the control groups (Cleaners and Security guards). Both the **TREAT** and **Post_Treated** variables have zero effect (p = 1), indicating no differences in employment related to which industry, be it treatment or control, or its interaction with the policy period.

5.2.3. Impact of Other Independent Variables

One interesting finding is that **GENDER** is very significant (p = 0) with a coefficient = -1.13, indicating that being a male results in a lower employment rate than being female. However, we should note that the participation ratio of males and females differs. Details will be discussed, but in short, males participate more in the workforce than females. Fewer females in the workforce means some of them do not face unemployment issues than males, per se.

5.3. Age-Based Employment Rate Model

5.3.1 Model Results (See details in Table A.3 in Appendix A)

Table 7: Age-Based Employment Rate Model Simplified Result

Variable	Youth		Middle-Age		Senior	
	Coef.	P-value	Coef.	P-value	Coef.	P-value
Intercept	97.0556	0.000	97.1540	0.000	97.2386	0.000
POST	-0.2454	0.580	-0.1083	0.743	-0.4596	0.144
TREAT	1.1956	0.000	0.7122	0.000	1.1541	0.000
Post_Treated	0.2381	0.560	0.2434	0.448	0.3108	0.327
GENDER	-1.2285	0.000	-0.7579	0.000	-1.1891	0.000
CPI_lag	0.1102	0.101	0.0886	0.081	0.1299	0.007
GDP_lag	0.0986	0.946	0.0360	0.000	-0.0240	0.792

5.3.2. Labour Market's Preferences on Workers' Age

The insignificant **POST** coefficients (p-values: Youth = 0.580, Middle-Age = 0.743, Senior = 0.144) suggest the SMW does not affect non-elderly (control) employment rates. TREAT is highly significant (p = 0.000) with coefficients ranging from 0.7122 (Middle-Age) to 1.1956 (Youth), indicating elderly workers have higher employment rates than younger workers. We excluded age 15–24 due to their unstable employment, which could bias results.

Despite seeming counterintuitive, many elderly workers remain employed, likely because they still have a job and are not retiring. The **Post_Treated** interaction term is insignificant (p-values: Youth = 0.560, Middle-Age = 0.448, Senior = 0.327), indicating no SMW-driven preference for younger workers, suggesting no age discrimination in the labour market post-SMW.

5.4. Labour Force Participation Rate Model

5.4.1. Model Results (See details in Table A.4 in Appendix A)

Table 8: Labour Force Participation Rate Model Simplified Result

Variable	Coefficient	P-value

Intercept	48.2480	0.000
POST	1.1540	0.000
TREAT	8.743e-15	1.000
Post_Treated	1.288e-14	1.000
GENDER	19.2600	0.000
CPI_lag	0.0473	0.256
GDP_lag	0.0884	0.059

5.4.2 Impact of discouraged workers

POST is very significant (p = 0), with a 1.154 coefficient value, indicating that imposing SMW has increased the Labour Force Participation Rate, meaning more control groups (Cleaners and Security Guards), working age population, joined the labour force after SMW.

Next, **TREAT** and **Post_Treated** are insignificant (p = 1), indicating that for treat, there is no baseline LFPR difference between the control and treatment groups before the SMW; For the interaction term, it means that after the SMW, it did not affect the LFPR for the treatment group compared to the control group. Hence, we can accept the null hypothesis and conclude that there is no evidence of a discouraged worker effect. It means low-wage workers with productivity lower than the minimum wage did not exit the labour market **after** the SWM.

5.5. Other Impacts of the Statutory Minimum Wage Ordinance

Although employment and labour force participation may not be significantly affected by the Statutory Minimum Wage (SMW), there are other potential impacts on workers' conditions. For example, employers might avoid layoffs but reduce employees' working hours, leading to underemployment. Additionally, employers may cut rest days and meal breaks as a cost-adjustment measure, which can negatively affect workers' welfare.

In Hong Kong, underemployment refers to employed persons who have involuntarily worked less than 35 hours during the 7 days before enumeration and were available for additional work (Census and Statistics Department, n.d.). Regarding underemployment, despite concerns that the Statutory Minimum Wage (SMW), implemented in 2011, might increase underemployment by encouraging employers to reduce working hours, the data suggest otherwise. Hong Kong's underemployment rate declined following the SMW introduction, from 2.0% in 2010 to 1.7% in 2011(Hong Kong SAR Government, 2012), and further down to 1.5% in both 2012 and 2013 (Hong Kong SAR Government, 2013). This consistent downward trend indicates that the policy did not trigger a widespread shift toward short-time or involuntary part-time employment. On the contrary, the labour market remained stable, and underemployment pressures eased during the post-SMW period, suggesting that the

policy did not compromise employment quality in terms of working hours (Census and Statistics Department, 2014).

