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Nationalizing the minimum wage: Can the Philippines take the toll?

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The Philippines' minimum wage debate has intensified following the 2025 passage of House Bill (HB) 11376, which marked the first legislated wage increase in 36 years after the original HB 7787 proposal stalled. While regional wage boards have struggled to keep pace with the economic disruptions associated with the Tax Reform for Acceleration and Inclusion (TRAIN) law and the Coronavirus disease 2019 (COVID-19), labor groups continue to advocate for national standardization. This study employs a regional wage partial computable general equilibrium (CGE) model to evaluate four national minimum wage scenarios. Implementing the proposed ₱750 daily wage without productivity adjustments yields severe economic contraction, with real GDP declining 8.31 percent. Furthermore, formal sector employment is projected to fall 37 to 64 percent across regions, leading to displacement of 44,701 to 101,824 workers to informal markets. Even with 20 percent productivity gains, real GDP still contracts 4.96 percent. Regional inflation varies dramatically from -2.98 percent in NCR to 13.07 percent in ARMM, with services sector producer prices increasing up to 88.5 percent. Despite these wage increases, poverty reduction remains minimal at 0.3 to 0.5 percent, while real incomes for informal workers decline 14 to 31 percent due to the labor influx. Only the moderate scenario, which aligns wages to NCR levels (₱515) with ten percent productivity gains, limits GDP decline to 1.46 percent. The simulations confirm theoretical predictions that downward wage rigidity creates substantial formal-informal labor reallocation. Results strongly caution against dramatic uniform wage increases without corresponding productivity enhancements and suggest the need for gradual, regionally differentiated adjustments coupled with complementary policies to formalize employment and boost productivity.

JEL classification: J38, J62, J23
Keywords: partial computable general equilibrium, national minimum wage, poverty effects, regional wage modelling

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1. Introduction and review of literature

The minimum wage remains one of the most contentious labor market policies in the Philippines, with debates intensifying amid post-pandemic inflation and growing inequality. While basic labor economics traditionally characterizes minimum wages as creating market inefficiencies through surplus labor and unemployment [Neumark and Wascher 2007], recent evidence suggests more nuanced effects depending on market structure, institutional design, and complementary policies (Dube [2019]; Manning [2021]). The trade-off between ensuring living standards and maintaining employment has become increasingly complex as global economic disruptions reshape labor markets.

The Philippine minimum wage debate reached a critical juncture with House Bill (HB) No. 7787, filed by the Makabayan Bloc in May 2018, which proposed a ₱750 daily national minimum wage and the abolition of the regional wage board system [Cepeda 2018]. Though this specific bill stalled, similar legislative efforts culminated in the historic passage of HB 11376 in June 2025, authorizing a ₱200 across-the-board increase—the first legislated minimum wage adjustment in 36 years [Flores 2025]. This legislative action emerged from widespread dissatisfaction with the regional wage boards' inability to keep pace with inflation, particularly following the regressive impacts of the Tax Reform for Acceleration and Inclusion (TRAIN) law.

Although HB 7787 pertained to the 17th Congress and proposed a uniform ₱750 floor, the concept of a nationwide minimum wage has been re-filed in later Congresses in new forms (e.g., proposals for ₱1,200 or alternative implementation designs in 2025). These later proposals are distinct measures, not continuations of HB 7787. Accordingly, the present analysis remains scoped to HB 7787's policy architecture; references to later proposals serve only to situate the ongoing debate and do not alter the modeling of the 2012-calibrated counterfactual examined in this paper.

The existing framework under Republic Act No. 6727, the Wage Rationalization Act, establishes Regional Tripartite Wages and Productivity Boards (RTWPBs) that determine wages based on poverty levels, cost of living, and employment conditions in each region. This decentralized approach has produced substantial wage disparities, with daily minimum wages ranging from ₱361 in Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) to ₱695 in the National Capital Region (NCR) as of 2025 [Philippine News Agency 2024]. Critics argue this system has failed to provide living wages, with IBON Foundation estimating that NCR workers require ₱1,221 daily for a family of five—leaving a ₱576 gap even after recent adjustments [Cruz 2023].

Both classic and recent evidence suggest that the degree of coordination in wage setting often matters more than whether bargaining is formally centralized or decentralized. Calmfors & Driffill [1988] predict a U-shaped relationship, where highly centralized or highly decentralized systems yield better macro economic outcomes than hybrid arrangements. Newer Organisation for Economic Co-operation and Development (OECD) or International Labour Organization (ILO) research [2023] refines this view, emphasizing the value of coordinated frameworks with built-in flexibility (e.g., sectoral or national frameworks or productivity clauses) to allow economies to balance wage moderation with equity and micro-level adjustment. In contexts with wide regional variation in prices and productivity, such as the Philippines, this points toward a national wage floor to support equity and poverty protection, complemented by sectoral or firm-level bargaining (or wage orders) that can calibrate pay to local productivity and demand conditions.

International experience with national minimum wage systems provides valuable lessons for Philippine policy makers. Germany's 2015 transition from sectoral bargaining to a national minimum wage demonstrated that unified systems can achieve wage convergence with minimal employment losses, contradicting traditional economic predictions (Caliendo et al. [2018]; Bossler and Gerner [2019]). Similarly, recent evidence from the United States shows employment elasticities near zero in concentrated labor markets, suggesting minimum wage effects depend critically on market structure [Azar et al. 2024]. However, developing country contexts present unique challenges, as Fields [2019] notes that large informal sectors can limit policy effectiveness and create unintended spillover effects.

The proposed nationalization of minimum wages in the Philippines marks a significant departure from the country's longstanding regional approach and would place it among a relatively small group of countries with fully uniform national wage floors. Internationally, a wide spectrum of minimum wage architectures are evident, from highly centralized national systems to strongly decentralized regional models. The United Kingdom, for example, adopted a national minimum wage in 1999, replacing the previous sector-based Wages Councils, while still maintaining age-specific differentials and recently introducing higher London-specific rates [Low Pay Commission 2023]. The United States presents a hybrid system where a federal minimum wage floor of $7.25/hour (unchanged since 2009) coexists with state and municipal minimum wages, resulting in substantial geographic variation—from the federal minimum in some Southern states to over $15/hour in cities like Seattle and San Francisco [Neumark 2019]. Canada also relies on provincial minimum wages which ranged from C$ 13.00 to C$ 16.77 in 2024, recognizing significant cost-of-living differences across provinces. China operates a tiered structure with minimum wages varying across provinces and even within provinces by urban-rural classification, explicitly acknowledging regional economic disparities [Jia and Zhang 2013]. Large developing economies with substantial informal sectors likewise tend to adopt decentralized systems: India maintains state-level and occupation-specific minimum wages, while Indonesia's district-level system (*kabupaten/kota*) generates hundreds of different minimum wage rates.

Against this backdrop, the Philippines' proposal for a uniform ₱750 national minimum wage is unusual. Even countries with "national" wage floors typically incorporate regional, sectoral, or demographic variation to account for cost-of-living and productivity differences. The Philippines' current system of regional wage boards aligns more closely with decentralized frameworks of the United States, Canada, and China, where wage-setting institutions adjust to local economic conditions.

The Coronavirus disease 2019 (COVID-19) pandemic and subsequent inflationary surges have fundamentally altered minimum wage dynamics globally. According to the ILO, real minimum wages declined by 2.2 percent to 44.7 percent across Asia-Pacific countries between 2020 and 2022, as inflation outpaced nominal adjustments [ILO 2023]. The Philippines experienced similar challenges, with peak inflation reaching 8.7 percent in January 2023, eroding purchasing power despite nominal wage increases [Asian Development Bank 2023]. These disruptions underscore the limitations of traditional adjustment mechanisms and the need for more responsive institutional frameworks.

Recent methodological advances have substantially improved our understanding of minimum wage effects. Meta-analyses of 588 studies find consistent employment elasticities of -0.1 to -0.3, with 90 percent of comprehensive studies finding minimal disemployment effects [Wolfson and Belman 2019]. Spatial equilibrium models reveal that worker mobility and regional spillovers significantly affect policy outcomes [Monras 2019], while dynamic computable general equilibrium (CGE) models incorporating efficiency-wage mechanisms indicate potential positive GDP effects of 3.9 to 4.6 percent in middle-income countries [Adam and Buffie 2020]. These advances suggest that carefully designed minimum wage policies can achieve distributional goals with limited efficiency costs. Moreover, numerous studies find that statutory minimum wages tend to raise wages at the bottom with limited aggregate employment losses, while inducing meaningful reallocation across firms and regions. For Germany's 2015 nationwide reform, Dustmann et al. [2022] document sizable wage increases and negligible net employment effects, accompanied by reallocation from smaller/low-pay to larger/higher-pay establishments. Similar patterns—wage gains, inequality compression, and muted employment effects—appear in large developing economies when enforcement is non-trivial: Indonesia [Hohberg & Lay 2015], Brazil [Engbom & Moser 2022], and India where impacts vary with enforcement intensity [Soundararajan 2019]. Collectively, this evidence supports modeling strategies that allow for price pass-through, reallocation, hours adjustments, vacancy dynamics, regional heterogeneity, and imperfect compliance.

Fiscal reforms have also interacted with wage policy debate. The 2018 TRAIN law implementation added complexity to these discussions. Despite the law exempting low-income earners from income tax, increased excise taxes on fuel and other commodities disproportionately affected poor households.

Philippine Institute for Development Studies (PIDS) research estimates that the reform increased poverty incidence by 0.26 percentage points even with cash transfers, contradicting government projections [2019]. This experience underscores the importance of considering minimum wage policy within broader fiscal and social protection frameworks.

Given this evolving context, assessing a potential national minimum wage system for the Philippines requires sophisticated analytical tools capable of capturing inter-market interactions and regional heterogeneity. The regional wage model (RWM) used in this study incorporates labor market segmentation, region-specific productivity and price wedges, formal-informal interactions, and general equilibrium effects to assess policy impacts on production, inflation, poverty, and employment.

The study has four main objectives: (1) estimate the effects of a national minimum wage on production, employment, inflation, and poverty across regions using a partial CGE framework; (2) analyze labor market adjustments between formal and informal sectors under alternative productivity scenarios; (3) evaluate distributional impacts through poverty microsimulations using Family Income and Expenditure Survey (FIES) 2012 data; and (4) propose evidence-based policy designs that balance wage adequacy with employment sustainability in the Philippines.

