Comments

Roberto Rigobon: This paper studies the effect of minimum wages on the distribution of wages and on overall unemployment. This is an extremely important question, and one that has barely been analyzed in emerging markets. Brazil's minimum wages provide a unique opportunity to study this question because changes in minimum wages have been large and frequent.

The paper mainly consists of two parts: a study of the impact of minimum wages on the wage distribution and an analysis of the implications of minimum wages for unemployment.

To study the influence of minimum wages on the wage distribution, Lemos examines different measures of the tightness of minimum wages. The specification that she uses is the following:

$$\Delta \ln W_{rt} = \alpha^w + \beta^w \Delta \ln MW_{rt} + \gamma^w \pi_{rt-1} + \delta^w \Delta u_{rt-1} + \lambda^w \Delta \mathbf{X}_{rt} + f^w_r + f^w_t + \varepsilon^w_{rt}.$$

All her results are well summarized in table 1.

To study the impact on employment, Lemos uses the same measures and evaluates the impact of its changes on total employment, total hours, and jobs. This is done to appraise the different margins in which minimum wages can work. For instance, an increase in the minimum wage could produce a decline in the hours worked while keeping the same number of jobs, or it could reduce the number of jobs while keeping the hours per worker intact. Her specification is

$$\Delta \ln N_{rt} = \alpha^n + \beta^n \Delta \ln MW_t + \gamma^n \pi_{rt-1} + \lambda^n \Delta \mathbf{X}_{rt} + \sum_{l=1}^{24} \rho^n_l \Delta \ln N_{rt-l} + f^n_r + f^n_t + \varepsilon^n_{rt}.$$

The results for this specification for the different measures of minimum wages and employment are presented in table 3.

Her main findings are threefold. First, the wage distribution experiences significant compression regardless of the measures of minimum wage tightness used in the specification. Second, employment measures are almost unaffected—and if they are at all, the effects are very small. Third, the preferred measures for evaluating the impact of the minimum wage are the real fraction of workers affected and the spike.

I organize my comments along two lines. First, although I have no problems in principle with the spike variable, I have severe doubts that the real fraction of workers affected should be used at all. Second, I examine what type of robustness tests should be performed to ensure that the results are not driven by unobservable variables.

The objective of the fraction of workers affected variable is to measure the proportion of workers for whom the minimum wage wasn't binding at time $t-1$, but is binding at time t. This is measured as the mass of workers who have a wage that satisfies equation 1:

$$0.98 * \mathrm{MW}_{t-1} < w_{t-1} < 1.02 * MW_t, \tag{1}$$

where MW is the nominal minimum wage and w is the wage. The idea of the real fraction of workers affected is to use real wages instead of nominal ones:

$$0.98 * RMW_{t-1} < RW_{t-1} < 1.02 * RMW_t. \tag{2}$$

Equation 1 measures the proportion of workers who have wages close to the minimum wage and who are likely to find it binding. Therefore, this is a clear measure of how tight the minimum wage is. This interpretation does not apply to real minimum wages, however. For example, movements in the inflation rate will imply changes in the real minimum wage that are not necessarily associated with changes in the tightening of the minimum wage. Moreover, the presence of inflation changes the interpretation of the results. If inflation has different effects on the nominal wages of individuals along the distribution, then changes in real wages could be the result of these differences and not the outcome of the tightening of the minimum wage. In particular, if inflation increases the nominal wages of individuals in the bottom of the distribution more than those in the top of the distribution, then the compression of the wage distribution could be explained by the omitted variable and not by the tightening of the

constraint—especially if the relation is nonlinear. If employment depends negatively in real wages, then increases in inflation together with increases in minimum wages will make the average effect on employment small, and possibly with the wrong sign. Lemos understands this inconvenience, and she introduces inflation on the right-hand side of the specification. Her specification is insufficient, however, if the relation between wages and inflation is not linear.

