There is a great cognitive dissonance between what is commonly taught in economics and what passes for sound public policy analysis within the beltway of Washington D.C. Nowhere is a more stark example of this to be found than in the case of the minimum wage law. Many students know that a minimum wage law exacerbates unemployment, particularly for low-skilled, youthful, and minority males. Card and Krueger (1994, p. 792) even characterize this claim as "the central prediction of the textbook model of the minimum wage," but attempt to undermine it their article.

In what might be called "the political economy" of minimum wage legislation, we must take note of the fact that instead of following the received wisdom of the economics profession in this case, the Clinton Administration’s recent legislative proposals have seen fit to follow the lead of Card and Krueger (CK). Why? Although this can only be speculative, one reason for President Clinton’s support of the CK study may be that it is consonant with the position of organized labor. Unions favor minimum wages since they are always in competition with low wage labor; when unskilled labor costs are legislatively increased, this factor of production becomes less competitive with union’s own supply of labor to the market. That is, suppose a union were to demand an increase in their wage from $17 to $20 per hour. The natural reaction of the employer would be to decrease its demand for this now more expensive factor of production, skilled union labor, and to replace it with a substitute factor, unskilled labor. And, without a minimum wage law, this would always be a potent threat, limiting the demands for wage increases on the part of unions. However, with a hefty minimum wage level, particularly an increasing one, this potential danger to organized labor is eliminated. For example, a firm mat easily substitute away from skilled labor if it can hire unskilled workers at $4 per hour. At $6 per hour, the competitive advantage of resorting to the lesser skilled sector of the labor market may be entirely dissipated.

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1See Frey, et. al. (1984) and Block and Walker (1988) in this regard.

2This substitution, of course, could not take place on anything like a one for one basis. By definition, no one unskilled laborer can do the job of a skilled one. But two or three or four unskilled workers, could, at the margin, provide enough labor power so that total production need not be compromised.

3No one, not even the most rabid advocates of minimum wages, urges that their level be raised without limit. For example, were the law to make it illegal to pay less than $1000.00 per hour, there is no economist who would deny that this would wildly exacerbate unemployment, as there are very few market participants with a productivity at or above this level. State Card and Krueger (1999, p. 2): "Our analysis of this new policy intervention is consistent with the conclusion that modest changes in the minimum wage have little systematic effect on unemployment (emphasis added by present author)." But if a minimum wage law mandating $1000.00 per hour would devastate unemployment prospects since few people can produce at this level, it would appear to follow logically that a more modest minimum wage law of, say, $5.00 per hour would ravage the employment prospects for people with productivity in or especially below this range - precisely the contention of most economists. See also Card and Krueger (1995). The one possible exception to this general rule might be Galbraith (2000), who characterizes as fallacious five contentions he attributes to mainstream economics, including the claim that "Rising minimum wages cause unemployment." Stated in so stark a manner, without the CK qualifier as to "modest changes," Galbraith might well be interpreted as claiming that any rise in the minimum wage is economically harmless. He continues: "A furious fight on this issue ensued as recently as 1995 when two distinguished researchers, Alan Krueger of Princeton and David Card of the University of California, Berkeley, broke ranks to declare that the evidence contradicted this thesis. Since then, the minimum wage has gone up twice, and unemployment has continued to decline. Card and Krueger were right--and so was their fundamental criticism of basic labor market theory." The point is, Card and Krueger cannot reasonably be interpreted as making a fundamental criticism of basic labor market theory. For them to do so, they would have to claim that any increase in the minimum wage, no matter how large, would not have deleterious effects on employment. Instead, as I read CK, they are making the far more modest and thus less radical or fundamental claim that this is true only for modest increases.
What is the case in behalf of minimum wages offered by CK? New Jersey raised its minimum wage floor from $4.25 to $5.05 per hour on 1 April 1992. Card and Krueger attempt to assess the unemployment effects of this change as of 5 November - 31 December 1992, roughly seven and a half months later, and were unable to find any. So, they conclude that there were none. In response, I discuss several errors of omission and commission, on theoretical and empirical grounds; I maintain, as a result, that their dismissal of conventional economic theory was premature.

CK's sample is the employment and wage experience of the employees of 399 fast-food restaurants in New Jersey and Pennsylvania -- 321 in the former state that were subject to the new wage minimum and 78 in the latter state that were not affected by the increase. They make several comparisons.