The remainder of the paper is organized as follows. Section 2 outlines the (RWM), including its consumption framework, production structure, and labor market dynamics under minimum wage constraints. The model features downward wage rigidity in formal markets and endogenous labor flows to the informal sector. Section 3 presents four policy simulations: (1) implementing HB 7787's ₱750 national minimum wage without productivity changes, (2) adding a fixed 20 percent productivity improvement, (3) allowing proportional productivity responses, and (4) applying NCR-level wages nationally with moderate productivity gains. Associated poverty microsimulations assess distributional effects across urban and rural populations. Section 4 concludes with policy recommendations informed by both simulation results and international evidence.

2. Regional wage model

A nationally legislated minimum wage is an economy-wide shock whose incidence propagates through interlinked product and factor markets, regional price–productivity differentials, tax–transfer systems, and firm and household reallocation margins. A CGE model is designed to track these multi-market feedbacks under a consistent macroeconomic closure, covering goods, factors, and government budget, making it well-suited for quantifying distributional incidence, sectoral spillovers, and price effects at national scale.

We treat search-and-matching models as complementary rather than competing tools. Recent heterogeneous-firm and search-based frameworks for Germany show that minimum wages can raise wages and productivity with limited employment losses at moderate "bite" levels, while also inducing meaningful reallocation. These insights help discipline key elasticities and reallocation margins in our CGE calibration (Dustman et al. [2022]; Drechsel-Grau [2023]). In short, CGE provides the economy-wide aggregation while structural/search evidence anchors behavioral responses and heterogeneity.

A CGE model is often the better tool when the goal is to quantify aggregate and distributional effects consistently across input-output linkages, regional price-productivity wedges, price pass-through, household taxes and transfers, and government budget closure. CGE explicitly enforces market-clearing and fiscal consistency, can report sectoral and regional spillovers, and is widely used by policy institutions for exactly this type of whole-economy counterfactual. Alternative models typically excel on narrower margins. For example, search-and-matching models richly micro-found hiring frictions and reallocation but do not natively track multi-market fiscal/price feedbacks, and microsimulations lack general-equilibrium interactions. We also incorporate poverty microsimulations to better understand the impact on the income distribution.

We acknowledge concerns that CGE outcomes can be sensitive to model structure such as wage-curve and labor-demand elasticities, macro-closure rules and assumptions regarding regional wage rigidities. Poorly specified models may mechanically predict job losses [Storm & Isaacs 2016]. Recent studies, therefore, calibrate labor and demand elasticities to reflect ex-post evidence of muted net employment effects alongside reallocation (e.g., Germany 2015), test robustness under alternative closures. and incorporate imperfect compliance and informal-sector margins. Many also cross-validate reallocation implications against search-and-matching results (Dustmann et al. [2022]; Drechsel-Grau [2023]).

This study adopts a regional wage CGE model following the structure of Cororaton et al. [2017], with modifications to better reflect Philippine context. The model features a consumption structure based on a representative household's utility maximization process and a production structure based on regional firms' cost minimization decisions.

The labor market is segmented into the formal sector and the informal sectors with sector-specific wage differentials and downward regional wage rigidities in the formal sector at a regional level. This explicitly allows for labor movement between these two sectors due to changes in the minimum wage, thus enabling wages and employment patterns to adjust both within and across regions. Finally, a poverty microsimulation, using FIES 2012, translates macro- and meso-level shocks, allowing us to compute for household-level distributional and poverty outcomes.

2.1. Consumption framework

We follow a two-stage nested constant elasticity of substitution (CES) structure similar to Cororaton et al. [2017]. The first stage of the utility maximization process is a function of the aggregation of various items in four sectors. The utility function follows CES format for ease of computation, subject to a budget constraint.

$$maxU = \left(\sum_i \alpha_i^{\frac{1}{\sigma_1}} \cdot x_i^{\frac{\sigma_1 - 1}{\sigma_1}} \right)^{\frac{\sigma_1}{\sigma_1 - 1}} \tag{1}$$

$$m = \sum_i CP_i \cdot x_i \ . \tag{2}$$

The equations above suggest that the representative household's utility (which is in the CES form) is subject to some budget or income constraint m. Where x_i represents goods from i (agriculture, manufacturing, non-manufacturing and services), m is the income, CP_i is the consumer price of good x_i and σ_i is the elasticity of substitution in the first stage.

Specifying the utility maximization process using the Lagrange multiplier method, the Lagrange function is:

$$max\ L = \left(\sum_i \alpha_i^{\frac{1}{\sigma_1}} \cdot x_i^{\frac{\sigma_1 - 1}{\sigma_1}} \right)^{\frac{\sigma_1}{\sigma_1 - 1}} + \lambda \left(m - \sum_i CP_i \cdot x_i\right) . \tag{3}$$

The Marshallian demand function for a good i where i is derived using first-order conditions is:

$$x_i^* = m \cdot \frac{\alpha_i CP_i^{-\sigma_1}}{\sum_i \alpha_i CP_i^{1-\sigma_1}} \ . \tag{4}$$

The unit cost (UC) for the remainder of the study is obtained from the utility maximization process (UMP) and the Marshallian demand functions:

$$UC = \sum_i (\alpha_i CP_i^{1-\sigma_1})^{\frac{1}{1-\sigma_1}} \ . \tag{5}$$

In the consumption framework, we further disaggregate each x_i into 17 products, representing the different products in the 17 regions of the country. We assume that there are 17 differentiated types of agricultural products, manufacturing products, non-manufacturing products, and services products, each representing one regional product. That regional product is denoted by $rx_{i,r}$ which represents an i product from a sector belonging to an r region.

The Marshallian demand function for a good $rx_{i,r}$ is:

$$rx_{i,r}^* = \frac{\delta_{i,r} rCP_{i,r}^{-\sigma_2} (CP_i \cdot x_i)}{\sum_r \delta_{i,r} rCP_{i,r}^{1-\sigma_2}} \ , \tag{6}$$

where a $rCP_{i,r}$ is the regional consumer price for a good $rx_{i,r}$ and the second stage elasticity of substitution σ_2, the unit cost, is derived as:

$$CP_i = \sum_i (\delta_{i,r} rCP_{i,r}^{1-\sigma_2})^{\frac{1}{1-\sigma_2}} \quad . \tag{7}$$

2.2. Production framework

The production framework follows a similar two-stage nested CES function based on a cost minimization procedure subject to a projected CES production where the factor inputs are aggregated labor and capital. In the second stage of the two-stage nested CES function, we disaggregate labor into two types, namely, Type 1, which is labor with at least a high school diploma, and Type 2, which is the rest of the employment available. As the model is static, the supply of both labor types is fixed.

In accordance with the regional wage boards, the regional labor market equilibrates the wages for the two types of labor. In a labor market, of course, the interactions between demand and supply would dictate the wage rate. However, as we are dealing with a fixed labor supply, we must still derive the demand for aggregate labor. The demand function for aggregate labor is a downward sloping form and is based on the framework of Decaluwe et al. [2000].

$$ALab_{i,r} = \left(\frac{rgdp_{i,r}}{\beta_{i,r}}\right)\left(\frac{\beta_{i,r}\,\theta_{i,r}\,PP_{i,r}}{AW_{i,r}}\right)^{\epsilon_{1(i,r)}} \tag{8}$$

where the regional gross domestic product is $rgdp_{i,r}$, an exogenous production scale parameter disaggregated per region and sector is $\beta_{i,r}$, the share of aggregate labor per region and sector is $\theta_{i,r}$, the producer price of a regional product is $PP_{i,r}$, the aggregate wage is $AW_{i,r}$, and the elasticity of substitution in the first stage is $\epsilon_{1(i,r)}$.

The demand function for capital ($CAP_{i,r}$) is symmetric to the aggregate labor demand function.

$$Cap_{i,r} = \left(\frac{rgdp_{i,r}}{\beta_{i,r}}\right)\left(\frac{\beta_{i,r}(1-\theta_{i,r})PP_{i,r}}{RK_{i,r}}\right)^{\epsilon_{1(i,r)}} \tag{9}$$

where $RK_{i,r}$ is the rental rate of capital and $Cap_{i,r}$ denotes a capital input in a sector i for a given region r. The producer price or the unit cost may be expressed as a function of the aggregate wage and the rental rate of capital:

$$PP_{i,r} = \left(\frac{1}{\beta_{i,r}}\right)\left[\,\theta_{i,r}^{\epsilon_{1(i,r)}}\,(AW_{i,r})^{1-\epsilon_{1(i,r)}} + (1-\theta_{i,r}^{\epsilon_{1(i,r)}})(RK_{i,r})^{1-\epsilon_{1(i,r)}}\,\right]^{\frac{1}{1-\epsilon_{1(i,r)}}} \quad . \tag{10}$$

In the second stage, labor is delineated into Type 1 laborer (with at least a high school diploma) and the Type 2 labor (the rest of employment). In a typical labor market, each type of labor will have a certain demand based on the prevalent market conditions present. The demand functions for the two labor types are assumed to be symmetric. The demand for Type 1 labor ($Lab_{i,r}^{1}$) is

$$Lab^1_{i,r} = \left(\frac{ALab_{i,r}}{\lambda_{1(r)}\mu_{i,r}}\right)\left[\frac{\lambda_{1(r)}\mu_{i,r}AW_{i,r}\gamma_{i,r}}{w^1_r}\right]^{\epsilon_{2(i,r)}}, \tag{11}$$

The demand for Type 2 labor ($Lab^2_{i,r}$) is

$$Lab^2_{i,r} = \left(\frac{ALab_{i,r}}{\lambda_{2(r)}\mu_{i,r}}\right)\left[\frac{\lambda_{2(r)}\mu_{i,r}AW_{i,r}(1-\gamma_{i,r})}{w^2_r}\right]^{\epsilon_{2(i,r)}}, \tag{12}$$

where w^1_r and w^2_r denote regional wage rates for Type 1 and Type 2 laborers, respectively. Note that regional wages are determined formally by regional wage boards that base their decisions on specific economic indicators. The model also incorporates the labor-efficiency parameters $\lambda_{1(r)}$ and $\lambda_{2(r)}$ for Type 1 and a Type 2 workers along with $\epsilon_{2(i,r)}$, the elasticity of substitution in the second stage of the nested CES structure. As established by Annabi et al. [2006], this is a central focus on minimum wage CGE or partial CGE simulations.