One way to test for this is to compare the level and first-difference estimates, for instance by estimating the following equations:

$$\ln W_{rt} = \alpha^w + \beta^w \ln MW_{rt} + \gamma^w p_{rt-1} + \delta^w u_{rt-1} + \lambda^w \mathbf{X}_{rt} + f^w_r + f^w_t + \varepsilon^w_{rt}$$

and

$$\Delta \ln W_{rt} = \alpha^w + \beta^w \Delta \ln MW_{rt} + \gamma^w \pi_{rt-1} + \delta^w \Delta u_{rt-1} + \lambda^w \Delta \mathbf{X}_{rt} + f^w_r + f^w_t + \varepsilon^w_{rt}.$$

If both equations are valid, then the estimates of these two regressions should be statistically the same. If there is a specification error, then these estimates are statistically different from zero. In other words, the ordinary least squares (OLS) coefficients are statistically different if the fixed effects in the level regression (the first one) are correlated with the residual, if the right-hand side variables are correlated with the residuals in both equations, or if the model is nonlinear.

For example, if this exercise is performed for the minimum wage and the real fraction of workers affected, the result is a rejection of the null hypothesis that the estimates are the same across both specifications. One alternative is that the decile fixed effects are correlated with the residuals, and this misspecification is causing the rejection. However, I do not see why this would be a more valid possibility than the fact that inflation has a nonlinear effect on nominal wages at the different deciles of the distribution. The paper would benefit if Lemos included a discussion of the robustness of the results and presented a series of specification tests that would make a more convincing case for using the real fraction of workers affected. Possibilities include first differences versus the level regression, between versus within regressions, and long versus short differences (to determine the presence of an error-in-variables problem).

Finally, the fact that the results on wage compression are much weaker when the spike or the other measures of the minimum wage are used illustrates that the strong results found using the real fraction of workers affected may be driven by imperfectly controlling for inflation. While I am sympathetic to Lemos's results, and I believe they will survive a battery of robustness tests, I also consider that the real fraction of workers affected should not be the preferred variable, especially in Brazil where the minimum wage is part of the anti-inflationary policy.

Kevin Lang: A reasonable, although possibly controversial, summary of the research on the effects of minimum wages in the United States is that they compress the wage distribution, have only a small disemployment effect, may reduce income inequality a little, and may redistribute employment among groups, possibly toward young workers in at least some industries. These results are undoubtedly time and location specific. There is some evidence that the disemployment effect has declined over time and some evidence that when the minimum wage is high relative to prevailing wages, it reduces employment more substantially, although both results have been questioned.

Against this background, Sara Lemos makes three important contributions. First, she shows the sensitivity of the results to the choice of different measures of the minimum wage. Second, she measures the wage and employment effects of minimum wage laws in a very different institutional setting while meeting current standards for identification. Third, she distinguishes between the effect of the minimum wage on hours worked and its effect on employment. Let me take these in turn.

If one ignores the other controls in the equations, the basic estimating equation is

$$\text{OUTCOME} = a + b\,\text{MWPROXY} + u. \tag{1}$$

Since the various measures of the minimum wage do not share a common metric, Lemos makes them comparable by regressing the minimum wage proxy on the real minimum wage:

$$\text{MWPROXY} = c + d\,\text{REALMW} + e. \tag{2}$$

The reported coefficient in the tables is $b*d$.

I want to suggest a somewhat different way of interpreting these results. Think of the first equation as the ordinary least squares (OLS) estimate of

the effect of the minimum wage proxy on the outcome. Think of the second equation as the first stage in two-stage estimation of the effect of the proxy on the outcome, using the real minimum wage as an instrument. In the case in which the minimum wage proxy is the real minimum wage, the first equation gives us the reduced form of this system, which I will write as

$$\text{OUTCOME} = f + g\ \text{REALMW} + v. \tag{3}$$

When the system is just identified,

$$g_{\text{OLS}} = b_{\text{IV}} * d_{\text{OLS}}. \tag{4}$$

Compare this with

$$g_m = b_{\text{OLS}} * d_{\text{OLS}}, \tag{5}$$

where g_m is the coefficient reported in the tables. Comparing equations 4 and 5 shows that when g_m is bigger than g_{OLS}, the OLS regression of the outcome on the proxy provides a bigger coefficient estimate than if the real minimum wage is used as an instrument for the proxy.