Table 9: Changes in Paid Non-Wage Benefits Before and After SMW Implementation

Employment Benefit	Before SMW	After SMW	Percentage Point Change
Paid Weekly Rest Days	98.6%	52.0%	–46.6%
Paid Meal Breaks	73.6%	58.6%	–15.0%

While the Statutory Minimum Wage Ordinance aimed to enhance earnings for low-wage workers, evidence indicates that many employers responded by reducing non-wage benefits, particularly in the cleaning and security sectors. A survey conducted by Oxfam Hong Kong (2012) revealed that the percentage of workers receiving paid rest days dropped significantly from 98.6% before the SMW to only 52% afterwards, indicating that **nearly half of the interviewed workers lost this benefit**. Similarly, the proportion receiving paid meal breaks declined from 73.6% to 58.6%, representing a 15% reduction. These adjustments were especially prevalent among outsourced workers, such as cleaners and security guards, whose contractors often sought to offset increased wage costs by trimming peripheral entitlements.

6. Discussion

From the above findings, we can conclude that:

- The SMW led to nominal wage growth for security guards only; The impact was similar across high- and low-income groups, suggesting SMW did not help narrow the income gap.
- The SMW had no significant effect on the employment rate, indicating it did not cause notable job losses.
- There was no evidence of age-based preference in employment after the SMW, showing it did not increase age discrimination in the labour market.
- There was no evidence of the discouraged workers effect after the SMW.

6.1. Wage Growth Analysis

The result from the model implies that the SMW did not ease the income inequality in Hong Kong in terms of wage growth. In fact, according to research by Wong (2012) on the Working Poverty and Minimum Wage, the low-income people, with 80% of them having an active work, did not receive a significant change in the hourly wage from 2009 to 2012. Our model result reveals an insignificant differential effect of SMW on nominal wage growth between the treatment and control group, indicating that SMW did not effectively narrow the wage gap for low-income workers.

Table 10: Comparison of Minimum Wage and Actual Average Monthly Wage of Low-income Group

Year	Minimum Hourly Wage (HKD)	Guard (260 hours/month)		Cleaner (208 hours/month)	
		Minimum Monthly Wage (HKD)	Average Monthly Wage* (HKD)	Minimum Monthly Wage (HKD)	Average Monthly Wage* (HKD)
2010	N/A	N/A	7,967	N/A	5,682
2011	28	7,280	9,129	5,824	6,726
2012	28	7,280	9,641	5,824	7,137
2013	30	7,800	10,783	6,240	7,431

** The wage used in calculation in Q4*
(Legislative Council, n.d.) (Census and Statistics Department, 2010-2013)

Table 10 illustrates the discrepancy between the statutory minimum wage and the actual average wages of security guards and cleaners from 2010 to 2013. Although the minimum hourly wage was introduced in 2011 at HK$28 and later raised to HK$30 in 2013, the monthly wages calculated for full-time guards (260 hours/month) and cleaners (208 hours/month) based on the minimum wage remained below the actual average monthly wages in both the same year and the previous year. Taking 2013 as an example, the minimum monthly wage for guards was HK$7,800, while the actual average wage was HK$10,783. Similarly, cleaners would earn a minimum of HK$6,240 compared to an actual average wage of HK$7,431. The result suggests that the SMW sets a basic wage floor to prevent exploitation; it was not set at a level higher than the average market wage levels, hence ineffective in increasing market wage levels. This explains the reasons the SMW contributes to a limited and insignificant improvement in income for low-income workers.

Table 11: Full-time Minimum Wage vs. CSSA Welfare Payments by Household Size (2011–2013)

Household Size	Average CSSA Payment (HK$/month)	Full-time Min. Wage Income (HK$/month)
2 persons	HK$7,307 (basic needs for family)	HK$5,824 ($28/hr × ~208 hrs)
3 persons	HK$9,505	HK$5,824
4 persons	HK$11,194	HK$5,824

Table 11 compares the monthly income of a full-time minimum wage earner (based on HK$28/hour from 2011–2013) with the CSSA welfare payments required for basic living

across different household sizes. The data (Oxfam Hong Kong, 2012) clearly shows that minimum wage earnings (HK$5,824/month) fall short of the CSSA levels for 2-person (HK$7,307), 3-person (HK$9,505), and 4-person (HK$11,194) households. This highlights that minimum wage alone was insufficient to meet basic living standards for most households during that period.

6.2. Employment Rate Analysis

6.2.1. Industry-Based Analysis

For the employment rate after SMW, it seems to be insignificant, meaning whether imposing SMW or not has no differential effect on the employment rate. This shows, unlike the traditional economic perspective, as used by many SMW opposers, that unemployment would increase due to higher labour costs. One major reason, as explained by **Table 11,** is that the minimum wage does not exceed the average monthly wage for those workers in the low-paying industries. Additionally, even if, as stated in some literature, some companies perceive a high wage floor, the low-paying jobs picked in our research are unlikely to be replaced by automation or machines (Economist, 2020). One of the bottleneck of automation/computerisation factor is “Perception and manipulation”, which manual processes like cleaning the streets / equipments as a cleaner, or “social intelligence” like dealing with property interpersonal interaction as a security guard, are the evidence that some low-paying sectors are hard to be replaced by computerisation (Frey & Osborne, 2016).

