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# Mitigating Wage-Productivity Paradox


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## Summary

The wage-productivity paradox refers to a situation where wages and productivity levels are not proportionally aligned. Our empirical assessment indicates that an increase in labor productivity translates to a low wage growth.

Resolving this paradox is a common goal for policymakers and labor advocates, as it involves ensuring that workers are fairly compensated for their increased productivity, ultimately contributing to a more equitable and sustainable economic system.

A progressive wage model is a balanced approach to address wage and productivity growth simultaneously. The progressive wage model does not contribute to inflation and job losses due to its gradual and targeted approach to raising wages for low-income workers. By linking wage increases to productivity improvements, businesses are incentivized to invest in efficiency and training, offsetting labor cost hikes.



**Authors**

01

**Mohd Yusof Saari**

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**Muhamad Zharif Luqman Hashim**


## Introduction

A debatable issue of wages and productivity is similar to the issue of egg and chicken—which one comes first and which should be prioritized to maximize the economic potential. From the efficiency-wage perspective, increase wages would translate into motivation and job satisfaction which in turn improve labor productivity. From the production cost perspective, labor productivity should be increased before wages can be promoted. This Policy Brief tends to provide an empirical solution to this issue at an aggregated level.

Our view is that understanding the relationship between the compensation of employees (CE) and labor productivity is crucial because both variables can affect the level of economic growth. From a theoretical perspective, the compensation of employees would adjust to changes in the labor productivity to the extent that a productivity-compensation gap could present when imbalanced growth is persisted.

In this Policy Brief, we simply use wages to represent the terminology of CE. Essentially, CE equals the cost of labor that consists of wage and non-wage components (see Box Article 1).

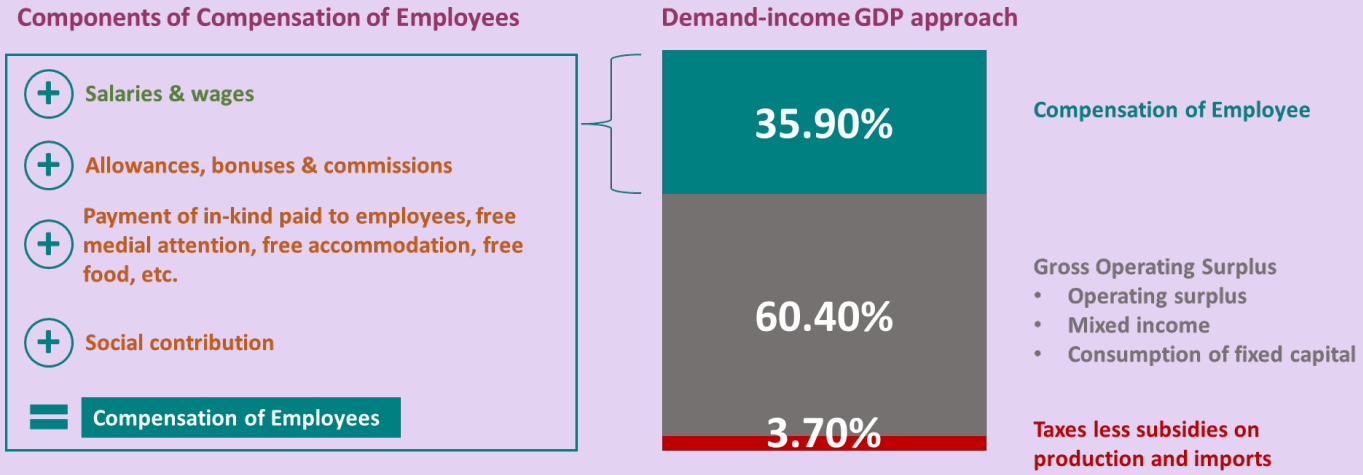
**Box Article 1**

### Components of compensation of employees

Compensation of employees (CE) includes remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done during the accounting period (see figure below). Essentially, CE equals the cost of labor that consists of wage and non-wage components.

- Wages and salaries payable (equivalent to basic pay)
- Non-wage payments in the form of social security contributions payable by employers, allowances, bonuses, training expenditures, free meals, uniform and transportation, and other payment in-kinds.