The estimated effect of the real minimum wage on wages is much more positive than the estimated effect of the other minimum wage proxies in every case. In other words, $g_m > g_{\text{OLS}}$ and $b_{\text{OLS}} > b_{\text{IV}}$. Similarly, the estimated effect of the real minimum wage on total employment and the employment rate is much more negative using the real minimum wage than using the other proxies. No such consistent pattern arises with hours worked.

This comparison shows that if both the proxy and real minimum wage are uncorrelated with the error term, then OLS and instrumental variables (IV) estimations should give the same answer. The fact that they do not establishes that at least one and perhaps both estimators are biased. At the very least, this exercise establishes econometrically that not all of the proxies should be used.

Table 1 provides some clues as to which of the proxies is most suitable. It shows that the real minimum wage is associated with approximately equal and large changes in wages at all points in the distribution. This is implausible. Moreover, since the estimate is much more positive when the real minimum wage is used, the IV is biased upward relative to the OLS estimators. I would not be surprised if the real minimum wage and the error in the wage equation were positively correlated. Any error in the price

index will have the same effect on real wages and the real minimum wage. This, of course, does not demonstrate that the results are biased using any of the other indicators, but it points to the need for caution.

The approach in table 2 is much more compelling. It is comparable to the approach used in many recent papers in which authors examine a single change in the minimum wage. Those papers use some measure of how binding the minimum wage increase is and regress the outcome variable (for example, the change in employment) on that measure. The expectation under standard theory is that the employment change will be more negative (or less positive) in localities where the minimum is more binding. If, instead, the minimum wage fell, the employment change should be more positive (or less negative) in localities where the minimum wage is more binding. When the minimum wage does not change, there is no reason to expect the employment change to be greater or smaller when the minimum wage is more binding.

When one simultaneously examines periods of increase and decrease in the minimum wage, then the parallel to the modern approach is to regress the outcome measure (in this case, the wage change) on the measure of how binding the minimum wage is (in this case, the real fraction of workers affected), *interacted with the change in the minimum wage*. The analysis should thus focus on the column that shows the interaction between the real fraction of workers affected and the change in the minimum wage. I do not focus on the direct effect of the real minimum wage, which is biased, or on the direct effect of the measure of how binding the minimum wage is, for which there is no theoretical prediction.

The results indicate that an increase in the minimum wage raises wages more when the minimum wage is more binding (that is, the real fraction of workers affected is greater), which is what I would expect, and that this effect is greater at lower percentiles of the wage distribution, which is also what I would expect. The fact that a similar pattern arises for the coefficients on the real fraction of workers affected (that is, when the change in the minimum wage is zero) is somewhat disturbing. As noted, there is no obvious reason for the wage distribution to be compressing more when the minimum wage is more binding if the minimum wage is not changing.

All told, the paper makes a convincing case that the minimum wage in Brazil significantly compresses the wage distribution and that the ripple effects probably extend further up the wage distribution than in the United States. This fits the fact that the minimum wage is often a benchmark wage

for indexing in Brazil. Armed with this knowledge, I now turn to the employment effects.

I will not present the arguments for focusing on table 4 rather than table 3, which are similar to those for preferring table 2 to table 1—although the evidence for bias in table 3 is admittedly weaker than the evidence for table 1. This is largely because the estimates of the employment coefficients using the real minimum wage are very imprecise.

As with the wage effects, I focus on the interaction term in table 4. The results are similar to what I have claimed is the evidence for the United States. The effect on the employment rate is small and only significant at the 0.1 level. We can exclude an elasticity of employment with respect to the minimum wage of –0.1, a traditional estimate of the U.S. elasticity, but not smaller elasticities consistent with more recent evidence.

This is the employment effect for all workers, many of whom are not affected by the minimum wage. Based on table 2, roughly half of Brazilian workers see a wage increase as a result of a minimum wage increase. For most of these workers, the increase is smaller than the minimum wage increase, but it appears that roughly half of workers get an increase averaging about 70 percent of the minimum wage increase. Using standard estimates of the elasticity of demand for labor, a 10 percent increase in the real minimum wage should generate an employment reduction on the order of one to two percent, which is much higher than the paper estimates. Thus this paper extends the U.S. finding that employment effects are smaller than implied by the simple labor demand model to a very different institutional setting.