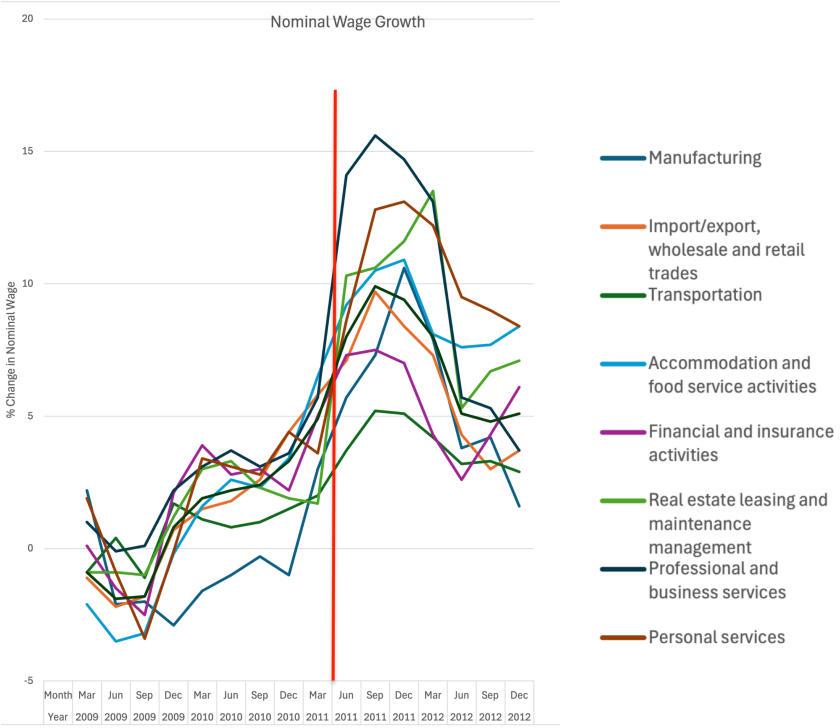
Hence, it is essential for the Minimum Wage Commission to decide a reasonable target that does not pose an aggressive minimum wage to keep the employment rate as high. A balance between wage growth and the employment rate is important, such that the quality of living and job security can be ensured.

6.2.2. Age-Based Analysis

It seems implementation of the SMW itself does not result in the change of the overall society employment, similar to industry-based analysis that imposition of SMW has no change in the selected industries. Additionally, the insignificant interaction term indicates that companies do not have an age preference after the SMW.

A report by Consumer Search Hong Kong Limited (2016) has revealed interview scripts that recruiters, for instance, cleaning industry or the catering industry, prefer younger workers. However, they believed that the enforcement of SMW increases the bargaining power of workers. Therefore, young people tend to find good industry prospects instead of staying in low-paid or low-skilled sectors. It is reasonable to suggest that the SMW increases the overall wage of workers in all industries. From **Figure 2**, for all industries after Mar / Jun, 2011, their wage growth mushroomed, probably due to the SMW. Hence, it could be possible, as claimed by business owners, that young people do have greater bargaining power.

Figure 1: Nominal Wage Growth in different Industries in 2009-2012



Note. Adapted from *Table 220-19001: Nominal Wage Indices for employees up to supervisory level by industry section (September 1992 = 100)*, by Census and Statistics Department, 2025b, Hong Kong. Copyright 2021 by the Census and Statistics Department.

This simplifies to some employers may have age preference as they tend to believe younger workers have greater productivity and efficiency. However, due to the nature of industries/work, they have no choice but to recruit older workers. This explains the result that older workers are not affected by the SMW in terms of employment rate from the regression.

6.3. Labour Force Participation Rate Analysis

The lack of a differential LFPR decrease for the low-wage workers suggests that, referring back to Table 10, taking the 2013 security guard as an example, their average wage is $2,983 higher than the SMW's protected wage, so it could be one of the possible reasons for no discouraged worker effect. The SMW is so low that companies' financial burden is not immensely increased due to the SMW.

6.4. Other Impacts: Working Hours and Welfare

Though job opportunities and working hours are not reduced by the SMW, the net welfare gains for many workers were significantly undermined, with higher hourly pay often coming at the cost of lost benefits. The findings on reductions in paid rest days and meal breaks highlight a key limitation of the SMW: while base wages increased, overall working conditions may have stagnated or worsened for some vulnerable workers.

7. Recommendations

Building upon our empirical findings and informed by international best practices, the SMW has contributed to nominal wage growth and shown no negative impact on employment or age-based hiring. However, it has not significantly narrowed the income gap and has led to certain welfare losses for workers. Therefore, to better achieve the policy's intended goals, we propose the following policy improvements:

7.1. Link Minimum Wage Adjustments to CSSA

To effectively address income inequality, Hong Kong should consider indexing its minimum wage to align closely with the Comprehensive Social Security Assistance (CSSA) payment level. This linkage would help ensure that the minimum wage preserves the purchasing power of low-income workers and encourages the poor to enter the labour market and lower reliance on assistance payments. By tying minimum wage adjustments to a dynamic economic benchmark like the CSSA, wage policies can become more systematic, responsive to changing economic conditions, and sustainable over time, thereby promoting fairness in income distribution. Additionally, the government can have a smaller financial burden.