In theory, increases in the minimum wage raise worker compensation and can bolster higher levels of productivity. In many aspects, the increase in the productivity may lead to higher returns and offset the negative returns or effects of the minimum wage increase which have been known to decrease employment.

The labor demand functions specified in Equations (8), (11), and (12) incorporate a structural inverse relationship between wages and labor demand, which warrants brief discussion given recent empirical debates in the minimum wage literature. While studies by Card and Krueger [1994], Dube et al. [2010], and Cengiz et al. [2019] have challenged the traditional competitive model by finding minimal disemployment effects from modest minimum wage increases in developed economies, these findings typically apply to small, incremental changes ranging from five percent to 15 percent in contexts with substantial labor market frictions and monopsony power.

Other studies from Neumark and Wascher [2007] and Neumark and Shirley [2022] demonstrate that disemployment effects remain evident in developing countries with large informal sectors and become pronounced for larger wage increases that substantially exceed productivity levels. The minimum wage increases examined in this study range from 46 percent (NCR) to 167 percent (ARMM)—far beyond the marginal adjustments studied in the new minimum wage literature. At these magnitudes, even models incorporating efficiency wages or monopsony elements predict substantial labor demand reductions as any existing wage premiums or rents are exhausted. Therefore, while we recognize that small incremental changes in a growing economy might produce negligible employment effects due to turnover costs and labor market frictions, the dramatic wage hikes proposed in HB 7787 justify our classical downward-sloping labor demand specification.

We let $\gamma_{i,r}$ denote the share parameter and $\mu_{i,r}$ be a scale parameter required for model calibration. The second-stage elasticity of substitution is given by $\epsilon_{2(i,r)}$. Using the two labor demand functions, we can express the aggregate wage (unit cost) as a function of regional wages, share parameters, and labor-efficiency terms:

$$AW_{i,r} = \left(\frac{1}{\mu_{i,r}}\right)\left[\gamma_{i,r}^{\epsilon_{2(i,r)}}\left(\frac{w_r^1}{\lambda_{1(r)}}\right)^{1-\epsilon_{2(i,r)}} + (1-\gamma_{i,r}^{\epsilon_{2(i,r)}})\left(\frac{w_r^2}{\lambda_{2(r)}}\right)^{1-\epsilon_{2(i,r)}}\right]^{\frac{1}{1-\epsilon_{2(i,r)}}} . \quad (13)$$

2.3. Minimum wage in the regional wage model

Following Decaluwe et al. [2000], the minimum wage mechanism is incorporated through the second stage of the nested CES model production structure. Type 1 laborers generally operate in a formal labor market vis-à-vis the Type 2 laborers who work in an informal market, reflecting the assumed productivity or ability distinction between the two groups.

A central assumption is that the Type 1 laborer has a higher wage w_r^1 compared to a Type 2 laborer's wage w_r^2. This suggests that equilibrium wage between the fixed labor supply and the labor demand for each type of laborer is higher for a Type 1 laborer than a Type 2 laborer.

We also assume that each labor type can freely move across different sectors i within a region. This means that a laborer or a labor factor input may easily be transferred from agriculture to manufacturing to services and so on without any retraining in a region. However, we will restrict the movement of labor across r. This means that a laborer or a labor factor input at region r will always remain in that region r.

FIGURE 1. Illustrating the two types of laborers

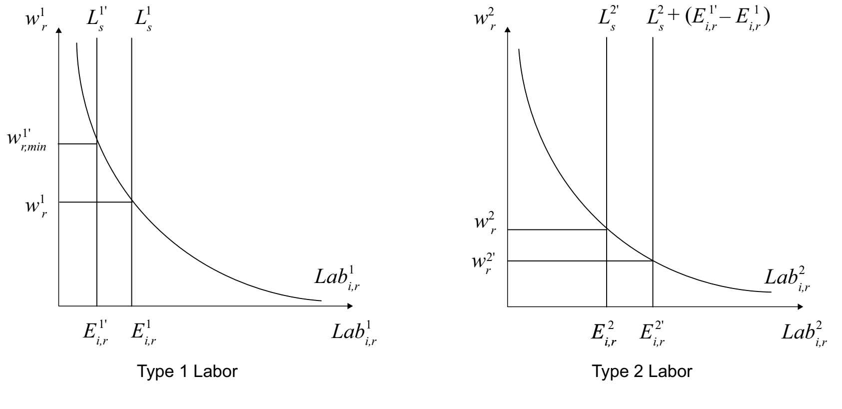


Figure 1 illustrates the labor markets for Type 1 and Type 2 workers. Each market features fixed labor supplies and similar downward-sloping demand curves. As noted, the Type 1 wage lies above Type 2 wage.

As discussed by Cororaton et al. [2017], minimum wage laws will create downward rigidity in the market for a Type 1 laborer. Analyzing the immediate effects of the imposition of a minimum wage $w_{r,\,min}^1$ is straightforward, highlighting that a higher minimum wage will force local firms to layoff laborers due to the increase in wage for the equilibrating or clearing conditions in the

Type 1 labor market to be satisfied. Graphically speaking, firms initially employ $E^1_{i,r}$ but due to the increase in minimum wage, the employment reduces to $E^{1'}_{i,r}$. The newly laid off or unemployed Type 1 laborers will have no choice but to compete for a job or employment in the Type 2 labor market. Since workers will transfer from Type 1 labor to Type 2 labor, they will inevitably increase the supply of workers in Type 2 labor. Due to the labor transfer, there will be downward pressure on the wage of a Type 2 labor from w^2_r to $w^{2'}_{i,r}$. Hence, due to the transfer of labor from Type 1 to Type 2 labor market, the supply of Type 2 labor will now be endogenous. It now depends on both the fixed component of Type 2 labor supply and the number of displaced Type 1 workers, which is itself a function of the magnitude of the wage increase. We formally express these mathematical relationships below following Decaluwe et al. [2000] and Annabi et al. [2006].

We first note that the minimum wage in a region is less than or equal to the true regional wage. This is because not every worker in the Type 1 labor market is paid the minimum wage.

$$w^1_{r,\,min} \leq w^1_r \tag{14}$$

This in turn will lead to an unemployment value in the Type 1 labor market which is greater than or equal to zero.

$$Unemployment^1_r \geq 0 \tag{15}$$

These two conditions define the orthogonality constraint for the minimum wage which suggests that the following relationship should hold.

$$(w^1_r - w^1_{r,\,min}) \cdot Unemployment^1_r = 0 \tag{16}$$

There are two main conditions for the constraint to still hold. The first condition happens when w^1_r is greater than the exogenous $w^{1'}_{r,\,min}$. If this is the case, then the unemployment in Type 1 would not exist since this is a reduction in the minimum wage. The second condition is when there are minimum wage increases, which occur when $w^{1'}_{r,\,min}$ is greater than or equal to w^1_r, which suggests that there will be a displacement of laborers from Type 1 to Type two suggesting that $Unemployment^1_r > 0$.

In the presented graph, we can see that $Unemployment^1_r$ is represented by the difference in the initial level of employment in Type 1 labor market given as $\sum_i E^{1'}_r - \sum_i E^1_r$.

$$Unemployment^1_r = \sum_i E^{1'}_r - \sum_i E^1_r \tag{17}$$

This market equilibrium condition would be labor demand for all sectors in a region on the left-hand side and labor supply on the right-hand side accounting for the increases in minimum wage. Note that we let $SLab^1_r$ and $SLab^2_r$ be the fixed labor supply for the Type 1 and the Type 2 labor markets for each region. The market equilibrium for the two labor markets can be formed through the following:

$$\sum_i {}^1 Lab_{i,r} = SLab_r^1 - Unemployment_r^1 \tag{18}$$

$$\sum_i {}^2 Lab_{i,r} = SLab_r^2 + Unemployment_r^1 \tag{19}$$

2.4. Product market framework

The product market framework is directly adopted from Annabi et al. [2006] which suggests that the market for commodities clears when there is an equality between the demand of a representative household and the regional gross domestic product. This is given as

$$rx_{i,r}^* = rgdp_{i,r} \tag{20}$$

$$\frac{\delta_{i,r}\, rCP_{i,r}^{-\sigma_2}(CP_i \cdot x_i)}{\sum_r \delta_{i,r}\, rCP_{i,r}^{1-\sigma_2}} = rgdp_{i,r}\ . \tag{21}$$

Using the market clearing condition given above, we can compute for the regional price $rCP_{i,r}$ which is given by the form below:

$$rCP_{i,r} = Margin_{i,r} + PP_{i,r}\ . \tag{22}$$

The consumer price of the regional product is the sum of the producer price and a given trade margin which accounts for various external costs such as taxes, storage, and transportation costs.

2.5. Brief overview of the data

The data for the study used the Nominal GDRP and the Real GDRP which was disaggregated into four sectors from the initial twelve sectors as stipulated in the study. To derive the column on labor compensation, regional employment data from the Philippine Statistical Yearbook (PSY) was used where the data was segmented into the two labor market types used in the study, which was then further disaggregated into the four sectors using factors from the Labor Force Survey (LFS). The share parameters that were used to disaggregate between the two markets were from the October releases of the LFS. The average daily pay for Type 1 and Type 2 were computed using the LFS and were multiplied with the share parameters to obtain the daily compensation. The wage ratio is simply the ratio between the Type 1 and Type 2 daily compensations. Since the value is greater than unity, Type 1 labor has a higher wage w_r^1 than Type 2 labor, w_r^2.