The results show that the minimum wage law may have a modest effect on hours worked. The coefficient falls just short of significant at the 0.1 level. The total employment effect is significant at the 0.1 level and is noticeably larger than the effect on the employment rate. Because they are so marginally significant, I do not put too much faith in these results. If they hold up in other studies, however, they may help us better understand the mechanisms through which minimum wage laws affect the labor market.

My interpretation of the results is clearly somewhat different from the interpretation in the paper. This is, in part, because I believe that Sara Lemos has been more effective than she gives herself credit for in casting doubt on the range of minimum wage indicators by showing differences in the results based on the range of indicators. It is also, in part, because

I believe that a priori the interaction specification is the correct one and that the coefficient on which to focus is the interaction term. In any event, she has made the information available so that others can draw their own conclusions, making her contribution particularly valuable.

Finally, the paper does not seek to address the issue of winners and losers. We know that, as in the United States, the minimum wage compresses the wage distribution and that the overall employment effects are small. It is important to learn whether the minimum wage causes significant displacement and, if so, whether the workers who gain jobs are from more or less favored circumstances than those they displace.

References

Akerlof, George A. 1982. "Labor Contracts as Partial Gift Exchange." *Quarterly Journal of Economics* 97(4): 543–69.

———. 1984. "Gift Exchange and Efficiency-Wage Theory: Four Views." *American Economic Review* 74(2): 79–83.

Amadeo, Edward, José Márcio Camargo, and Gustavo Gonzaga. 1995. "Salário mínimo e informalidade." *Economia Capital e Trabalho* 3(1): 2–4.

Angel-Urdinola, Diego F. 2002. "Employment Effects of the Minimum Wage Can Affect Wage Inequality: The Case of Colombia." Georgetown University.

Barzel, Yoram. 1973. "The Determination of Daily Hours and Wages." *Quarterly Journal of Economics* 87(2): 220–38.

Bell, Linda A. 1997. "The Impact of Minimum Wages in Mexico and Colombia." *Journal of Labor Economics* 15(3): S102–35.

Brown, Charles. 1999. "Minimum Wages, Employment, and the Distribution of Income." In *Handbook of Labor Economics,* vol. 3B, edited by Orley Ashenfelter and David Card, pp. 2101–63. Amsterdam: North-Holland.

Brown, Charles, Curtis Gilroy, and Andrew Kohen. 1982. "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature* 20(2): 487–528.

Burkhauser, Richard V., Kenneth A. Couch, and David C. Wittenburg. 2000. "A Reassessment of the New Economics of the Minimum Wage Literature with Monthly Data from the Current Population Survey." *Journal of Labor Economics* 18(4): 653–80.

Camargo, José Márcio. 1984. "Minimum Wage in Brazil Theory, Policy and Empirical Evidence." Working paper 67. Pontificia Universidad Católica do Rio de Janeiro, Department of Economics.

Card, David. 1992. "Do Minimum Wages Reduce Employment? A Case Study of California, 1987–89." *Industrial and Labor Relations Review* 46(1): 38–54.

Card, David, and Alan B. Krueger. 1995. *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton University Press.

———. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply." *American Economic Review* 90(5): 1397–420.

Carneiro, Francisco G. 2000. "The Impact of Minimum Wages on Wages, Employment and Informality in Brazil." Catholic University of Brazil.

———. 2002. "Uma resenha empirica sobre os efeitos do salário mínimo no mercado de trabalho brasileiro." *Brazil Jobs Report,* vol. 2. Washington: World Bank.

Carneiro, Francisco G., and João R. Faria. 1998. "O salário mínimo e os outros salários no Brasil." *Anais do XXVI Encontro Nacional de Economia,* 1169–80. Vitória, Brazil.

Carneiro, Francisco G., and Andrew Henley. 2001. "Modelling Formal versus Informal Employment and Earnings: Microeconometric Evidence for Brazil." Research paper 2001–15. University of Wales at Aberystwyth, School of Management and Business. Also available in *Anais do XXIX Encontro Nacional de Economia*. Salvador, Brazil.