Salaries and wages made up 77.3% of the overall labor compensation on the average year from 2010 to 2021. This shows that the growth of salaries and wages will highly influence the growth of labor compensation.




Note: The percentage of component in the GDP by income approach is based on the 2021 GDP

## A Prospect to Improve Productivity

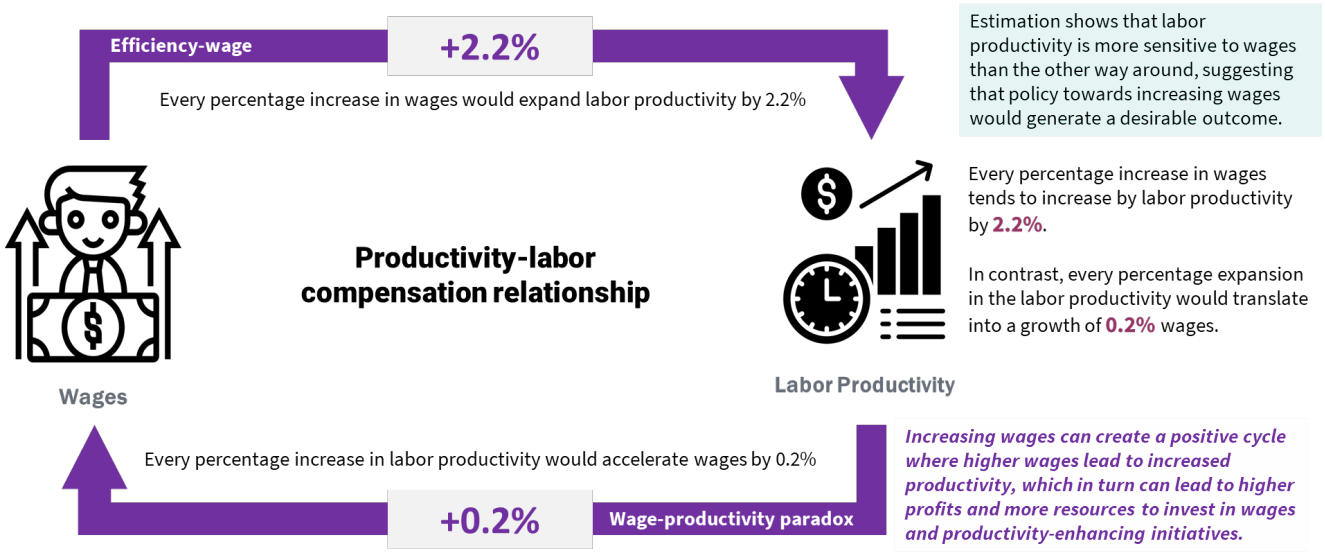
Productivity has long been associated with labor compensation. Although there has been research on this productivity-wage link for quite some time, the interchangeable impact is still inconclusive. We apply a simple simulation technique to examine the potential benefits of increasing wages to boost labor productivity, which, helps to achieve the 12th Malaysia Plan target.

The impact between wages and labor productivity is addressed from two perspectives. First, by looking at the impact of wages on labor productivity (this is an efficiency-wage perspective). Second, by examining the impact of labor productivity on wages (this production cost perspective). Our empirical analysis revealed that wages have a greater impact on labor productivity than labor productivity on wages. This is supported by the higher elasticity of labor compensation (2.2%) than the labor productivity (0.22%) as shown in Figure 1. This shows that an increase of 1% in wages could substantially improve labor productivity by 2.2%. Alternatively, increasing 1% of labor productivity may well possibly increase wages by 0.2%. This phenomenon known as a wage-productivity paradox.

Figure 1
**Impacts of wages on labor productivity and vice-versa**

Wages correlate positively with labor productivity and both can effect each other.

**However, increasing wages will promote more labor productivity growth compared to the impact of increased labor productivity on wages.**




Source: Computed based on the data from Department of Statistics Malaysia (2022)

The wage-productivity paradox refers to a situation where wages and productivity levels are not proportionally aligned. In a typical economic scenario, higher productivity is often expected to lead to higher wages for workers. However, in some cases, the correlation between increased productivity and higher wages may not be as straightforward as expected, leading to a disparity between the two (as evidenced in Figure 1). This paradox can raise concerns about wage inequality and the distribution of economic gains between employers and employees.