TABLE 1. Data used in calibrating the RWM

			Nominal	Real	Labor compensation[3]		Wage ratio
			GRDP[1]	GRDP[2]	Type1	Type 2	Type 1/Type 2
Region 1	Ilocos Region	Agriculture	91.0	52.2	8.8	8.2	1.05
		Manufacturing	18.7	11.2	2.8	1.0	1.45
		Non-Manufacturing	84.0	47.1	5.8	2.5	1.44
		Services	192.6	113.8	45.7	4.9	2.44
		Total	386.2	224.2	63.1	16.6	1.60
Region 2	Cagayan Valley	Agriculture	91.1	48.3	7.1	12.6	1.03
		Manufacturing	3.0	1.8	1.1	0.5	1.31
		Non-Manufacturing	29.3	14.7	1.8	1.2	1.17
		Services	105.0	63.0	25.3	3.2	2.59
		Total	228.4	127.8	35.4	17.5	1.52
Region 3	Central Luzon	Agriculture	191.2	112.7	8.7	15.3	1.04
		Manufacturing	351.2	221.1	16.5	5.0	1.47
		Non-Manufacturing	111.6	61.1	11.7	8.5	1.20
		Services	463.8	266.9	114.3	22.1	2.01
		Total	1,117.7	661.9	151.2	50.9	1.43
Region 4a	CALABARZON	Agriculture	115.9	71.2	8.1	15.4	1.02
		Manufacturing	1,001.1	661.5	41.6	6.8	1.59
		Non-Manufacturing	188.9	101.1	14.0	9.2	1.25
		Services	676.8	401.1	169.3	23.3	2.35
		Total	1,982.7	1,234.9	233.0	54.7	1.55

TABLE 1. Data used in calibrating the RWM (continued)

			Nominal	Real	Labor compensation[3]		Wage ratio
			GRDP[1]	GRDP[2]	Type1	Type 2	Type 1/Type 2
Region 4b	MIMAROPA	Agriculture	53.5	27.1	4.3	11.5	1.12
		Manufacturing	8.7	5.7	0.9	1.1	1.17
		Non-Manufacturing	57.1	34.5	1.5	1.6	1.24
		Services	83.3	50.2	22.1	3.7	2.50
		Total	202.6	117.5	28.7	17.8	1.51
Region 5	Bicol Region	Agriculture	65.9	33.4	5.3	15.3	1.02
		Manufacturing	7.9	5.0	1.9	2.1	1.22
		Non-Manufacturing	49.1	25.0	2.8	4.0	1.02
		Services	140.4	81.4	40.7	8.3	2.47
		Total	263.3	144.8	50.7	29.7	1.44
Region 6	Western Visayas	Agriculture	122.9	61.7	7.9	15.6	1.19
		Manufacturing	34.1	22.9	3.4	1.8	1.61
		Non-Manufacturing	67.6	36.1	5.0	3.6	1.19
		Services	278.8	163.3	62.1	9.6	2.46
		Total	503.3	284.0	78.5	30.6	1.61
Region 7	Central Visayas	Agriculture	56.0	28.2	4.0	14.7	1.25
		Manufacturing	173.8	113.2	9.7	4.3	1.54
		Non-Manufacturing	112.3	59.6	4.6	5.3	1.60
		Services	467.1	256.0	61.5	12.7	2.41
		Total	809.3	457.0	79.8	37.2	1.70

TABLE 1. Data used in calibrating the RWM (continued)

			Nominal	Real	Labor compensation[3]		Wage ratio
			GRDP[1]	GRDP[2]	Type1	Type 2	Type 1/Type 2
Region 8	Eastern Visayas	Agriculture	52.6	27.3	3.0	12.4	1.08
		Manufacturing	41.5	28.8	1.0	1.2	1.35
		Non-Manufacturing	61.5	33.2	1.8	1.8	1.32
		Services	103.9	60.3	26.0	5.9	3.01
		Total	259.5	149.6	31.9	21.3	1.69
Region 9	Zamboanga Pen.	Agriculture	62.2	30.4	3.1	10.4	1.14
		Manufacturing	56.6	38.8	1.2	1.0	1.25
		Non-Manufacturing	26.0	14.6	1.4	1.8	1.14
		Services	111.3	63.1	23.6	4.5	2.99
		Total	256.0	146.8	29.3	17.8	1.63
Region 10	N. Mindanao	Agriculture	120.5	62.9	5.8	13.7	1.24
		Manufacturing	82.7	56.0	2.9	1.2	1.63
		Non-Manufacturing	70.3	35.5	3.0	2.3	1.37
		Services	206.0	112.9	36.7	6.2	2.58
		Total	479.5	267.4	48.4	23.3	1.70
Region 11	Davao Region	Agriculture	101.9	40.5	6.0	12.9	1.37
		Manufacturing	88.0	61.1	2.8	1.4	1.41
		Non-Manufacturing	61.1	32.1	3.3	3.4	1.30
		Services	263.2	147.1	36.3	6.9	2.23
		Total	514.1	280.9	48.4	24.6	1.58

TABLE 1. Data used in calibrating the RWM (continued)

			Nominal	Real	Labor compensation[3]		Wage ratio
			GRDP[1]	GRDP[2]	Type1	Type 2	Type 1/Type 2
Region 12	SOCCSKSARGEN	Agriculture	109.8	53.9	7.9	13.4	1.58
		Manufacturing	67.2	47.0	2.4	1.6	0.98
		Non-Manufacturing	35.6	19.5	1.5	1.1	1.41
		Services	129.8	74.7	32.5	4.5	3.24
		Total	342.5	195.1	44.4	20.6	1.80
Region 13	CARAGA	Agriculture	33.7	17.5	3.3	10.1	0.98
		Manufacturing	3.9	2.6	1.4	1.0	1.14
		Non-Manufacturing	37.8	29.6	2.7	2.6	1.23
		Services	73.3	41.3	22.2	4.9	2.28
		Total	148.7	91.1	29.6	18.6	1.41
Region 14	ARMM	Agriculture	63.6	29.8	3.9	11.5	1.40
		Manufacturing	1.0	0.6	0.2	0.2	1.32
		Non-Manufacturing	4.3	2.3	0.3	0.3	1.34
		Services	32.2	17.4	12.7	3.8	2.78
		Total	101.1	50.2	17.0	15.9	1.71
Region 15	CAR	Agriculture	24.0	13.0	3.0	5.1	1.12
		Manufacturing	82.3	51.8	0.9	0.2	1.61
		Non-Manufacturing	31.2	13.7	2.2	1.3	1.29
		Services	90.1	50.4	17.3	1.5	2.27
		Total	227.6	128.9	23.4	8.2	1.57

TABLE 1. Data used in calibrating the RWM (continued)

			Nominal	Real	Labor compensation[3]		Wage ratio
			GRDP[1]	GRDP[2]	Type1	Type 2	Type 1/Type 2
Region 16	NCR	Agriculture	9.4	5.0	0.7	0.7	1.38
		Manufacturing	521.1	326.4	27.7	4.4	1.39
		Non-Manufacturing	310.9	166.8	18.0	7.1	1.36
		Services	3,832.8	2,111.4	238.7	22.8	2.02
		Total	4,674.2	2,609.5	285.1	34.9	1.54

Source: Philippine National Accounts, and Labor Force Survey.
[1] ₱ billion
[2] 2000 prices
[3] ₱ billion

2.6. Model and data limitations

Given the structure of the model, several limitations are important for interpreting our results. First, the model assumes a competitive labor market with full compliance and strict enforcement of the minimum wage. This assumption allows for a transparent mapping from policy changes to economic outcomes but necessarily abstracts from firm heterogeneity, imperfect markets, informality, and alternative margins of adjustment, which are more realistic. As a result, the model likely overstates disemployment effects relative to more realistic settings in which firms possess labor market power or adjust along non-employment margins. Our results should be interpreted as upper-bound estimates of the employment effects of minimum wage increases under full compliance and competitive wage-setting.

Second, the model is calibrated to a 2012 benchmark dataset, which may limit its precision when simulating minimum wage policies in later years, particularly the 2018 and 2024 counterfactuals. Ideally, the model would be recalibrated as newer data become fully harmonized and validated. However, 2012 remains the most recent year for which a complete and internally consistent social accounting matrix is available. Moreover, many key behavioral and technological parameters that govern substitution patterns and labor demand evolve only gradually over time, so the 2012 calibration remains informative for medium-run comparative-static analysis. To the extent that later years exhibit higher informality, weaker enforcement, or stronger employer market power, our simulations may overstate true employment losses, reinforcing the interpretation of our results as conservative upper-bound estimates.

3. Performing the simulations

We conducted a series of simulations designed to assess the potential effects of HB 7787. Consistent with the core intent of the House Bill, the simulations imposed the abolition of the regional wage boards and replaced all regional wages with a sole national minimum wage. The model design does not account for differences in agricultural and non-agricultural minimum wages, reflecting a simplying assumption of uniform wage floors across sectors.

Assumptions on productivity draw from average labor productivity gains documented in Annabi et al. [2006], though we acknowledge that these may not fully capture the context-specific dynamics of the Philippine labor market. The assumption of productivity gains following wage increases has theoretical support in efficiency wage theory, which posits that higher wages can enhance worker productivity through improved nutrition, reduced shirking, lower turnover costs, and enhanced morale (Shapiro and Stiglitz [1984]; Akerlof and Yellen [1986]).

Empirical evidence suggests these effects exist, though their magnitude varies considerably by context. For instance, Mas [2006] found evidence of productivity responses to wage changes among police officers, while Riley and Bondibene [2017] documented positive productivity effects from minimum wage increases in the UK's care home sector. However, the choice of uniform 10 to 20 percent productivity increases across all sectors and regions appears conservative relative to wage increases of 46 to 167 percent, which is appropriate given the uncertainty around such effects and the lack of Philippines-specific estimates.

3.1. Simulation 1

Simulation 1 is the most direct yet most restrictive simulation of HB 7787. We merely simulate and adjust the minimum wage of all regions in the Philippines to ₱750 as proposed by the proponents of the aforementioned house bill. Hence, the highest reported minimum wage for each region were all adjusted to the proposed national minimum wage. We have no adjustments in labor productivity and also no changes in labor supply due to changes in the minimum wage. We also do not adjust factor productivities and capital stocks of the sectors.

We refer to Table 2 for the initial calibration on the changes of the wage and the immediate change in the Type 2 labor market. We can also see the amount of labor that will shift from one labor market to another for each region.