Castillo-Freeman, Alida J., and Richard B. Freeman. 1992. "When the Minimum Wage Really Bites: The Effect of the U.S.-Level Minimum on Puerto Rico." In *Immigration and the Work Force: Economic Consequences for the United States and Source Areas,* edited by George J. Borjas, and Richard B. Freeman, pp. 177–211. University of Chicago Press for National Bureau of Economic Research.

Corbo, Vittorio. 1981. "The Impact of Minimum Wages on Industrial Employment in Chile." In *The Economics of Legal Minimum Wages,* edited by Simon Rottenberg, pp. 340–56. Washington: American Enterprise Institute.

Corseuil, Carlos H., and Francisco G. Carneiro. 2001. "Os impactos do salário mínimo sobre emprego e salários no Brasil: evidencias a partir de dados longitudinais e series temporais." Rio de Janeiro: Institute of Applied Economic Research (IPEA).

Corseuil, Carlos H., and Wilson Morgado. 2001. "Salário mínimo, distribuicao de salários e emprego no Brasil." Rio de Janeiro: Institute of Applied Economic Research (IPEA).

Corseuil, Carlos H., and Luciana Servo. 2002. "Salário mínimo e bem estar social no Brasil: uma resenha da literatura." Rio de Janeiro: Institute of Applied Economic Research (IPEA).

Cowan, Kevin, and others. 2004. "Un diagnostico del desempleo en Chile." Serie de estudios económicos y sociales RE1-04-012. Washington: Inter-American Development Bank.

Cunningham, Wendy. 2002. "The Poverty Implications of Minimum Wages in Developing Countries." Washington: World Bank, LCSPR-Gender.

Currie, Janet, and Bruce C. Fallick. 1996. "The Minimum Wage and the Employment of Youth: Evidence from the NLSY." *Journal of Human Resources* 31(2): 404–28.

Deere, D., K. M. Murphy, and F. Welch. 1995. "Employment and the 1990–1991 Minimum-Wage Hike." *American Economic Review* 85(2): 232–37.

———. 1996. "Examining the Evidence on Minimum Wages and Employment." In *The Effects of the Minimum Wage on Employment,* edited by Marvin H. Kosters, pp. 26–54. Washington: AEI Press.

Dickens, Richard, Stephen Machin, and Alan Manning. 1999. "The Effects of Minimum Wages on Employment: Theory and Evidence from Britain." *Journal of Labor Economics* 17(1): 1–22.

Dolado, Juan J., and others. 1996. "The Economic Impact of Minimum Wages in Europe." *Economic Policy* 23 (October): 317–57.

El-Hamidi, F., and K. Terrell. 2001. "The Impact of Minimum Wages on Wage Inequality and Employment in the Formal and Informal Sector in Costa Rica." Working paper 479. Ann Arbor: University of Michigan, William Davidson Institute.

Fajnzylber, Pablo. 2001. "Minimum Wage Effects throughout the Wage Distribution: Evidence from Brazil's Formal and Informal Sectors." *Anais do XXIX Encontro Nacional de Economia*. Salvador, Brazil.

Feliciano, Zadia M. 1998. "Does the Minimum Wage Affect Employment in Mexico?" *Eastern Economic Journal* 24(2): 165–80.

Fernandes, R., and N. A. Menezes-Filho. 2000. "A evolução da desigualdade no Brasil metropolitano entre 1983 e 1997." *Estudos Econômicos* 30(4): 549–69.

Foguel, Miguel N. 1997. "Uma análise dos efeitos do salário mínimo sobre o mercado de trabalho no Brasil." Pontificia Universidad Católica do Rio de Janeiro.

Foguel, Miguel N., Lauro Ramos, and Francisco G. Carneiro. 2001. "The Impacts of the Minimum Wage on the Labor Market, Poverty and Fiscal Budget in Brazil." Discussion paper 839. Rio de Janeiro: Institute of Applied Economic Research (IPEA).

Foguel, Miguel N., and others. 2000. "Uma avaliação dos impactos do salário mínimo sobre o nivel de pobreza metropolitana no Brasil." Pontificia Universidad Católica do Rio de Janeiro.