Resolving this paradox is a common goal for policymakers and labor advocates, as it involves ensuring that workers are fairly compensated for their increased productivity, ultimately contributing to a more equitable and sustainable economic system. It is essential to strike a balance between increasing wages and maintaining productivity to ensure the long-term sustainability of businesses and the economy as a whole. Simply raising wages without a corresponding increase in productivity or efficiency could lead to higher labor costs for businesses, potentially impacting profitability and job opportunities. Thus, addressing the wage-productivity paradox requires a comprehensive approach that considers various economic factors, labor market dynamics, and policy measures to achieve a sustainable and equitable outcome.

## Uncovering Productivity-Wage Gap

Analysis of wage-labor productivity gap is carried out by expressing wage per worker and labor productivity in the form of index (see Box Article 2).Our observation indicates that the expansion in the wage rates (CE/Emp, wage per worker) is higher than the rise in the labor productivity (value added per worker). The annual growth rate of wages is higher than labor productivity at an annual growth rate of 2.9% from 2010 to 2020, while the growth of labor productivity increases only at 1.6% annually (see Figure 2). Thus, the average wage rate of workers is growing faster than the labor productivity. This pattern is a normal phenomenon in most economies. For example, in the United Kingdom (UK) the gap between wages and labor productivity is higher than in Malaysia. The average increment of wages in the UK is about 76x higher from its base year compared to the increment of labor productivity which only increase at about 22x higher from it's base year on average. Thus, our average wage rate growth is considerably lower compared to the benchmarking country.

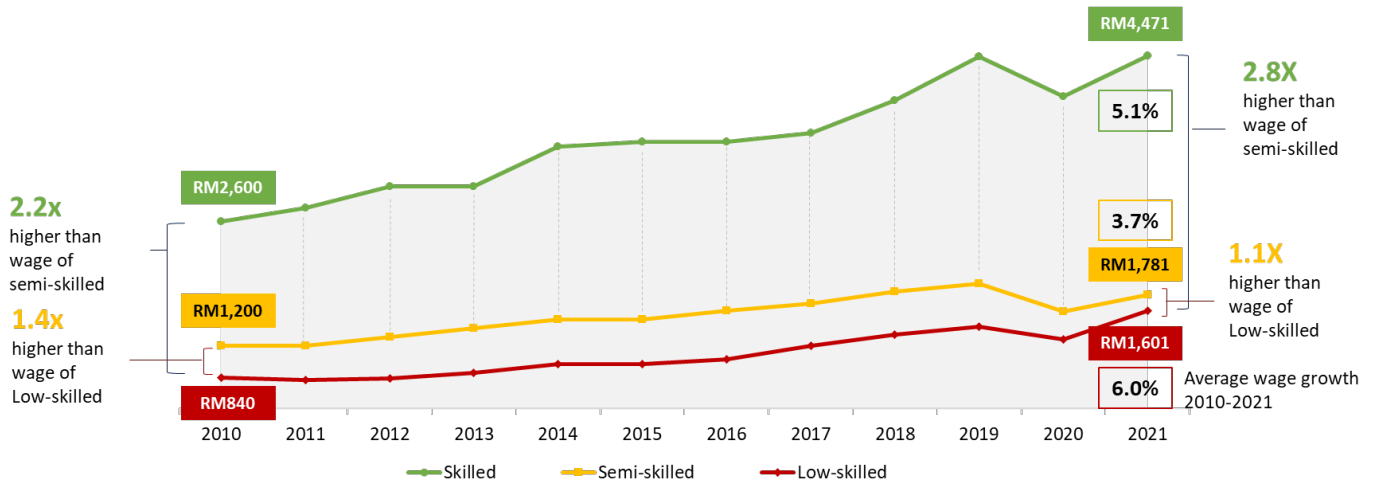
Figure 2
**Labor productivity and wage gap, 2010-2020 (index 2010 = 100)**


Note: CE/GDP represent the share of labor compensation to GDP while CE/Emp denotes the labor compensation per worker. Indicator of CE/Emp can be interpreted as the wage rate per worker.
Source: Calculated based on the data Department of Statistics Malaysia (2021). All the data are expressed in 2015 constant price.