- One is between the pay and unemployment patterns in their New Jersey sample versus their Pennsylvania control group.
- Another contrasts the state of affairs prevailing in New Jersey before and after the imposition of the new minimum wage level ($5.05) on 1 April 1992. Their first wave of interviews took place during the period 15 February and 4 March 1992. Their second set occurred between November 5 to December 31, 1992.
- A third comparison was between low- and high-wage employers in New Jersey, the latter presumed not to be affected by the increase in the mandated wage level.

What did CK find? No matter which of the three ways the experiment was conducted, there was no reduction in employment in the affected restaurants in New Jersey. On the contrary, there was a small but statistically significant increase in jobs in these cases. CK attempt to eliminate other alternative explanations for this phenomenon. These deserve scrutiny.

**Reliability.** First, and most obvious, is data reliability. CK (1994, p. 778) base their case for reliability on the ground that there was a high correlation between the two sets of answers, ranging from .70 to .98, between the "responses of 11 stores that were inadvertently interviewed twice." But this is disquieting on several grounds. For one thing, it shows that they were so confident about the accuracy of their data that they didn't even purposefully plan to test for the possibility of erroneous response or bias, or other sources of data incompatibility. For another, these correlations are merely between two sets of answers to the same questions. Even if they were both wildly inaccurate as measured against reality, they would still be expected not to diverge too much from each other. Third, the higher correlation, .98, was for the price of a meal, a mere control variable; the lower one of .7 was for the number of employees. But the latter variable is absolutely crucial to their analysis, while the former is of relatively less interest.

Furthermore, this correlation attests, at best, only to the accuracy of the first wave of interviews. Of far greater importance is the second wave, from which the actual employment experience after the legislated boost in compensation is derived. CK may have confidence in the accuracy of their data, but the data are suspect, if only on the grounds that they buttress a counterintuitive finding, namely, that minimum wage increases have positive employment effects.6

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4Addison and Blackburn (1999. p. 393) reach a similar conclusion, albeit through a different "reduced form" methodology. Their analysis focuses not directly upon the employment effects of minimum wages, but rather on the implications of this law for poverty rates. They maintain that "a 25% increase in the minimum wage should lower the 1996 poverty rate ... by 9%..." For further support of this enactment see Quigley (1996, p. 513) who concludes: "Reforming the minimum wage by raising it and indexing it for inflation is a critical step toward attaining Franklin Delano Roosevelt's goal of assisting the nation's working poor by providing 'a fair day's pay for a fair day's work.'" For views critical of minimum wages, see Hutchison (1997), Berman (1995), and Deere, Murphy and Welch (1995), Block (1996), Almeida and Block (forthcoming), Ritchie, McGee and Block (forthcoming), McInerney (1997), and McCormick and Block (forthcoming).

5This does not mean of no interest at all. Surely, in the words of an anonymous referee, if "one or ... all producers (can) raise price to compensate for increased labor cost (this) would be of considerable interest." I agree. But if this occurs, then employers need not much reduce the size of their labor force in the face of a mandated wage increase. However, it is the latter phenomenon which is the major issue of debate; the former is only important, insofar as it impacts on the latter. Further, there is reason to believe that the ability of producers to raise price in reaction to an increase in the minimum wage level is rather limited. For, if they could increase final goods prices, now, without any sharp negative repercussions, why was this option not available to them before this change in the law?

6This, despite the recognized unreliability of survey data, particularly unpaid (that is, the respondents were not compensated for their labor and thus it may be expected to be of lower quality), and by telephone.
Choice of subjects. The second difficulty concerns their choice of subjects: fast-food employees. To be sure, there may be some advantages in this choice; such establishments, after all, are a leading employer of unskilled labor, and data are easy to collect. But while the "products of fast food restaurants are relatively homogeneous" (1994, p. 774), a relatively peripheral issue, this does not really apply to job requirements, an issue crucial to their findings. That is to say, while the typical consumer cannot readily tell one McDonalds' burger from another, this is not true of the ability of the manager to distinguish one employee of such an establishment from another.

How does heterogeneity enter into such low-skill occupations? In many ways: employees must come to work on time and stay on for their full tour of duty, otherwise staffing decisions are rendered more difficult; those who deal with the public must attain a "the customer is always right" outlook, and a demeanor consistent with this thought; even those behind the scenes (e.g., the cooks) must cooperate with one another. The last thing management wants is intra-staff fights or altercations between employees and customers. Employees, moreover, must take direction from management without resentment, even though this often occurs across racial, ethnic, and gender lines. In addition to reliability, cheerfulness, and docility, there is of course enthusiasm, a hard work ethic, cleanliness, etc. Workers can and do differ in all of these dimensions.