Freeman, Richard B. 1996. "The Minimum Wage as a Redistributive Tool." *Economic Journal* 106(436): 639–49.

Ghellab, Youcef. 1998. "Minimum Wages and Youth Unemployment." Employment and training paper 26. Geneva: International Labor Organization.

Gindling, T. H., and Katherine Terrell. 2002. "The Effects of Minimum Wages on the Formal and Informal Sector: Evidence from Costa Rica." University of Maryland Baltimore County, Department of Economics.

Gonzaga, Gustavo, and Danielle C. Machado. 2002. "Rendimentos e preços." In *Estatísticas do Século XX*. Rio de Janeiro: Brazilian Geographical and Statistical Institute.

Gramlich, Edward M. 1976. "Impact of Minimum Wages on Other Wages, Employment, and Family Incomes." *Brookings Papers on Economic Activ-ity* 2: 409–51.

Green, Francis, Andy Dickerson, and Jorge S. Arbache. 2001. "A Picture of Wage Inequality and the Allocation of Labor through a Period of Trade Liberalization: The Case of Brazil." *World Development* 29(11): 1923–39.

Gregory, Peter. 1981. "Legal Minimum Wages as an Instrument of Social Policy in Less Developed Countries, with Special Reference to Costa Rica." In *The Economics of Legal Minimum Wages,* edited by Simon Rottenberg, pp. 377–402. Washington: American Enterprise Institute.

Grossman, Jean B. 1983. "The Impact of the Minimum Wage on Other Wages." *Journal of Human Resources* 18(3): 359–78.

Hamermesh, Daniel S. 2002. "International Labor Economics." *Journal of Labor Economics* 20(4): 709–32.

Kaitz, H. 1970. "Experience of the Past: The National Minimum, Youth Unemployment and Minimum Wages." Bulletin 1657. U.S. Department of Labor, Bureau of Labor Statistics.

Layard, Richard, Richard Jackman, and Stephen Nickell. 1991. *Unemployment*. Oxford University Press.

Lee, David S. 1999. "Wage Inequality in the United States during the 1980s: Rising Dispersion or Falling Minimum Wage?" *Quarterly Journal of Economics* 114(3): 977–1023.

Lemos, Sarah. 2004a. "Minimum Wage Effects across Population Groups in Brazil." University of Leicester, Department of Economics.

———. 2004b. "The Effects of the Minimum Wage across the Private and Public Sectors in Brazil." Discussion paper 04/12. University of Leicester, Department of Economics.

———. 2004c. "The Effects of the Minimum Wage in the Formal and Informal Sectors in Brazil." Discussion paper 1089. Bonn: Institute for the Study of Labor (IZA).

———. 2004d. "The Effects of the Minimum Wage on Prices in Brazil." Discussion paper 1071. Bonn: Institute for the Study of Labor (IZA).

———. 2004e. "The Effects of the Minimum Wage on Wages, Employment and Prices in Brazil in Periods of High and Low Inflation." University of Leicester, Department of Economics.

Lester, Richard A. 1946. "Shortcomings of Marginal Analysis for Wage-Employment Problems." *American Economic Review* 36(1): 63–82.

Linneman, Peter. 1982. "The Economic Impacts of Minimum Wage Laws: A New Look at an Old Question." *Journal of Political Economy* 90(3): 443–69.

Macedo, Roberto, and Manuel Garcia. 1980. "Salário mínimo e taxa de salários no Brasil." *Pesquisa e Planejamento Econômico* 10: 1013–44.

Machin, Stephen, and Alan Manning. 1994. "The Effects of Minimum Wages on Wage Dispersion and Employment: Evidence from the U.K. Wages Councils." *Industrial and Labor Relations Review* 47(3): 319–29.

Machin, Stephen, Lupin Rahman, and Alan Manning. 2003. "Where the Minimum Wage Bites Hard: Introduction of Minimum Wages to a Low Wage Sector." *Journal of the European Economic Association* 1(1): 154–80.

Maloney, William F., and Jairo Mendez. 2004. "Minimum Wages in Latin America." In *Law and Employment: Lessons from Latin America and the Caribbean,* edited by James Heckman, and Carmen Pagés. University of Chicago for National Bureau of Economic Research.