Table 12: Full-time Minimum Wage vs. CSSA Welfare Payments by Household Size (2025)

Household Size	Estimated CSSA Payment (HK$/month)	Full-time Min. Wage Income (HK$/month)
2 persons	HK$9,499	HK$8,757 ($42.10/hr × 208 hrs)
3 persons	HK$12,356	HK$8,757
4 persons	HK$14,552	HK$8,757

Table 12 clearly shows that the current full-time minimum wage remains below the estimated CSSA levels for all household sizes (Hong Kong Government, 2025; Social Welfare Department, 2025). Therefore, we recommend that the government consider adjusting the statutory minimum wage to better align with the CSSA benchmark. Setting the minimum wage closer to the CSSA level would help ensure that full-time workers can meet their basic living needs without relying on welfare support, thereby reducing income inequality and promoting greater economic self-sufficiency.

7.2. Regulations on Breaks and Welfare

There are no specific regulations on workers' meals and other breaks in Hong Kong. Recognising that employees' welfare can be significantly affected by reductions in rest days and meal breaks, it is recommended that the government take measures to strengthen labour regulations by explicitly including provisions for meal breaks within employment laws. Such legal requirements would ensure that all workers are entitled to sufficient time for meals

during their working hours, preventing employers from neglecting this basic welfare need. Additionally, the government could consider providing supplementary monetary assistance to employers who exceed these welfare standards, to encourage the culture of protecting workers' welfare.

8. Conclusion

This study assessed the impact of the Statutory Minimum Wage (SMW) on income inequality, employment, and demographic bias in Hong Kong between 2010 and 2013. Using difference-in-differences regression models, we found that while the SMW led to nominal wage growth across both high- and low-income groups, it did not disproportionately benefit the latter, failing to significantly reduce the income gap. Meanwhile,

Although the SMW provided a basic wage floor to protect vulnerable workers, it was not set at a level sufficient to influence broader market wages or meaningfully combat wage inequality. As such, we recommend enhancing the SMW policy through annual reviews, indexing it to CSSA, and regulating employers on workers' welfare needs. These reforms can make Hong Kong's minimum wage system more effective, equitable, and responsive to real-world conditions.

(Words: 3983)

Reference

Census and Statistics Department. (2025a). *Table 210-06401 : Unemployed persons and unemployment rate by age and sex*. https://www.censtatd.gov.hk/en/web_table.html?id=210-06401#

Census and Statistics Department. (2025b). *Table 220-19001: Nominal Wage Indices for employees up to supervisory level by industry section (September 1992 = 100)*. https://www.censtatd.gov.hk/en/web_table.html?id=220-19001

Census and Statistics Department. (n.d.). *Underemployed persons by hours of work of all employment and sex*. https://www.censtatd.gov.hk/en/web_table.html?id=210-06506

Census and Statistics Department. (2010 – 2013). *Quarterly Report of Wage and Payroll Statistics*. https://www.censtatd.gov.hk/en/EIndexbySubject.html?scode=210&pcode=B1050009

Consumer Search Hong Kong Limited. (2016). *Exploratory Study on Age Discrimination in Employment*. https://www.eoc.org.hk/eoc/upload/ResearchReport/2016161633111925251.pdf

Eurofound. (2024). *Minimum wages 2024 – The tide is turning*. Retrieved from https://www.eurofound.europa.eu/en/resources/article/2024/minimum-wages-2024-tide-turning

Eurofound. (2024). *Minimum wages for low-paid workers in collective agreements*. Publications Office of the European Union. Retrieved from https://www.eurofound.europa.eu/en/publications/2024/minimum-wages-low-paid-workers-collective-agreements

Frey, C. B., & Osborne, M. A. (2016). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, *114*, 254–280. https://doi.org/10.1016/j.techfore.2016.08.019

Hong Kong Government. (2025, February 18). Chief Executive in Council adopts recommendation on Statutory Minimum Wage rate. https://www.info.gov.hk/gia/general/202502/18/P2025021800208.htm

Hong Kong SAR Government (2012). *2011 Economic Background and 2012 Prospects* (Chapter 6). Economic Analysis and Business Facilitation Unit. https://www.hkeconomy.gov.hk/en/pdf/er_11q4_ch6.pdf

Hong Kong SAR Government (2013). *2012 Economic Background and 2013 Prospects* (Chapter 6). Economic Analysis and Business Facilitation Unit. https://www.hkeconomy.gov.hk/en/pdf/er_12q4_ch6.pdf

Labour Department. (2006, January). *Practical Guidelines For Employers On Eliminating Age Discrimination in Employment*. https://www.labour.gov.hk/eng/plan/pdf/eade/Employers/PracticalGuidelines.pdf

Lau, Y., & Chan, J. L. C. M. a. Y. (2006). Labor force participation of married women in Hong Kong: a feminist perspective. *Journal of Comparative Family Studies*, *37*(1), 93–112. https://www.jstor.org/stable/41604057

Legislative Council of the Hong Kong Special Administrative Region - Minimum wage and protection of elementary workers. (n.d.). https://www.legco.gov.hk/research-publications/english/essentials-1415ise17-minimum-wage-and-protection-of-elementary-workers.htm

