

# Economic Watch

## Peru

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Economic Analysis

Peru  
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## The minimum wage and informality

- **The minimum wage in Peru has been growing faster than productivity since the start of the last decade**

If it is now increased by a further 25%, the minimum wage would be among highest in the region (compared with average wages).

- **In this context, raising the minimum wage could prevent job creation and increase informality**

Increases in the minimum wage above productivity gains reduce the chance of formal employment for low-income workers, in particular young people.

- **Any increases in the minimum wage should be part of a policy of extending the inclusion in social protection mechanisms**

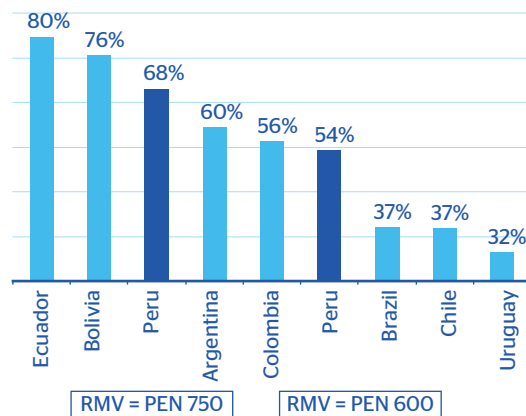
A high minimum wage makes it more difficult for low-income workers to have access to employment benefits such as health insurance, unemployment protection and pensions.

### Is it high the minimum wage in Peru?

One way of assessing the level of the minimum wage is by comparing it with other countries in the region. This comparison should be made by measuring the minimum wage as a proportion of GDP per capita, so that it takes into account the heterogeneity of income and productivity levels in the countries.

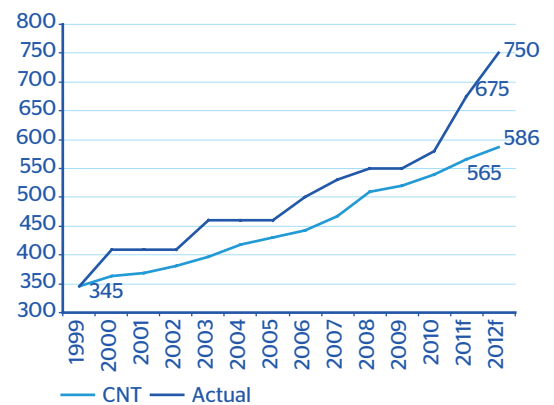
Chart 1 shows that the minimum wage in July (PEN 600) was in the medium range in South America. It was above that of Brazil, Chile and Uruguay and similar to that of Colombia, which are all countries with a higher level of global competitiveness than ours. However, if the announced increase of the minimum wage to PEN 750 (a rise of 25%) took place, we would be among the countries with the highest ratios of minimum wage over GDP per capita in South America, together with Ecuador and Bolivia, which are countries that have a lower level of global competitiveness<sup>12</sup>.

Chart 1  
Minimum wage in South America (% of GDP per capita)



Source: IMF, Bloomberg and others. Prepared by: BBVA Research Peru

Chart 2  
Minimum wage (nominal PEN)



Source: INEI. Prepared by: BBVA Research Peru

Another way of assessing the level of the minimum wage is by comparing its level with that required to remain in line with productivity increases. To do so, we have used the formula proposed by the National Labor Council (CNT)<sup>3</sup>:

$$\text{Var\%}(RMV) = \pi + \alpha \times \text{Var\%}q$$

*% Change (RMV):* Percentage change in the minimum wage.

*π:* Accumulated inflation.

*α:* Adjustment factor (average productivity proportion in last five years in retail and services sectors with regard to average productivity in manufacturing and construction).

*% Change q:* Percentual change in rolling average over the preceding five years worker productivity in the non-primary sector.