Marinakis, Andrés E. 1998. "Minimum Wage Fixing in Mexico." Briefing note 13. International Labor Organization, Labor Law and Labor Relations Branch.

Michl, Thomas R. 2000. "Can Rescheduling Explain the New Jersey Minimum Wage Studies?" *Eastern Economic Journal* 26(3): 265–76.

Mincer, Jacob. 1976. "Unemployment Effects of Minimum Wages." *Journal of Political Economy* 84(4): S87–104.

Montenegro, Claudio, and Carmen Pagés. 2004. "Who Benefits from Labor Market Regulations? Chile 1960–1998." In *Law and Employment: Lessons from Latin America and the Caribbean,* edited by James Heckman and Carmen Pagés. University of Chicago for National Bureau of Economic Research.

Neri, Marcelo C. 1997, "A efetividade do salário mínimo no brasil: pobreza, efeito-farol e padrões regionais." Pontificia Universidad Católica do Rio de Janeiro.

Neri, Marcelo C., Gustavo Gonzaga, and José Márcio Camargo. 1999. "Distribuiçao regional da efetividade do salário mínimo no Brasil." *Nova Economia* 9(2): 9–38.

Neumark, David, Wendy Cunningham, and Lucas Siga. 2003. "The Distributional Effects of Minimum Wages in Brazil: 1996–2001." Working paper. San Francisco: Public Policy Institute of California.

Neumark, David, and William Wascher. 1992. "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws." *Industrial and Labor Relations Review* 46(1): 55–81.

———. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment." *American Economic Review* 90(5): 1362–96.

Oliveira, Francisco. 1981. *A economia brasileira: crítica a razão dualista*. São Paulo: Brazilian Center for Analysis and Planning (CEBRAP).

Reynolds, Lloyd G., and Peter Gregory. 1965. *Wages, Productivity and Industrialization in Puerto Rico*. Homewood, Ill.: Richard D. Irwin, Inc.

Rottenberg, Simon. 1981. *The Economics of Legal Minimum Wages*. Washington: American Enterprise Institute.

Sabóia, João. 1984. "Evoluão histórica do salário mínimo no Brasil: fixação, valor real e diferenciação regional." Universidad Federaldo Rio de Janeiro.

Saget, Catherine. 2001. "Poverty Reduction and Decent Work in Developing Countries: Do Minimum Wages Help?" *International Labor Review* 140(3): 237–69.

Soares, Sergei S. D. 2002. "O impacto distributivo do salário mínimo: a distribuição individual dos rendimentos do trabalho." Discussion paper 873. Rio de Janeiro: Institute of Applied Economic Research (IPEA).

Souza, Paulo, and Paulo Baltar. 1979. "Salário mínimo e taxa de salários no Brasil." *Pesquisa e Planejamento Econômico* 9: 629–60.

Stigler, George J. 1946. "The Economics of Minimum Wage Legislation." *American Economic Review* 36(3): 358–65.

Velloso, Ricardo C. 1990. " Salário mínimo e taxa de salários: o caso brasileiro." *Pesquisa e Planejamento Econômico* 20(3): 489–519.

Villarreal, B. Samaniego. 1998. "Evaluation of the Impact of Minimum Wages on Mexican Economy." In *Assessing the Impact of Statutory Minimum Wages in Developing Countries: Four Country Studies,* pp. 81–110. Geneva: International Labor Office.

Welch, Finis R. 1976. "Minimum Wage Legislation in the United States." In *Evaluating the Labor Market Effects of Social Programs,* edited by Orley Ashenfelter and James Blum. Princeton University Press.

Welch, Finis R., and James Cunningham. 1978. "Effects of Minimum Wages on the Level and Age Composition of Youth Employment." *Review of Economics and Statistics* 60(1): 140–45.

Wells, John. 1983. "Industrial Accumulation and Living Standards in the Long-Run: The São Paulo Industrial Working Class, 1930–75, Part I." *Journal of Development Studies* 19(3): 145–69.

Zavodny, Madeline. 2000. "The Effect of the Minimum Wage on Employment and Hours." *Labor Economics* 7(6): 729–50.