TABLE 2. Simulation 1 labor market shifts and wage changes

	Wages, percent change		Labor shifts (level)	
	Type 1	**Type 2**	**Type 1**	**Type 2**
NCR	46.0000	-72.1166	-87.5171	87.5171
CAR	150.0000	-57.8948	-13.0609	13.0609
Ilocos Region	141.0000	-64.2325	-34.5854	34.5854
Cagayan Valley	120.0000	-48.0809	-18.4574	18.4574
Central Luzon	97.0000	-58.6436	-70.1206	70.1206
CALABARZON	87.5000	-64.0032	-101.8244	101.8244
MIMAROPA	150.0000	-45.7622	-16.3779	16.3779
Bicol	158.0000	-49.6610	-29.4586	29.4586
Western Visayas	105.0000	-51.8754	-38.0703	38.0703
Central Visayas	105.0000	-46.5260	-37.9112	37.9112
Eastern Visayas	146.0000	-41.3993	-17.8557	17.8557
Zamboanga	153.0000	-44.7174	-16.6519	16.6519
Northern Mindanao	121.0000	-46.3537	-24.8574	24.8574
Davao Region	120.0000	-47.1771	-24.6839	24.6839
SOCCSKARGEN	141.0000	-47.3205	-24.6874	24.6874
CARAGA Region	145.0000	-47.5902	-16.5933	16.5933
ARMM	167.0000	-35.6453	-10.4312	10.4312

In Table 2, we see the approximate recalibration of the minimum wage to ₱750 for all regions. Note that there is downward rigidity in the labor market for Type 1 which will subsequently cause a decrease in the wage of the Type 2 labor market. As illustrated, labor will shift from Type 1 to Type 2 due to lay offs triggered by increased costs.

FIGURE 2. Labor shifts in Simulation 1

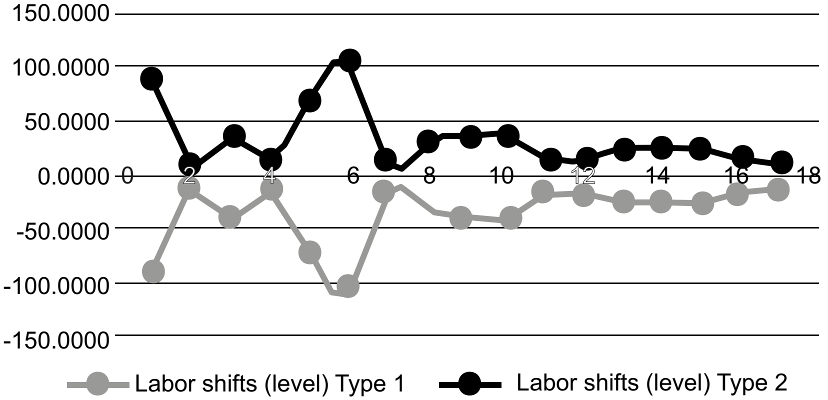


Figure 2 illustrates that the graph is perfectly symmetric, as implied by the model's assumptions. The regions most affected by the change in minimum wage are those that previously had the highest wage floors, particlarly NCR and Region IV-A.

TABLE 3. Agriculture to non-agriculture labor movement

	Type 1	Type 2
Agriculture	-57.860	81.500
Non-agriculture	-44.701	86.314

In Table 3, the agricultural sector *i* observes that changes in the minimum wage have cause a substantial decrease in the Type 1 market, which has prompted a transfer to the Type 2 market. Similarly, the non-agricultural sectors also saw the same transfer from Type 1 to Type 2 with a greater movement of labor *vis-à-vis* the agricultural sector.

Table 4 provides a detailed breakdown of the resulting changes in production, consumer and producer prices, and labor demand. As expected, higher minimum wage reduces demand for Type 1 labor across regions, triggering the shift of workers into the Type 2 labor market. Contraction in production naturally follows this adjustment: with less laborers and no offsetting changes in labor productivity, output declines. We also observe significant increases in consumer prices and producer prices, particularly in the services sector, which registers the largest price gains across all regions.

TABLE 4. Regional consumer price changes and labor demand changes

Regions/sectors	Percentage change				
	Production	Prices		Labor demand	
		Consumer	Producer	Type 1	Type 2
NCR					
Agriculture	-6.3997	-8.1839	-15.5684	-37.4182	210.1348
Manufacturing	-6.9314	-4.6228	-7.3795	-28.6905	141.7148
Nonmanufacturing	-6.8689	-5.2168	-9.7257	-27.0424	112.3873
Services	-6.8243	-2.5630	-4.6526	-31.1812	181.9042
CAR					
Agriculture	-6.4961	-7.7139	-14.2312	-62.1172	111.9954
Manufacturing	-6.8260	-5.1818	-8.2357	-50.3172	84.7652
Nonmanufacturing	-7.6055	0.1288	0.2928	-47.7552	64.9449
Services	-9.6457	14.8543	26.5556	-55.9977	100.6185
Ilocos Region					
Agriculture	-7.2996	-3.6820	-6.4242	-60.4828	149.9017
Manufacturing	-8.6996	5.3641	8.9410	-50.7376	101.1068
Nonmanufacturing	-7.4179	-1.2646	-2.2550	-46.1788	84.3735
Services	-10.0673	17.7635	30.0745	-55.0564	128.2151
Cagayan Valley					
Agriculture	-7.0305	-5.0555	-9.5352	-57.0939	73.2866
Manufacturing	-11.3790	22.9847	38.6129	-49.1700	47.4028
Nonmanufacturing	-7.3444	-1.8045	-3.5839	-43.3459	43.8692
Services	-9.7906	15.8443	26.4215	-51.5642	65.6829
Central Luzon					
Agriculture	-6.6374	-7.0200	-11.9060	-52.8274	113.3408
Manufacturing	-7.1081	-3.6773	-5.8401	-42.2547	82.5488
Nonmanufacturing	-7.2813	-2.2656	-4.1379	-39.7042	65.1308
Services	-9.1012	11.2218	19.4989	-47.1746	99.6386
CALABARZON					
Agriculture	-5.8781	-10.6778	-17.3749	-50.7013	143.0772
Manufacturing	-7.0161	-4.1709	-6.3123	-39.7738	103.3609
Nonmanufacturing	-7.0590	-3.8693	-7.2295	-37.7445	80.6220
Services	-8.9752	10.4014	17.5503	-44.8244	125.0133
MIMAROPA					
Agriculture	-6.6954	-6.7332	-13.2657	-62.1551	65.7989
Manufacturing	-7.4784	-1.6592	-2.5293	-52.4578	46.6927
Nonmanufacturing	-6.8902	-5.0671	-8.3881	-47.7412	40.1137
Services	-10.7392	22.5828	37.5106	-56.7652	58.8796

TABLE 4. Regional consumer price changes (continued)

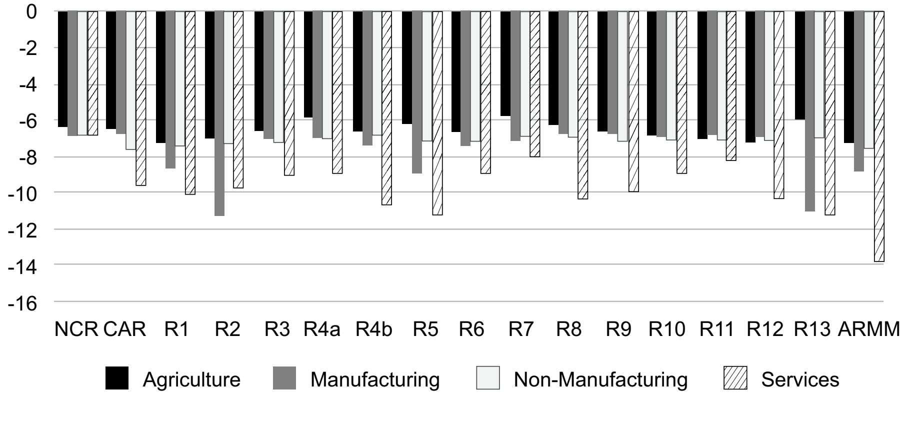
Regions/sectors	Percentage change				
	Production	Prices		Labor demand	
		Consumer	Producer	Type 1	Type 2
Bicol					
Agriculture	-6.3026	-8.6545	-17.0648	-63.3603	77.8571
Manufacturing	-8.9939	7.1447	11.3942	-54.2435	52.6711
Nonmanufacturing	-7.1802	-2.9989	-5.8979	-49.3321	45.4767
Services	-11.2744	26.5905	45.8460	-58.2268	68.0262
Western Visayas					
Agriculture	-6.7483	-6.4709	-12.8807	-54.3601	85.2702
Manufacturing	-7.4896	-1.5972	-2.3775	-44.5209	61.5116
Nonmanufacturing	-7.2527	-2.4733	-4.6259	-40.9747	50.4020
Services	-9.1576	11.5919	19.7915	-48.6008	76.6111
Central Visayas					
Agriculture	-5.8294	-10.9064	-21.6438	-54.3169	67.4801
Manufacturing	-7.1961	-3.2022	-4.9187	-44.0403	50.7292
Nonmanufacturing	-6.9723	-4.4867	-8.4576	-41.1997	39.9751
Services	-8.0331	4.4853	8.1852	-48.1085	62.9935
Eastern Visayas					
Agriculture	-6.3877	-8.2421	-15.8971	-61.6420	53.5231
Manufacturing	-6.7950	-5.3455	-7.7180	-51.3418	40.1345
Nonmanufacturing	-7.0360	-4.0333	-7.4630	-47.1474	33.4075
Services	-10.4128	20.2134	34.8230	-56.2140	48.5885
Zamboanga					
Agriculture	-6.6906	-6.7568	-13.8415	-62.7470	62.0811
Manufacturing	-6.8194	-5.2165	-7.6031	-51.9692	47.4209
Nonmanufacturing	-7.1496	-3.2193	-5.7470	-48.5083	37.4215
Services	-9.9239	16.7646	29.5675	-56.8442	57.6264
Northern Mindanao					
Agriculture	-6.8915	-5.7559	-11.0229	-57.4839	67.0955
Manufacturing	-7.0009	-4.2521	-6.2808	-46.6426	51.5490
Nonmanufacturing	-7.1675	-3.0900	-6.1153	-43.4571	40.9981
Services	-8.9312	10.1161	18.4464	-51.4208	62.2312
Davao Region					
Agriculture	-7.0848	-4.7803	-12.0096	-57.3213	69.5163
Manufacturing	-6.8908	-4.8387	-6.9692	-46.6805	52.6667
Nonmanufacturing	-7.1438	-3.2612	-6.2125	-43.6591	41.4891
Services	-8.2887	6.0524	10.8251	-50.9926	65.1919