According to this formula, the minimum wage should be adjusted so that workers who receive it do not lose their purchasing power over time, and also obtain gains as their productivity increases. Chart 2 shows how the minimum wage would have moved since the middle of the last decade if it had been adjusted in this way<sup>4</sup>. On our calculations, the minimum wage in July was 6% above that resulting from the CNT proposal<sup>5</sup>. However, if the government proposal were to be implemented in January 2012, the minimum wage would be nearly 30% higher than if adjusted

1: In the case of Peru, we used the case of the small enterprise employment regime, under which 13 monthly salaries per year are paid: one for each month and 2 bonuses of half the monthly wage packet each. If we used a more restricted measure of productivity, such as GDP per worker, the results would show that the minimum wage ratio in Peru was higher than in Ecuador and Bolivia.

2: See WEF (2010).

3: CNT is an institution made up of trade union organizations, employers' associations and representatives from the Ministry of Labor. For details of their proposal, see CNT (2006).

4: The simulation has made the following assumptions: i) the increased average productivity of labor in the non-primary sector is 2.3% per year, corresponding to the average for the period 2001-2009; ii) the term  $\alpha$  is equal to 0.72 which is the average calculated in CNT (2006) for the period 1998-2002; and iii) the inflation rate in 2011 and 2012 is 3% and 2% respectively.

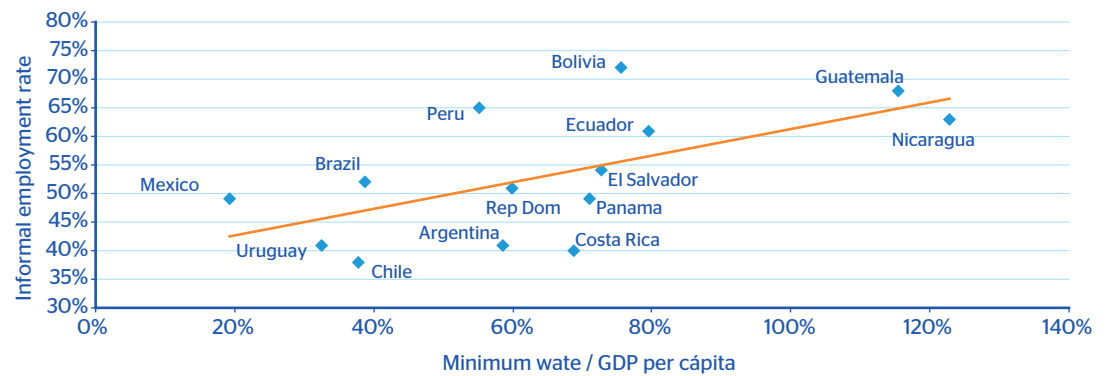
5: The RMV is the minimum wage in Peru.

to productivity increases. The average two-yearly increase arising from the CNT formula would in fact be around 9%, in line with the actual rise between last December and February, but well under the recent 25% decreed by the government.

**Empirical evidence suggests that a high minimum wage encourages informality**

Chart 3 shows a simple relationship between the ratio of the minimum wage over per capita GDP and the rate of informality in various Latin American countries<sup>6</sup>. The data show that on average the countries with the highest levels of minimum wage over per capita GDP also register the highest rates of informality.

Chart 3  
**Minimum wage and informality in Latin America**



Source: OECD, IMF and others. Prepared by: BBVA Research Peru

The relationship between minimum wage and informality has been empirically tested for the case of Peru. Dell Valle (2009) found that an increase in the minimum wage makes it less likely that workers whose income is below twice the minimum wage will keep their jobs, while making it more likely that workers with income under 1.2 times the minimum wage will remain in informal employment. In a more recent study, Palomino (2011) confirms these negative effects and in addition finds that the increases in the minimum wage do not have effects on workers' incomes. He therefore rules out its use as a redistributive policy. This effect would be particularly important for younger workers, since they are most affected by informality<sup>7</sup>.