Low Pay Commission. (2024). *Low Pay Commission summary of evidence 2024*. Retrieved from

https://www.gov.uk/government/publications/minimum-wage-rates-for-2025/low-pay-commission-summary-of-evidence-2024

Low Pay Commission. (2024). *National Minimum Wage and National Living Wage: Low Pay Commission Remit 2024*. Retrieved from https://www.gov.uk/government/publications/national-minimum-wage-and-national-living-wage-low-pay-commission-remit-2024

Low Pay Commission. (2025). *Low Pay Commission Report 2024*. Retrieved from https://www.gov.uk/government/publications/low-pay-commission-report-2024

Minimum wage commission - Publications & downloadable materials. (n.d.). https://www.mwc.org.hk/en/downloadable_materials/index.html

Ministry of Justice, Japan. (n.d.). *Employment Measures Act - English - Japanese Law translation*. Retrieved April 17, 2025, from https://www.japaneselawtranslation.go.jp/en/laws/view/2227/en

Oxfam Hong Kong. (2012). *Before and After the Statutory Minimum Wage Ordinance in Hong Kong: Survey Findings*. Legislative Council Paper No. CB(2)1960/11-12(02). Retrieved from https://www.legco.gov.hk/yr11-12/english/panels/mp/papers/mp0529cb2-1960-2-e.pdf

Oxfam Hong Kong. (2012). *Reviewing the minimum wage with reference to CSSA and poverty lines*. https://www.oxfam.org.hk/tc/f/news_and_publication/1399/content_12254en.pdf

Social Welfare Department. (2025, January 27). Adjustment of CSSA Standard Rates (1 February 2025). https://www.info.gov.hk/gia/general/202501/27/P2025012400493.htm

Spoelma, T. M., & Marchiondo, L. A. (2024). A shield against ageism: Self‐affirmation mitigates the negative effects of workplace age discrimination on well‐being and

performance. *Journal of Organizational Behavior*, *45*(8), 1147–1169. https://doi.org/10.1002/job.2823

Trusaic. (2024). *Germany Pay Transparency Reporting Law Guide*. Retrieved from https://trusaic.com/resources/global-pay-transparency-center/germany/

Wong, H. (2012, September). 在職貧窮與最低工資 [Slide show]. https://web.swk.cuhk.edu.hk/~hwong/pubfile/presentation/20120922_FLU_working%20poor_and_minimum_wage.pdf

World Bank Group. (n.d.). *Hong Kong SAR, China*. World Bank Gender Data Portal. Retrieved April 16, 2025, from https://genderdata.worldbank.org/en/economies/hong-kong-sar-china#:~:text=In%20Hong%20Kong%20SAR%2C%20China%2C%20the%20labor%20force%20participation%20rate,labor%20force%20participation%20has%20increased.

Appendix
Regression Models

Appendix A Wage Growth Model

A.1. Explanation of variables

- $NominalWageGrowth_{it}$ represent the percentage wage growth for an individual i in the year t.
- $Post_t$ is a binary indicator (0 = before SMW; 2010–2011, 1 = after SMW; 2012–2013).
- $Treated_i$ is a binary variable (0 = control group; workers unaffected by SMW, specifically those in the **financial and insurance** sectors; 1 = treatment group; workers affected by SMW, specifically **security guards or cleaners** in low-wage sectors).
- $Post_t \times Treated_i$ is the DiD interaction term, indicating the effect of the minimum wage specifically on the treated group in the post-implementation period.
- $Gender_i$ is a binary variable indicating the gender of worker i (0 = female, 1 = male).
- $GDPGrowth_{t-1}$ is the real Gross Domestic Product (GDP) growth rate (%) in the year $t-1$, controlling for overall economic conditions,
- CPI_{t-1} is the Consumer Price Index in that year $t-1$, included here to account for general price-level changes within the economy.
- ϵ_{it} is the Error term, capturing unobserved factors affecting nominal wage growth.

A.2. Explanation of Coefficients:

- β_1 measures general time-related wage growth affecting **only the control group** (cleaning workers/security guards), capturing economic conditions common to the control group **after** SMW implementation.
- β_2 measures the initial (baseline) wage growth difference between treatment and control groups prior to SMW implementation, indicating inherent wage growth differences unrelated to policy effects.
- β_3 is the primary DiD estimator, directly indicating the post-SMW policy impact on nominal wage growth for the treatment group **relative to** the control group. This coefficient tests the hypothesis that the SMW affects wages for low-income workers.
- β_4 represents gender-related wage growth differences, capturing whether males or females experience systematically different nominal wage growth.
- β_5 controls for broader economic growth impacts, indicating how macroeconomic performance (GDP growth) influences individual wage growth.
- β_6 indicates how inflation (CPI) impacts nominal wage growth, serving as an essential control to separate nominal changes from real purchasing power improvements.