TABLE 4. Regional consumer price changes (continued)

Regions/sectors	Percentage change				
	Production	Prices		Labor demand	
		Consumer	Producer	Type 1	Type 2
SOCCSKSARGEN					
Agriculture	-7.2980	-3.6904	-7.5205	-60.6217	71.2685
Manufacturing	-6.9605	-4.4678	-6.3860	-50.1967	52.8205
Nonmanufacturing	-7.1508	-3.2107	-5.8597	-46.3646	43.1093
Services	-10.4205	20.2681	35.2351	-55.2520	63.3915
CARAGA Region					
Agriculture	-6.0286	-9.9662	-19.2643	-61.3722	71.5484
Manufacturing	-11.0756	20.8211	30.5685	-53.1102	46.1896
Nonmanufacturing	-7.0267	-4.0996	-5.2289	-47.1069	43.1093
Services	-11.2643	26.5132	46.9775	-56.5191	61.7121
ARMM					
Agriculture	-7.3160	-3.5977	-7.6757	-64.3665	41.0086
Manufacturing	-8.8736	6.4125	10.6069	-55.0650	28.2956
Nonmanufacturing	-7.5839	-0.0327	-0.0609	-49.9517	25.3751
Services	-13.8258	47.9703	88.5442	-60.6553	32.1878

Figure 3 illustrates losses experienced in all regions due to the minimum wage increase. As shown, in the absence of productivity improvement among affected laborers, raising the minimum wage would lead to great adverse effect on output. This result is unsurprising given that the the proposed national minimum wage is a sizable hike, around 1.2 to 1.7 times greater for most regions of the Philippines and higher compared to NCR, which historically has had the highest minimum wage.

FIGURE 3. Regional production effects for Simulation 1



The production of all sectors across regions declines substantially compared to pre-minimum wage levels. The sharpest reductions occur in the services sector, which also has the largest increase in consumer and producer prices. Notably, the highest price increases are observed for the services sector in ARMM, resulting in a disproportionately large decline in production *vis-à-vis* other regions.

Table 5 presents inflation rates and changes in the labor income for each region following a minimum wage hike. Real incomes for Type 1 laborers mostly increase in some regions. By contrast, the real incomes of Type 2 laborers decrease significantly due to the surplus in laborers. With the increase in minimum wage across the board, total incomes for the region drop significantly and regional inflation is at an all-time high.

TABLE 5. Regional real effects and inflation

	Real effects (nominal less inflation), percent change from base					Regional Inflation
	Labor income			Inflation income	Total income	
	Type 1	Type 2	Total labor			
NCR	4.1686	-23.5985	1.1415	-6.0935	-5.2062	-2.9805
CAR	7.3530	-18.3404	0.7034	-14.0946	-10.4684	3.2120
Ilocos Region	0.9413	-25.4115	-4.5356	-19.5379	-14.2077	7.9744
Cagayan Valley	-0.1360	-17.5755	-5.9159	-16.0531	-11.8568	5.3425
Central Luzon	3.5511	-20.8782	-2.5987	-12.4151	-9.4185	2.0748
CALABARZON	5.1088	-21.2693	0.0945	-10.9267	-8.3592	0.4522
MIMAROPA	1.5616	-18.7131	-6.2015	-17.5706	-13.0644	6.0093
Bicol	-3.6323	-26.5961	-12.1222	-23.8678	-17.3441	11.6701
Western Visayas	1.1272	-19.2238	-4.5870	-15.1754	-11.1086	4.4005
Central Visayas	7.0500	-14.9485	0.0580	-10.9525	-8.1349	0.5232
Eastern Visayas	3.5006	-16.8696	-4.6522	-15.7306	-11.7971	4.6099
Zamboanga	4.9557	-17.0554	-3.3518	-14.8930	-11.1959	4.1653
Northern Mindanao	5.7852	-14.5355	-0.8258	-12.0839	-9.0636	1.7117
Davao Region	6.8100	-14.5871	-0.4115	-11.2714	-8.4479	0.9352
SOCCSKARGEN	1.6302	-17.5275	-4.4404	-16.1029	-12.2206	5.2879
CARAGA Region	-2.5942	-24.5713	-11.0609	-22.4103	-16.4070	10.3000
ARMM	-9.6742	-23.9884	-16.5789	-22.3496	-18.5659	13.0715

Table 6 shows that once the region results have been aggregated, total real income (GDP) would decline by roughly 8.31 percent, while nominal GDP would fall by 7.61 percent. Type 2 labor market would experience wage reductions across all regions as the increased supply, caused by the increase in minimum wage for the Type 1 labor market, pushes wages downward.

TABLE 6. Economy wide effects in Simulation 1

	Percent change	
	Nominal	**Real**
Type 1 Labor income		
Agriculture	-5.91986	-6.62313
Manufacturing	12.04136	11.33808
Non-Manufacturing	19.29683	18.59356
Services	4.59775	3.89448
Type 2 Labor income		
Agriculture	-23.98841	-11.25447
Manufacturing	-30.13071	-24.69169
Non-Manufacturing	-16.50710	-30.83398
Services	0.00000	-17.21037
Other (Capital) income		
Agriculture	-10.28885	-8.31840
Manufacturing	-11.75803	-10.99212
Non-Manufacturing	-9.80944	-12.46131
Services	0.00000	-10.51271
Total income (GDP)	-7.60727	-8.31054

3.2. Simulation 2

Simulation 2 modifies Simulation 1 by introducing increases in labor factor productivity. Given that Type 1 labor market wages rise to ₱750 for all regions, it is reasonable to expect corresponding increases in productivity. For this exercise, we apply an increase of 20 percent for all Type 1 laborers. While different regions may realistically experience heterogeneous productivity responses, we impose a uniform rate for tractability. We also assume no labor productivity loss in the Type 2 labor market despite the decrease in wages. These assumptions are restrictive but useful in isolating comparative effects of productivity gains.

As shown in Table 7, production losses across the sectors and regions of the economy are smaller than in Simulation 1. The pattern of the consumer and producer price effects remain broadly similar with the services sector continuing to experience sharp price increases in regions which had a very low minimum wage prior to the adjustment to ₱750.

Relative to Simulation 1, the decline in real GDP improves from 8 percent to roughly 4.95 percent with a nominal value trending lower than 4.6 percent. This reduction in output loss is consistent with introducing productivity gains in the Type 1 labor market. However, these results do not account for productivity losses in the Type 2 labor market.

TABLE 7. Simulation 2 changes in production, prices, and labor demand

Regions/sectors	Percentage change				
	Production	Prices		Labor demand	
		Consumer	Producer	Type 1	Type 2
NCR					
Agriculture	-3.3748	-8.1656	-15.5335	-36.3308	218.1892
Manufacturing	-4.0986	-3.2788	-5.2340	-30.7272	146.7714
Nonmanufacturing	-4.0090	-4.1857	-7.8034	-30.1244	117.3409
Services	-4.0126	-1.9610	-3.5598	-31.8960	187.2150
CAR					
Agriculture	-3.3009	-8.5128	-15.7048	-61.2374	112.5615
Manufacturing	-4.1488	-3.0155	-4.7927	-51.8028	84.2906
Nonmanufacturing	-4.6246	0.1701	0.3868	-49.8277	66.0334
Services	-6.3460	11.8316	21.1519	-56.1834	100.5361
Ilocos Region					
Agriculture	-4.2654	-3.8542	-6.7245	-59.7391	150.0078
Manufacturing	-5.4126	3.9029	6.5055	-51.8223	102.5402
Nonmanufacturing	-4.5195	-0.5896	-1.0514	-48.4071	85.5116
Services	-6.6169	13.5778	22.9878	-55.1592	128.9813
Cagayan Valley					
Agriculture	-4.0357	-4.9891	-9.4101	-56.1705	73.1404
Manufacturing	-7.1338	14.2964	24.0171	-49.6639	49.8723
Nonmanufacturing	-4.4369	-1.1823	-2.3480	-45.6085	44.5998
Services	-6.3391	11.7876	19.6567	-51.6643	65.7027
Central Luzon					
Agriculture	-3.7935	-6.1682	-10.4614	-51.9052	113.5740
Manufacturing	-4.2929	-2.2553	-3.5817	-43.8411	82.8182
Nonmanufacturing	-4.2438	-2.5505	-4.6584	-42.0364	66.6170
Services	-5.6011	7.1920	12.4969	-47.2383	100.5175
CALABARZON					
Agriculture	-2.9184	-10.2848	-16.7354	-49.6841	144.4361
Manufacturing	-4.2455	-2.5058	-3.7923	-41.5189	103.8775
Nonmanufacturing	-4.1284	-3.3583	-6.2748	-40.2464	82.3775
Services	-5.4815	6.4684	10.9142	-44.9309	126.5219
MIMAROPA					
Agriculture	-3.6636	-6.7933	-13.3841	-61.2603	65.6913
Manufacturing	-4.4302	-1.5237	-2.3227	-53.4505	47.2580
Nonmanufacturing	-4.1619	-3.1248	-5.1728	-49.8705	40.5304
Services	-7.1887	17.3702	28.8525	-56.7724	58.9379

TABLE 7. Simulation 2 changes (continued)

