BanRep Blog: Minimum wage and labor flows in formal employment

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A recent document of the journal *Ensayos sobre Política Económica* (ESPE) from *Banco de la República* (the Central Bank of Colombia) contains the results of multiple analyses of the effect of the minimum wage on the labor market, income distribution, public finances, prices, and the economic activity in the country. A section of the document discusses the results of the work of Luz Adriana Flórez, Didier Hermida, and Leonardo Morales, researchers at the Central Bank, on the effects of changes in the minimum wage on the creation and destruction of formal employment.

The study is based on the comparison of formal worker flows in firms that face different changes in their labor costs when the minimum wage changes. These costs are known in the literature as compliance costs (CC) and differ across firms depending on their payroll structure. The results come from statistical estimates based on the universe of private firms that pay social security contributions to their employees in the Integrated Record of Contributions to Social Security (PILA in Spanish) platform between 2009 and 2019.

The main results shared by the authors are shown in Table 1. This table shows the statistical relationship of real changes in compliance costs (CC), associated with real increases in the minimum wage of formal firms. Job destruction and job creation flows are considered, which correspond to the negative or positive change in the number of jobs reported by each firm, respectively. Alternatively, they also study separations and hires, which correspond to the number of workers leaving or joining each firm, respectively, regardless of the change in the total payroll size (for example, a firm that hires and fires a worker, has a separation and a hire, but its job creation or destruction is null). Finally, they study the *churning*, which measures the excess turnover of workers with respect to jobs.1

As can be observed in the table, a 1.0% real increase in the cost of compliance in the period under analysis produces, over the course of the year, an increase of 0.89pp in the rate of job destruction and a reduction of 1.12pp in the rate of job creation. These effects, translated into a 1.0% increase in the real minimum wage, imply an increase in job destruction of 0.44pp and a reduction in job creation of 0.56pp. In terms of jobs, this effect implies an average job destruction of 20,000 jobs and a reduction in job creation of close to 26,000 jobs, for an average annual formal employment loss of 46,000 jobs. For hiring and separations, which measure the entry and exit of workers from firms without necessarily implying the creation and destruction of new jobs present, similar results. A 1.0% increase in the real minimum wage decreases new hires by 22,000 and generates 24,000 separations.

Table 1. Effect on formal labor market flows of increases in the minimum wage (MW) and compliance costs (CC)

Notes: significance levels: *** p<0,01, ** p<0,05, * p<0,1. Standard errors in parentheses clustered at the firm level. Annual coefficients and standard errors are calculated using the delta method from a quarterly estimate; these coefficients represent the sum of the results in the four quarters of the year.
Source: Flórez, Hermida and Morales (2022).

DestructionCreationSeparationsHiring*Churning*Employment % variation**A. Annual effect of a 1.0% real increase in the CC**0.89***
(0.04)–1.12***
(0.04)1.06***

(0.04)–0.95***
(0.04)0.33***
(0.04)–2.01***
(0.05)**B. Annual effect of a 1.0% real increase in the SM**0.44***
(0.02)–0.56***
(0.02)0.52***
(0.02)–0.47***
(0.02)0.17***
(0.02)–1.00***
(0.03)**C. Number of Jobs**20,414.6***
(941.51)–25,713.6***
(862.27)24,258.1***
(994.80)–21,870.1***
(962.21)7,687.1***
(805.20)46,128.2***
(1,205.39)**Observations**3,070,2543,070,2543,070,2543,070,2543,070,2543,070,254**Number of firms**
155,065155,066155,067155,068155,069155,070

In addition, the authors explore the effects of changes in the real minimum wage, depending on firm´s characteristics such as size and age. For example, the authors find that, as a result of the increase in the real minimum wage, the smallest firms have the largest proportional drops in employment compared to the largest firms (more than 250 employees). Similarly, younger firms (less than four years old) are the most affected by the increase in the minimum wage. In general, larger and older firms have a different adjustment mechanism to increases in the real minimum wage. In particular, when there is an increase in the real minimum wage, these firms respond with an increase in labor turnover (increased churning) rather than a reduction of jobs.

It is important to clarify that this analysis is limited to the study of formal employment, as it is based on social security data (PILA). The minimum wage has broader effects on the labor market, as well as important effects on fiscal accounts and economic activity, which are explored in other sections of the previously mentioned ESPE document.

1 *Churning* rate corresponds, more precisely, to the sum of separations and hires net of payroll changes, divided by the number of jobs per firm. A high churning rate implies that there is a high employee turnover, given a payroll size.

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