Table A.1. Nominal Wage Growth Model (Cleaner):

OLS Regression Results

Dep. Variable:	WAGEGROWTH	R-squared:	0.049
Model:	OLS	Adj. R-squared:	-0.058
Method:	Least Squares	F-statistic:	0.6165
Date:	Tue, 27 May 2025	Prob (F-statistic):	0.716
Time:	11:47:07	Log-Likelihood:	-201.45
No. Observations:	60	AIC:	416.9
Df Residuals:	53	BIC:	431.6
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	-8.3389	7.355	-1.134	0.257	-22.754	6.076
POST	4.4464	3.676	1.209	0.226	-2.759	11.652
TREAT	2.4850	1.706	1.456	0.145	-0.859	5.829
Post_Treated	-1.4500	3.846	-0.377	0.706	-8.988	6.088
GENDER	0.0117	2.003	0.006	0.995	-3.915	3.938
CPI_lag	0.6435	0.590	1.090	0.276	-0.513	1.800
GDP_lag	1.2326	0.994	1.239	0.215	-0.716	3.182

Omnibus:	19.439	Durbin-Watson:	2.071
Prob(Omnibus):	0.000	Jarque-Bera (JB):	109.232
Skew:	0.402	Prob(JB):	1.91e-24
Kurtosis:	9.561	Cond. No.	45.6

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)

Table A.2. Nominal Wage Growth Model (Security Guard):

OLS Regression Results

Dep. Variable:	WAGEGROWTH	R-squared:	0.157
Model:	OLS	Adj. R-squared:	0.062
Method:	Least Squares	F-statistic:	3.543
Date:	Tue, 27 May 2025	Prob (F-statistic):	0.00505
Time:	11:47:07	Log-Likelihood:	-150.76
No. Observations:	60	AIC:	315.5
Df Residuals:	53	BIC:	330.2
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	-5.4905	3.848	-1.427	0.154	-13.033	2.052
POST	4.0568	2.196	1.847	0.065	-0.247	8.361
TREAT	1.7893	1.515	1.181	0.238	-1.180	4.759
Post_Treated	-0.6418	1.797	-0.357	0.721	-4.164	2.881
GENDER	-0.0643	0.875	-0.074	0.941	-1.779	1.651
CPI_lag	0.0326	0.303	0.108	0.914	-0.561	0.626
GDP_lag	0.9571	0.535	1.789	0.074	-0.091	2.006

Omnibus:	19.809	Durbin-Watson:	1.793
Prob(Omnibus):	0.000	Jarque-Bera (JB):	26.141
Skew:	1.307	Prob(JB):	2.11e-06
Kurtosis:	4.902	Cond. No.	45.6

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)

Appendix B Employment Rate Model (Industry-Based)

B.1. Explanation of variables

- $EmploymentRate_t$ Represent the Employment Rate in a year t.
- $Post_t$ is a binary indicator (0 = before SMW; 2010–2011, 1 = after SMW; 2012–2013).
- $Treated_i$ is a binary variable (0 = control group; workers unaffected by SMW, specifically those in the **financial and insurance** sectors; 1 = treatment group; workers affected by SMW, specifically **security guards and cleaners** in low-wage sectors).
- $Post_t \times Treated_i$ is the DiD interaction term, indicating the effect of the minimum wage specifically on the treated group in the post-implementation period.
- $Gender_i$ is a binary variable indicating the gender of worker i (0 = female, 1 = male).
- $GDPGrowth_{t-1}$ is the real Gross Domestic Product (GDP) growth rate (%) in the year t, controlling for overall economic conditions,
- CPI_{t-1} is the Consumer Price Index in that year t, included here to account for general price-level changes within the economy.
- ϵ_{it} is the Error term, capturing unobserved factors affecting nominal wage growth.

B.2. Explanation of Coefficients:

- β_1 measures general time-related employment rate affecting **only the control group** (cleaning workers / security guards), capturing economic conditions common to the control group **after** SMW implementation.
- β_2 measures the initial (baseline) employment rate difference between treatment and control groups prior to SMW implementation, indicating inherent employment rate differences unrelated to policy effects.
- β_3 is the primary DiD estimator, directly indicating the **post-SMW** policy impact on employment rate for the treatment group **relative to** the control group. This coefficient tests the hypothesis that the SMW affects employment rate for low-income workers.
- β_4 represents gender-related employment rate differences, capturing whether males or females experience systematically different employment rates.
- β_5 controls for broader economic growth impacts, indicating how macroeconomic performance (GDP growth) influences employment rate.
- β_6 indicates how inflation (CPI) impacts employment rate, serving as an essential control to separate nominal changes from real purchasing power improvements.