Regions/sectors	Percentage change				
	Production	Prices		Labor demand	
		Consumer	Producer	Type 1	Type 2
Bicol					
Agriculture	-3.2646	-8.6826	-17.1202	-62.4806	77.4085
Manufacturing	-5.2566	3.0178	4.8127	-54.8630	54.1457
Nonmanufacturing	-4.2712	-2.3578	-4.6370	-51.2592	46.1036
Services	-7.5982	20.1794	34.7923	-58.1520	68.0861
Western Visayas					
Agriculture	-3.7773	-6.2463	-12.4337	-53.3787	85.4873
Manufacturing	-4.4824	-1.2443	-1.8522	-45.8498	62.1081
Nonmanufacturing	-4.3224	-1.9962	-3.7336	-43.3124	51.4234
Services	-5.7644	8.1892	13.9819	-48.7373	76.8449
Central Visayas					
Agriculture	-2.7730	-10.9475	-21.7254	-53.2046	68.5032
Manufacturing	-4.3577	-1.9110	-2.9354	-45.5082	51.1792
Nonmanufacturing	-4.1473	-3.2266	-6.0822	-43.5192	41.1503
Services	-4.9612	3.3879	6.1825	-48.4156	62.9823
Eastern Visayas					
Agriculture	-3.4411	-7.8526	-15.1459	-60.7154	53.5270
Manufacturing	-4.0996	-3.2735	-4.7262	-52.5548	40.1110
Nonmanufacturing	-4.2621	-2.4221	-4.4817	-49.2791	33.8770
Services	-6.8974	15.4199	26.5650	-56.2165	48.6818
Zamboanga					
Agriculture	-3.7631	-6.3148	-12.9360	-61.8806	62.1791
Manufacturing	-4.1330	-3.0984	-4.5159	-53.2312	47.3566
Nonmanufacturing	-4.2883	-2.2372	-3.9938	-50.5004	38.2761
Services	-6.5511	13.1506	23.1936	-56.9391	57.5900
Northern Mindanao					
Agriculture	-3.9995	-5.1661	-9.8934	-56.5720	67.4483
Manufacturing	-4.2589	-2.4349	-3.5967	-48.1119	51.6648
Nonmanufacturing	-4.3281	-1.9559	-3.8708	-45.7460	41.9204
Services	-5.6810	7.6786	14.0016	-51.6207	62.3499
Davao Region					
Agriculture	-4.0788	-4.7771	-12.0016	-56.3685	70.0573
Manufacturing	-4.1740	-2.8833	-4.1528	-48.1313	52.8606
Nonmanufacturing	-4.2679	-2.3810	-4.5358	-45.8731	42.6112
Services	-5.1992	4.7836	8.5558	-51.2779	65.0616

TABLE 7. Simulation 2 changes (continued)

Regions/sectors	Percentage change				
	Production	Prices		Labor demand	
		Consumer	Producer	Type 1	Type 2
SOCCSKSARGEN					
Agriculture	-4.3095	-3.6344	-7.4065	-59.7828	71.1760
Manufacturing	-4.2266	-2.6059	-3.7248	-51.5132	52.8186
Nonmanufacturing	-4.3361	-1.8992	-3.4661	-48.5502	43.7641
Services	-6.9051	15.4706	26.8950	-55.2971	63.6596
CARAGA Region					
Agriculture	-2.9199	-10.2778	-19.8665	-60.4104	71.2291
Manufacturing	-6.9043	12.8411	18.8526	-53.5464	48.2122
Nonmanufacturing	-4.2363	-2.6034	-3.3206	-49.2383	43.3682
Services	-7.5159	19.6089	34.7441	-56.4000	61.8934
ARMM					
Agriculture	-4.3688	-3.3378	-7.1213	-63.5249	40.3350
Manufacturing	-5.5204	4.5202	7.4769	-55.8269	28.9022
Nonmanufacturing	-4.6669	0.4774	0.8892	-51.8787	25.6962
Services	-9.6537	35.5456	65.6106	-60.2802	33.0364

TABLE 8. Simulation 2 economy-wide changes

	Percent change	
	Nominal	Real
Type 1 Labor income		
Agriculture	-3.87128	-4.23792
Manufacturing	8.99596	8.62932
Non-Manufacturing	14.49394	14.12729
Services	4.19244	3.82580
Type 2 Labor income		
Agriculture	-21.80114	-8.27825
Manufacturing	-27.83129	-22.16779
Non-Manufacturing	-14.18547	-28.19793
Services	0.00000	-14.55211
Other (Capital) income		
Agriculture	-6.24391	-4.64798
Manufacturing	-7.05714	-6.61055
Non-Manufacturing	-5.98880	-7.42378
Services	0.00000	-6.35545
Total income (GDP)	-4.59581	-4.96246

3.3. Simulation 3

In the third simulation, the national minimum wage is again set to ₱750 across all regions, but the productivity adjustment varies according to the amount of wage increase per region. Those regions experiencing larger wage hikes receive correspondingly larger productivity gains.

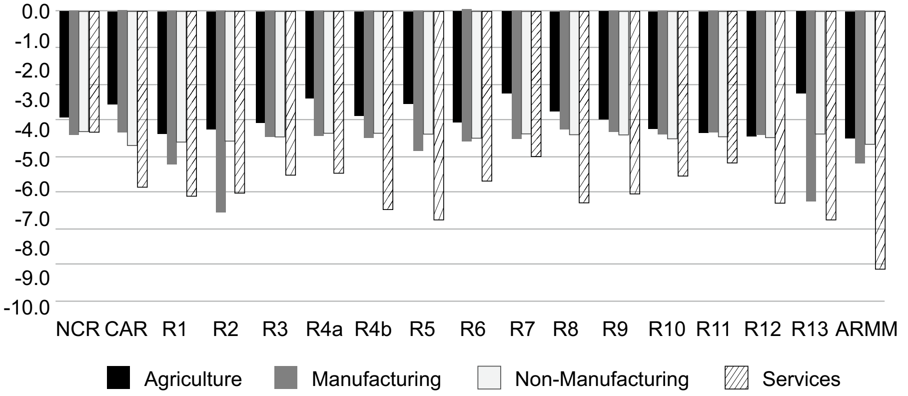
TABLE 9. Simulation 3 economy-wide changes

	Percent change	
	Nominal	**Real**
Type 1 Labor income		
Agriculture	-4.10736	-4.42304
Manufacturing	9.62597	9.310285
Non-Manufacturing	14.45193	14.13624
Services	4.317833	4.002149
Type 2 Labor income		
Agriculture	-21.7084	-8.33301
Manufacturing	-27.8017	-22.0241
Non-Manufacturing	-14.0925	-28.1174
Services	0	-14.4082
Other (Capital) income		
Agriculture	-6.2829	-4.58603
Manufacturing	-7.08057	-6.59858
Non-Manufacturing	-6.04749	-7.39626
Services	0	-6.36317
Total income (GDP)	-4.60543	-4.92111

As seen in Table 9, GDP still declines, with results very similar to Simulation 2. This outcome reflects offsetting dynamics across regions: while areas with substantial increases experience productivity boosts, major production contributors like NCR and CARAGA receive smaller adjustments due to relatively modest wage adjustments.

Figure 4 shows the resulting regional production outcomes. Patterns mirror earlier simulation, with the largest production decline observed in regions with higher minimum wage increases and the services sector being the most affected. The manufacturing sector has also been more adversely affected relative to the non-manufacturing sector in most regions.

FIGURE 4. Regional production effects for Simulation 3



3.4. Simulation 4

The fourth and final simulation sets the national minimum wage equal to the minimum wage in the National Capital Region and assumes a 10 percent added labor productivity increase for all regions except NCR.

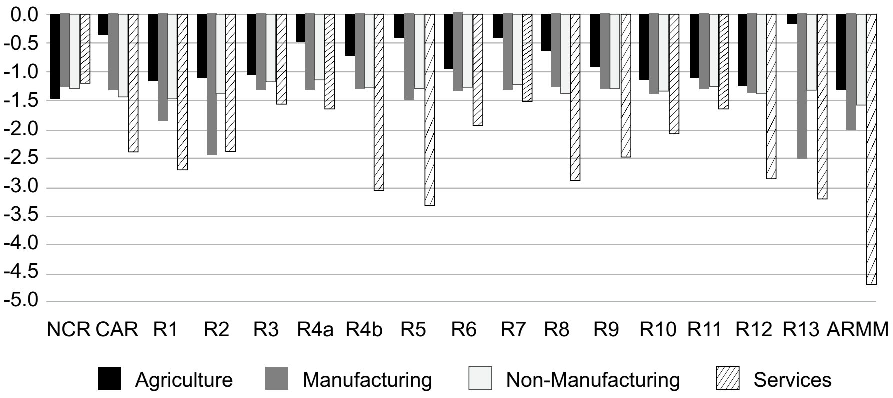
As shown in Table 10, the GDP is likely to decrease when aggregated at the national level. However, this decrease is much less compared to the declines observed in the previous three simulations.

TABLE 10. Simulation 4 economy wide changes

	Percent change	
	Nominal	**Real**
Type 1 labor income		
Agriculture	-1.39739	-1.44812
Manufacturing	3.15166	3.10093
Non-Manufacturing	6.13015	6.07942
Services	2.15194	2.10121
Type 2 labor income		
Agriculture	-10.80111	-3.78011
Manufacturing	-14.36915	-10.85184
Non-Manufacturing	-6.35612	-14.41988
Services	0.00000	-6.40685
Other (capital) income		
Agriculture	-1.92038	-1.10491
Manufacturing	-2.13545	-1.97111
Non-Manufacturing	-1.88214	-2.18618
Services	0.00000	-1.93287
Total income (GDP)	-1.41390	-1.46463

Figure 5 summarizes regional production effects. Production declines across all regions, but the magnitude of these declines is much less compared to the previous three simulations.

FIGURE 5. Regional production effects for Simulation 4



Overall, results suggest that large increases in minimum wage have adverse effects on the productivity of the economy even in the presence of realistic productivity gains brought about by the increase in minimum wage. Although adjusting all regional wages to NCR's level represents a smaller shock than imposing a uniform ₱750 wage, it still constitutes a drastic increase for many regions. Moreover it is unrealistic to assume larger productivity gains than those in Simulation 2, given the smaller size of the wage adjustment in this scenario.

3.5. Poverty microsimulations

Using the 2012 Labor Force Survey, we compute poverty effects through a microsimulation framework. The analysis examines changes in the Gini coefficient and levels of poverty incidence, poverty gap, and poverty severity. For this purpose, we take the simulations presented in Simulation 1 and Simulation 4 to assess how minimum wage adjustments translate into distributional and poverty outcomes.