The underlying problem is that in the case of unskilled workers, the minimum wage could exceed their level of productivity. In this situation, an increase in the minimum wage would mean that small companies, which are those that employ these workers most often, would have the choice of either laying off workers or recruiting them informally. If they chose the route of informality, employers would be avoiding the payment of the minimum wage and other employment benefits, while maintaining the workers employed, and also preventing their companies from reducing or halting production.

For example, the productivity of informal workers in Peru has been estimated at PEN 450 per month, which is equivalent to around 60% of the current level of the minimum wage<sup>8</sup>. In other words, the value of the production generated by these workers is lower than the minimum payment obliged by law. This means there is a strong incentive to hire workers informally.

The gap between productivity and the minimum wage is one of the factors encouraging the extensive rate of informality in Peru, which according to various estimates is above 60%<sup>9</sup>. As a result, the current level of the minimum wage would be encouraging the exclusion of low-income workers from benefits such as holidays, compensation for time in employment (CTS, an unemployment benefit scheme), health insurance and the generation of pension savings, thus increasing their exposure to the risks of unemployment and illness.

6: Corresponds to the rates under the productive definition of informality in OECD (2008). This definition includes unskilled self-employed workers, workers in small private firms of fewer than five employees, and workers receiving zero-income.  
 7: According to Velazco (2011), a third of informal workers in Peru are aged between 17 and 29. Barco and Vargas (2010) also find there is a positive link between age and formal employment, so that it is more likely that younger workers enter the informal sector.  
 8: Rodríguez and Higa (2009) estimate that informal employment contributes only 9.9% of GDP and that the average productivity of informal workers in constant 1994 PEN was PEN 2,776 between 2004 and 2008. At current PEN and in monthly terms, this average productivity amounts to PEN 445. We have used the small enterprise employment regime to compare this against the minimum wage.  
 9: See, for example, CIES (2011), Barco and Vargas (2010) and Rodríguez and Higa (2010).

## Conclusions

Currently, Peru has a minimum wage that is significantly high in relation to the country's average productivity, and in particular compared with the productivity of the informal worker. It has also been increasing at a slightly higher rate than productivity gains. However, an increase of 25% would put us among the countries with the highest minimum wages in Latin America in terms of average income.

This high level of minimum wage would heighten the problem of informality. Empirical evidence for Latin America and Peru points to a positive association between minimum wage levels and informality. This means that a high minimum wage in relation to productivity would encourage the exclusion of workers with lowest incomes from the benefits associated with formal employment.

Setting the minimum wage level should therefore be part of the overall goal of extending social protection measures for workers, such as health insurance, unemployment protection and retirement pensions. One way of preventing greater distortions in the labor market is to link increases in the minimum wage to productivity gains.

## References

- Barco, Daniel and Paola Vargas (2010). *El perfil del trabajador informal y el retorno de la educación*. Working Paper No. 2010-004. Central Reserve Bank of Peru. Lima.
- Del Valle, Marielle (2009). *Impacto del ajuste de la Remuneración Mínima Vital sobre el empleo y la informalidad*. In Estudios Económicos N° 16. Central Reserve Bank of Peru. Lima.
- OECD (2008). *Latin America Economic Outlook 2009: Overview*. Development Center of the Organization for Economic Cooperation and Development.
- Palomino, Jesús (2011). *Tesis de efectos del incremento de la Remuneración Mínima Vital sobre el empleo y los ingresos laborales*. Working Paper No. 313. Pontifical Catholic University of Peru. Lima.
- Rodríguez, José and Minoru Higa (2010). *Informalidad, Empleo y Productividad en el Perú*. Working Paper No. 282. Pontifical Catholic University of Peru. Lima.
- Velazco, Tatiana (2011). *Empleo informal y políticas de protección social en el Perú. Retos y oportunidades para el nuevo gobierno*. Consorcio de Investigación Económica y Social (CIES) and Women in Informal Employment: Globalizing and Organizing (WIEGO). Lima.
- WEF (2010). *The Global Competitiveness Report 2010-2011*. World Economic Forum. Geneva.

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