Table B.1. Employment Rate Model (Industry-Based):

OLS Regression Results

Dep. Variable:	EMPLOYMENT	R-squared:	0.806
Model:	OLS	Adj. R-squared:	0.792
Method:	Least Squares	F-statistic:	54.73
Date:	Tue, 27 May 2025	Prob (F-statistic):	8.41e-27
Time:	11:47:07	Log-Likelihood:	-26.025
No. Observations:	90	AIC:	66.05
Df Residuals:	83	BIC:	83.55
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	97.2596	0.286	340.658	0.000	96.700	97.819
POST	-0.0443	0.169	-0.262	0.793	-0.376	0.288
TREAT	2.081e-14	0.136	1.52e-13	1.000	-0.267	0.267
Post_Treated	1.954e-14	0.163	1.2e-13	1.000	-0.319	0.319
GENDER	-1.1333	0.074	-15.366	0.000	-1.278	-0.989
CPI_lag	0.0990	0.018	5.446	0.000	0.063	0.135
GDP_lag	-0.0993	0.041	-2.450	0.014	-0.179	-0.020

Omnibus:	4.816	Durbin-Watson:	0.379
Prob(Omnibus):	0.090	Jarque-Bera (JB):	4.189
Skew:	-0.409	Prob(JB):	0.123
Kurtosis:	3.669	Cond. No.	47.6

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)

Appendix C Employment Rate Model (Age-based)

C.1. Explanation of variables

- $EmploymentRate_t$ Represent the Employment Rate in a year t.
- $Post_t$ is a binary indicator (0 = before SMW; 2010–2011, 1 = after SMW; 2012–2013).
- $Treated_i$ is a binary variable (0 = control group; Workers aged 25-34 [Youth], 35-44 [Middle-aged] or 45-59 [Senior]; 1 = treatment group; Workers aged 60 or above).
- $Post_t \times Treated_i$ is the DiD interaction term, indicating the effect of the minimum wage specifically on the treated group in the post-implementation period.
- $Gender_i$ is a binary variable indicating the gender of worker i (0 = female, 1 = male).
- $GDPGrowth_{t-1}$ is the real Gross Domestic Product (GDP) growth rate (%) in the year t, controlling for overall economic conditions,
- CPI_{t-1} is the Consumer Price Index in that year t, included here to account for general price-level changes within the economy.
- ϵ_{it} is the Error term, capturing unobserved factors affecting nominal wage growth.

C.2. Explanation of Coefficients:

- β_1 measures general time-related employment rate affecting **only the control group** (Youth / Middle-aged / Senior), capturing economic conditions common to the control group **after** SMW implementation.
- β_2 measures the initial (baseline) employment rate difference between treatment and control groups prior to SMW implementation, indicating inherent employment rate differences unrelated to policy effects.
- β_3 is the primary DiD estimator, directly indicating the **post-SMW** policy impact on employment rate for the treatment group **relative to** the control group. This coefficient tests the hypothesis that the SMW affects the employment rateofo elderly workers.
- β_4 represents gender-related employment rate differences, capturing whether males or females experience systematically different employment rates.
- β_5 controls for broader economic growth impacts, indicating how macroeconomic performance (GDP growth) influences employment rate.
- β_6 indicates how inflation (CPI) impacts employment rate, serving as an essential control to separate nominal changes from real purchasing power improvements.

Table C.1. Employment DiD Model (Youth 25-34 vs. Older 60+):

OLS Regression Results

Dep. Variable:	EMPLOYMENT	R-squared:	0.423
Model:	OLS	Adj. R-squared:	0.392
Method:	Least Squares	F-statistic:	10.52
Date:	Tue, 27 May 2025	Prob (F-statistic):	3.06e-09
Time:	11:47:07	Log-Likelihood:	-177.70
No. Observations:	119	AIC:	369.4
Df Residuals:	112	BIC:	388.8
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	97.0556	0.778	124.694	0.000	95.530	98.581
POST	-0.2454	0.443	-0.553	0.580	-1.115	0.624
TREAT	1.1956	0.248	4.818	0.000	0.709	1.682
Post_Treated	0.2381	0.409	0.583	0.560	-0.563	1.039
GENDER	-1.2285	0.210	-5.856	0.000	-1.640	-0.817
CPI_lag	0.1102	0.067	1.639	0.101	-0.022	0.242
GDP_lag	0.0076	0.113	0.067	0.946	-0.214	0.229

Omnibus:	52.074	Durbin-Watson:	1.876
Prob(Omnibus):	0.000	Jarque-Bera (JB):	174.005
Skew:	-1.569	Prob(JB):	1.64e-38
Kurtosis:	8.024	Cond. No.	45.3

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)

Table C.2. Employment DiD Model (Middle Age 35-44 vs. Older 60+):

OLS Regression Results

Dep. Variable:	EMPLOYMENT	R-squared:	0.319
Model:	OLS	Adj. R-squared:	0.283
Method:	Least Squares	F-statistic:	9.812
Date:	Tue, 27 May 2025	Prob (F-statistic):	1.12e-08
Time:	11:47:07	Log-Likelihood:	-150.12
No. Observations:	119	AIC:	314.2
Df Residuals:	112	BIC:	333.7
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	97.1540	0.593	163.776	0.000	95.991	98.317
POST	-0.1083	0.331	-0.327	0.743	-0.757	0.540
TREAT	0.7122	0.178	4.005	0.000	0.364	1.061
Post_Treated	0.2434	0.321	0.758	0.448	-0.386	0.872
GENDER	-0.7579	0.166	-4.565	0.000	-1.083	-0.432
CPI_lag	0.0886	0.051	1.746	0.081	-0.011	0.188
GDP_lag	0.0364	0.089	0.411	0.681	-0.137	0.210