As shown in Table 11, Simulation 4 was able to induce more positive impacts, based on poverty indicators, relative to Simulation 1. Both simulations reduce poverty indicators within the formal sector, which is to be expected given the rise in wages. However, the magnitude of these improvements is smaller than one might anticipate from such substantial wage increases. This could potentially be due to the scope of the formal labor market captured in this model, which does not not represent all economy-wide channels through which minimum wage policies operate. Additionally, the model is entirely static and, therefore, cannot account for dynamic adjustments or long-term poverty impacts.

TABLE 11. Poverty microsimulations

		Base 2012	Simulation 1		Simulation 4	
		Level	Level	Percent change from base	Level	Percent change from base
GINI Coefficient		0.47126	0.47110	-0.034	0.47107	-0.039
Philippines	Poverty Incidence	24.848	24.755	-0.375	24.754	-0.379
	Poverty Gap	6.836	6.805	-0.457	6.804	-0.464
	Poverty Severity	2.679	2.665	-0.519	2.664	-0.536
Urban	Poverty Incidence	11.570	11.507	-0.550	11.506	-0.556
	Poverty Gap	2.794	2.781	-0.440	2.781	-0.446
	Poverty Severity	0.989	0.986	-0.377	0.986	-0.364
Rural	Poverty Incidence	35.584	35.467	-0.329	35.466	-0.332
	Poverty Gap	10.105	10.058	-0.460	10.057	-0.468
	Poverty Severity	4.044	4.022	-0.546	4.021	-0.570

Figure 6 and Figure 7 summarize these results across regions for each poverty indicator. The two simulations yield broadly similar results, with most regions experiencing declines in poverty indicators. Region II exhibits slight increases while all other regions have declined as expected.

FIGURE 6. Poverty microsimulation for Simulation 1

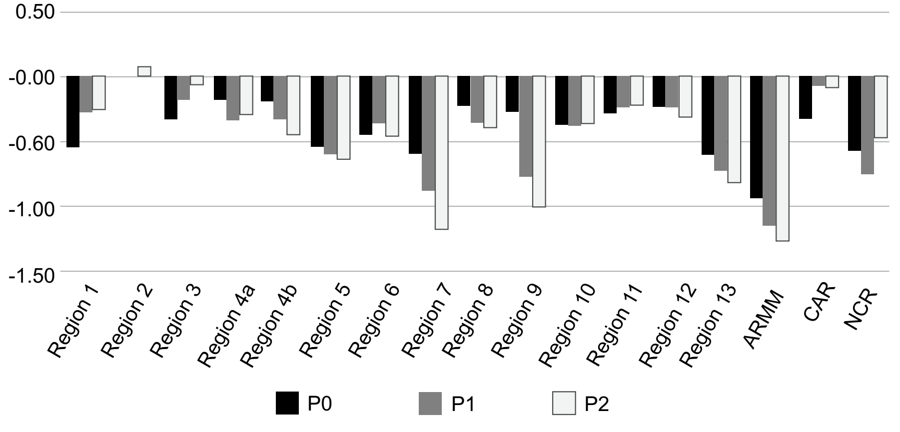
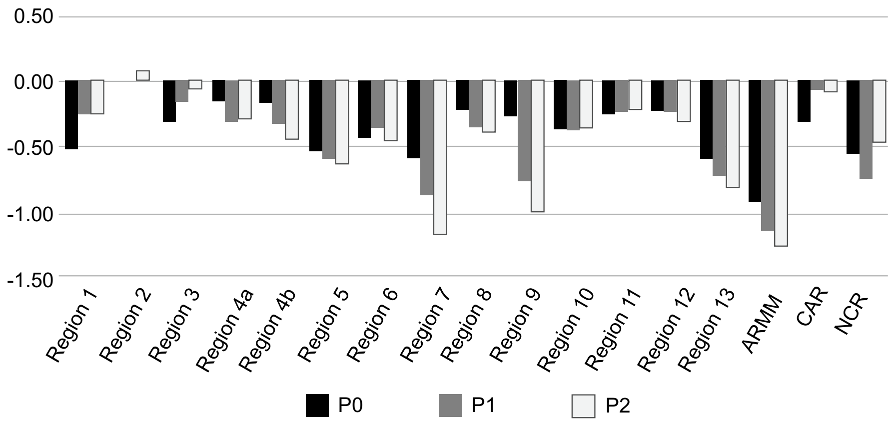


FIGURE 7. Poverty microsimulation for Simulation 4



4. Conclusion and policy recommendations

The simulation results provide compelling evidence that implementing a uniform national minimum wage in the Philippines, particularly at the ₱750 level proposed under HB 7787, would trigger severe economic disruptions whose costs substantially outweigh potential benefits. The findings reveal fundamental trade-offs between improving wage adequacy and employment sustainability. These require nuanced policy responses rather than dramatic uniform adjustments.

The most striking finding is the magnitude of economic contraction under the proposed ₱750 national minimum wage. Under Simulation 1, with no productivity adjustments, real GDP declines by 8.31 percent, driven by production losses of 5.8 to 13.8 percent across regions. These declines stem from massive formal sector employment losses, with Type 1 labor demand falling from 37.4 percent in NCR to 64.4 percent in ARMM. The resulting displacement of 44,701 workers in NCR and up to 101,824 in CALABARZON puts severe pressure on informal labor markets.

The influx of displaced workers suppresses Type 2 wages down by 35.6 to 72.1 percent. Even under optimistic assumptions of 20 percent productivity gains (Simulation 2), real GDP still contracts by 4.96 percent, indicating that the magnitude of the wage shock overwhelms plausible productivity adjustments, consistent with international evidence showing that productivity-wage elasticities rarely exceed 0.3 to 0.4 [Manning 2021]. The proportional productivity scenario (Simulation 3) yields nearly identical results, indicating that regional variation in productivity responses provides minimal cushioning and cannot neutralize a macroeconomic shock.

Regional heterogeneity further compounds concerns. Inflation ranges from -2.98 percent in NCR to 13.07 percent in ARMM, with services sector producer prices increasing 88.5 percent in the latter. These extreme variations reflect pre-existing wage disparities—ARMM's minimum wage must increase 167 percent to reach ₱750,compared to 46 percent in NCR. Rather than equalizing living standards, the reform would widen regional inequalities and impose disproportionate burdens on poorer regions.

Most concerning, however, is the minimal poverty reduction despite the substantial wage increase. Poverty incidence declines by only 0.375 to 0.379 percent, and the Gini coefficient improves marginally from 0.47126 to 0.47107. These modest gains occur because informal sector workers, who comprise significant portions of poor households, experience real income declines of 14 to 31 percent due to increased labor supply from displaced formal workers. This finding aligns with the observation that minimum wage policies in economies with large informal sectors often fail to reach intended beneficiaries [Fields 2019].

4.1. Policy recommendations

Based on the simulation results and international evidence, we recommend a comprehensive reform strategy that balances wage adequacy with employment sustainability.

4.1.1 Graduated regional approach

A uniform national wage is not advisable given the country's structural regional heterogeneity. Instead, policymakers should adopt a graduated regional convergence strategy based on regional economic capacity.

Simulation 4 suggests that setting wages at NCR levels (approximately ₱515) with modest 10 percent productivity support limits GDP decline to 1.46 percent. This could serve as a transitional benchmark, with convergence occurring gradually over five to seven years, similar to Germany's decades-long path to national minimum wage harmonization [Caliendo et al. 2018].

4.1.2. Productivity enhancement programs

Any wage increase must be coupled with strong productivity support interventions. Priority areas include: (1) skills training programs targeting displaced formal sector workers, (2) technology adoption subsidies for small and medium enterprises (SMEs) facing wage pressures, (3) infrastructure investments in lagging regions to reduce business costs, and (4) streamlined regulations to offset increased labor costs. Evidence from successful minimum wage implementations shows productivity programs can generate 15 to 25 percent efficiency gains over three to five years, partially validating our simulation assumptions.

4.1.3. Strengthen regional wage boards

Rather than abolishing RTWPBs as proposed, their institutional capacities should be enhanced through (1) mandatory inflation indexation to protect real wage value, (2) shortened review cycles from annual to semi-annual during high inflation periods, (3) expanded representation, including informal sector workers, and (4) technical secretariats with economic modeling capabilities. The failure to keep wages aligned with post-TRAIN inflation reflects institutional weaknesses, not inherent flaws in regional wage-setting frameworks.

4.1.4. Complementary social protection

Reducing working poverty requires integrated interventions beyond wages. Key measures include expanding the Pantawid Pamilyang Pilipino Program (4Ps) coverage to include working poor households. In addition, implementing earned income tax credits for low-wage formal sector workers, subsidizing social insurance contributions to encourage formalization, and strengthening labor inspection to ensure compliance with existing wages are also key social protection additions that may benefit long term.

4.2. Study limitations and future research

Several limitations warrant acknowledgment. The static CGE model cannot capture dynamic adjustments including capital-labor substitution, technological change, or long-run growth effects. The 2012 FIES data may not fully represent current household structures, particularly post-COVID changes in employment patterns. Additionally, the model does not capture potential benefits from increased consumer spending or reduced worker turnover. Future research should incorporate dynamic CGE models with forward-looking behavior, updated post-pandemic household surveys to examine pandemic-induced structural changes, and quasi-experimental evaluation of the 2025 wage adjustments. Cross-country comparative analysis with other ASEAN economies implementing wage reforms would provide valuable regional perspectives.

4.3. Final remarks

Minimum wages are a vital yet blunt policy instrument for addressing working poverty. The results of this study demonstrate that dramatic increases risk severe unintended consequences, particularly for vulnerable informal workers. The Philippine experience with TRAIN law further illustrates how well-intentioned policies can produce regressive outcomes without careful design and implementation. Success requires acknowledging that sustainable wage increases must reflect and promote productivity growth, not precede it. International evidence consistently shows that gradual, differentiated approaches coupled with complementary policies achieve better outcomes than dramatic uniform changes. As the Philippines navigates post-pandemic recovery amid global inflation, policy makers must resist political pressures for quick fixes and instead pursue evidence-based reforms that genuinely improve worker welfare without destroying the jobs they depend upon. The path forward demands not choosing between adequate wages and employment but rather crafting policies that promote both through patient institution-building, targeted interventions, and continuous adaptation based on rigorous evaluation. Only through such comprehensive approaches can minimum wage policy fulfill its promise of reducing poverty while supporting inclusive economic growth.

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