Although wages show a relatively higher growth, it is primarily driven by the growth of high-income group earners in the workforce. Skilled workers received a higher share of wages than lower skilled workers. From the data of salaries and wages survey, the average wages of skilled workers are 2.8x higher than the semi-skilled workers in 2021. The gap is larger than that of in 2010, indicating the situation of the wage-increasing gap. The semi-skilled workers' wage is 1.4x higher than the low-skilled workers in 2010 and 1.1x higher than the low-skilled workers in 2021. This is an alarming situation because the wage growth of semi-skilled is lower than the low-skilled, contributing a reduction in the wage gap. For the record, the size of semi-skilled workers is 63% while that of low-skilled is 13%.

This concludes that the increase in wages growth is mainly driven by the increase in the growth of higher income group and skilled workers. To decrease wage inequality, a specific policy is needed to ensure the increase in wages can benefit all type of workers in many incomes group. Without proper intervention, the growth between wages and productivity will be decoupled. Looking at the current growth of labor compensation which is 1.8x faster than labor productivity causes the gap between wages and labor productivity to widen. The decoupling of wages and productivity are also due to the increase in wage inequality. Therefore, a specific intervention is needed to ensure that the growth of labor productivity and wages per worker grows in tandem.

Figure 3
**Average monthly wage by skill categories 2010-2021**




Source: Illustrated based on the data from Department of Statistics Malaysia (2022b)

**Box Article 2**

**Expressing Indicators in Index Form**

The productivity-compensation gap is defined as the degree of divergence between labor productivity growth rate and compensation of employee growth rate throughout a determined time-series period. In this analysis, data from 2010 to 2020 is used for both indicators that retrieved from the Department of Statistic Malaysia (DOSM). An index is calculated by taking 2010 as the base year (2010=100), which is also represented as follows:

Labor productivity growth index:

$(LP_t/LP_o) \times 100 = [(VA_t/Emp_t)/(VA_o/Emp_o)] \times 100$

*LP* denotes labor productivity, *VA* indicates value added, *Emp* stands for the total employment, and subscripts *t* and *o* represent the beginning year and ending year.

Labor compensation growth index

$(CE_t/CE_o) \times 100 = [(ce_t/Employees_t)/(ce_o/Employees_o)] \times 100$

*CE* is labor compensation per employee, *ce* represents total labor compensation, and subscripts *t* and *o* represent beginning year and ending year.

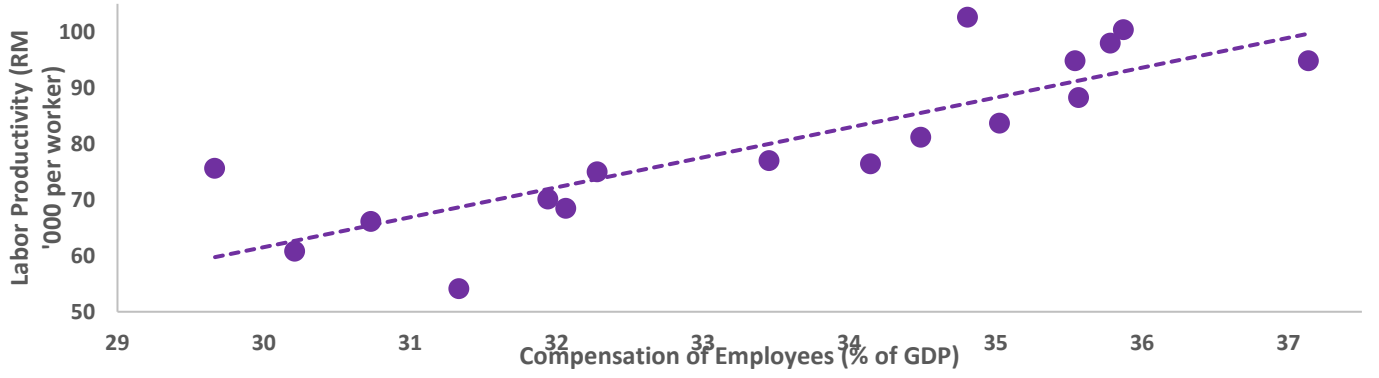
All data are expressed in real terms after the price adjustment. The higher the value of the growth indexes, the higher the growth rates. The difference in the growth rates of both variables will show the gap between labor productivity and labor compensation. The labor compensation is expressed as labor compensation per employee which implies the average "wage rate".