Omnibus:	57.853	Durbin-Watson:	1.769
Prob(Omnibus):	0.000	Jarque-Bera (JB):	182.866
Skew:	-1.814	Prob(JB):	1.96e-40
Kurtosis:	7.870	Cond. No.	45.3

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)

Table C.3. Employment DiD Model (Senior 45-59 vs. Older 60+):

OLS Regression Results

Dep. Variable:	EMPLOYMENT	R-squared:	0.469
Model:	OLS	Adj. R-squared:	0.447
Method:	Least Squares	F-statistic:	20.23
Date:	Tue, 27 May 2025	Prob (F-statistic):	5.16e-17
Time:	11:47:08	Log-Likelihood:	-207.08
No. Observations:	149	AIC:	428.2
Df Residuals:	142	BIC:	449.2
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	97.2386	0.597	162.937	0.000	96.069	98.408
POST	-0.4596	0.314	-1.462	0.144	-1.076	0.157
TREAT	1.1541	0.203	5.696	0.000	0.757	1.551
Post_Treated	0.3108	0.317	0.980	0.327	-0.311	0.932
GENDER	-1.1891	0.167	-7.134	0.000	-1.516	-0.862
CPI_lag	0.1299	0.048	2.684	0.007	0.035	0.225
GDP_lag	-0.0240	0.091	-0.264	0.792	-0.202	0.154

Omnibus:	51.893	Durbin-Watson:	1.346
Prob(Omnibus):	0.000	Jarque-Bera (JB):	125.629
Skew:	-1.458	Prob(JB):	5.25e-28
Kurtosis:	6.426	Cond. No.	44.7

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)

Appendix D: Labour Force Participation Rate Model

D.1. Explanation of variables

- $LFPR_t$ is the Labour Force Participation Rate in year t, included to control for changes in the proportion of the working-age population that is either employed or actively seeking employment.
- $EmploymentRate_t$ Represent the Employment Rate in a year t.
- $Post_t$ is a binary indicator (0 = before SMW; 2010–2011, 1 = after SMW; 2012–2013).
- $Treated_i$ is a binary variable (0 = control group; workers unaffected by SMW, specifically those in the **financial and insurance** sectors; 1 = treatment group; workers affected by SMW, specifically **security guards and cleaners** in low-wage sectors).
- $Post_t \times Treated_i$ is the DiD interaction term, indicating the effect of the minimum wage specifically on the treated group in the post-implementation period.
- $Gender_i$ is a binary variable indicating the gender of worker i (0 = female, 1 = male).
- $GDPGrowth_{t-1}$ is the real Gross Domestic Product (GDP) growth rate (%) in the year t, controlling for overall economic conditions,
- CPI_{t-1} is the Consumer Price Index in that year t, included here to account for general price-level changes within the economy.
- ϵ_{it} is the Error term, capturing unobserved factors affecting nominal wage growth.

D.2. Explanation of Coefficients:

- β_1 measures the general time-related labour force participation rate affecting **only the control group** (cleaning workers/security guards), capturing economic conditions common to the control group **after** SMW implementation.
- β_2 measures the initial (baseline) labour force participation rate difference between treatment and control groups before SMW implementation, indicating inherent LFPR differences unrelated to policy effects.
- β_3 is the primary DiD estimator, directly indicating the SMW policy impact on labour force participation rate for the treatment group **relative to** the control group. This coefficient tests the hypothesis that the SMW affects the labour force participation rate for low-income workers.
- β_4 represents gender-related labour force participation rate differences, capturing whether males or females experience systematically different labour force participation rates.
- β_5 controls for broader economic growth impacts, indicating how macroeconomic performance (GDP growth) influences the labour force participation rate.
- β_6 indicates how inflation (CPI) impacts labour force participation rate, serving as an essential control to separate nominal changes from real purchasing power improvements.

Table D.1. Labour Force Participation Rate Model (Industry-Based)

OLS Regression Results

Dep. Variable:	LFPR	R-squared:	0.998
Model:	OLS	Adj. R-squared:	0.998
Method:	Least Squares	F-statistic:	6763.
Date:	Tue, 27 May 2025	Prob (F-statistic):	2.11e-109
Time:	11:47:08	Log-Likelihood:	-53.296
No. Observations:	90	AIC:	120.6
Df Residuals:	83	BIC:	138.1
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	48.2480	0.386	124.849	0.000	47.491	49.005
POST	1.1540	0.257	4.493	0.000	0.651	1.657
TREAT	8.743e-15	0.157	5.57e-14	1.000	-0.308	0.308
Post_Treated	1.288e-14	0.216	5.96e-14	1.000	-0.423	0.423
GENDER	19.2600	0.100	191.834	0.000	19.063	19.457
CPI_lag	0.0473	0.042	1.135	0.256	-0.034	0.129
GDP_lag	0.0884	0.047	1.885	0.059	-0.004	0.180

Omnibus:	43.464	Durbin-Watson:	0.570
Prob(Omnibus):	0.000	Jarque-Bera (JB):	6.285
Skew:	-0.066	Prob(JB):	0.0432
Kurtosis:	1.712	Cond. No.	47.6

Notes:
[1] Standard Errors are heteroscedasticity robust (HC3)