Our perspective in Figure 3 suggests that labor productivity growth is predominantly influenced by higher-income workers. Unfortunately, due to data limitations, direct validation of this viewpoint is constrained. To effectively measure and confirm the relationship between wages and labor productivity within distinct skill categories, we propose utilizing the KLEMS database. Compiling and utilizing this database would substantially enhance our understanding of productivity across specific worker categories.

However, when examining cross-country evidence, our viewpoint finds support, as demonstrated in Figure 4. This evidence reveals a positive correlation between labor productivity and wages, indicating that wages tend to increase in parallel with labor productivity. Consequently, significant wage growth among semi-skilled workers can potentially drive shifts in labor productivity.

Figure 4

**Cross-countries pattern between labor productivity and wage**




Note: Technology denotes research and development expenditure (% to GDP). Shadow economy measures were estimated using Computable General Equilibrium approach (Elgin et al., 2021).
Source: World Development Indicator (2022), Department of Statistics Malaysia (2020 and 2022b)

## Recommendations

There are two main recommendations from this Policy Brief. The first recommendation is related to mitigating the wage-productivity paradox by proposing a progressive wage model to uplift middle-income workers (particularly the semi-skilled). The second recommendation is to strengthen the productivity measures by developing KLEMS database.

**A progressive wage model.** Increasing wages is undoubtedly essential for improving living standards, reducing income inequality, and fostering economic growth. However, it is crucial to acknowledge that implementing wage increases without a carefully planned and balanced wage policy can lead to unintended negative outcomes. A poorly structured wage policy may potentially result in unintended consequences, such as inflationary pressures, reduced business competitiveness, and potential job losses. Thus, it is vital to approach wage adjustments with a well-thought-out strategy to ensure positive and sustainable impacts on both workers and the overall economy.

The progressive wage model does not contribute to inflation and job losses due to **its gradual and targeted approach** in raising wages for low-income workers. By linking wage increases to productivity improvements, businesses are incentivized to invest in efficiency and training, offsetting labor cost hikes. Moreover, sector-specific implementation considers unique industry challenges, minimizing adverse effects. The model's emphasis on reducing income inequality fosters social stability and increased purchasing power, stimulating economic growth. As a result, the progressive wage model promotes a positive impact on the workforce, fostering higher job satisfaction and lower turnover rates, ultimately contributing to overall economic well-being without significant inflationary pressures or job losses.

**KLEMS database for a better productivity measure.** The KLEMS database provides valuable insights into productivity measures, extending beyond labor productivity to encompass capital, energy, materials, and other inputs. This comprehensive approach allows for a deeper understanding of the complexities involved in production processes. By examining the relationships between different factors of production, such as labor, capital, and energy, policymakers and economists gain critical insights into the efficiency and effectiveness of economic activities. Understanding these intricacies is particularly crucial when assessing the direct relation to wages.

With access to data on various input productivity measures, researchers can identify potential bottlenecks or areas of inefficiency in the production chain. Optimizing capital, energy, and material productivity alongside labor productivity can lead to more sustainable and cost-effective production practices. By considering the interplay between these productivity factors, it becomes possible to devise well-balanced wage policies that align with overall economic objectives. Moreover, understanding the interactions between input productivity and wages can facilitate evidence-based decision-making, fostering equitable economic growth and improved living standards for workers. The KLEMS database, with its multifaceted productivity measures, plays a crucial role in enhancing our comprehension of these dynamics and informs policy formulation for achieving sustainable and inclusive economic development.

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**EU-ERA Policy Brief**

EU-ERA Policy Brief offers a short note with combined analysis and policy recommendations in addressing developmental issues that are directly and indirectly affect the labor market in Malaysia. This policy brief aims to generate a forward-looking and proactive discussion among policymakers, researchers and stakeholders in identifying emerging trends, challenges, and opportunities in the economy. The orientation is toward the real-world policy challenges and opportunities, with an emphasis on providing practical recommendations that can help guide decision-making.



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www.euera.org +603-8091 5465 enquiry@euera.org

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