If CK were seeking homogeneity of job specifications, they might far better have looked at factory work. There are, to be sure, heterogeneity "problems" there too. There is no field of human endeavor where heterogeneity is completely absent. But heterogeneity is likely to be of less importance on an assembly line.

Nor can we ignore the fact that heterogeneity is very important: Employers will fire their least productive workers in response to an artificially mandated wage increase and substitute better ones in their places. (The reason better ones were not originally hired is that poorer ones could be had at lower wages. But now, with the advent of the increase in the minimum wage, the latter option is no longer available, and the former seems preferable.)

Narrowness of sample. A third problem arises with the narrowness of CK's choice of subjects. Coerced rises in wage minima will have adverse employment effects on all those with productivity below stipulated levels. By excluding all but some 8,000+ workers in total (some 400 stores with an average of just above 20 employees each) from their purview, CK look at a small cohort of the total economies of New Jersey and Pennsylvania. This buy-one-ticket-in-a-lottery strategy is practically guaranteed to fail to take into account widespread unemployment effects. Suppose, for example, that CK had concentrated only on low-skilled gas station attendants before the advent of self service. The unemployment effects of a similar wage increase might have been equally nonidentifiable, spilling over to other industries more able to adjust quickly than this one.

Temporal adjustment. A fourth drawback to their analysis concerns timing; CK confine themselves to the relatively short run. And not unrelated to this, there is also a difficulty with the percentage change (18 percent) in the required wage rate. They gave this industry a scant seven months to respond to the new mandate. Had they dealt in similar fashion with the operators of manual elevators when the minimum wage rose from $.40 to $.75 per hour when few were yet automated, they undoubtedly would have found almost zero negative employment impact. And yet within a few years of this experiment, virtually all of these jobs were obliterated by minimum-wage-inspired automation. What, then, is the relevant lag effect in this particular case? I expect that this is far longer than a mere seven months, since technological innovations in the fast-food industry will probably take far longer than in vertical transportation.

It is exceedingly speculative to try to anticipate the possible course of future inventiveness in this field that will be engendered by this minimum wage increase. It is an entrepreneurial, not an economic, task. But as CK do not vouchsafe us with even a discussion of lags, this oversight must be made good somehow.

How, then, will entrepreneurs substitute out the suddenly more expensive factors of production, unskilled labor, which has now been priced out of the market? One possibility, of course, is robotics or artificial intelligence. But this, unlike automatic elevators in an earlier epoch, seems decades away. Another insight might be garnered by borrowing a leaf from grocers, pharmacists, and other retail merchants, who utilize universal product codes. Yet another unskilled-labor-saving device might be to copy the trend in filling stations and make more use of self service.

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7 Deere, Murphy and Welch (1995, p. 52) use the homogeneity assumption to shine a spotlight on the economics of minimum wages: "If the world were simple, then the implications of increases in the minimum wage would also be simple. For example, if wages were the only form of compensation, if there were no fringe benefits or job amenities, and if all workers were of uniform quality, then everyone would get the same wage. A minimum that attempted to raise the wage would reduce employment."

8 Comparing 1 April with 3 December the midpoint of their second wave interviews yields 7.1 months, not the 8 they report on page 775.
This has already been done, in some fast food cases, with regard to drinks.

How long will it take for this phenomenon to significantly reduce the demand for unskilled labor? This is extremely difficult to say. But judging from the results reported by CK, seven months would appear to be too short a time span to capture all of the forthcoming unemployment effects of this law.

CK do not attribute their findings to flawed statistics, an insufficient time lag, a relatively modest increase in the minimum wage level, or an exceedingly narrow coverage of industries, but rather to the presence of monopsony. On the face of it, this is not compelling. Say what you will about New Jersey, no one has yet seen fit to characterize it as a one company state. Even on the heroic assumption that monopsony is itself a logically coherent analytic construct, it strains all credulity to apply it to this case.9

What are the problems? Outsiders will enter the market to take advantage of the profits earned by the monopsonist; in the absence of entry barriers, monopsony, even if it could become established in the first instance, cannot long endure. Workers, too, are mobile, even if not perfectly so. Were their wages pushed below levels established by marginal revenue product, they would seek higher wages in areas less dominated by monopsony. Most important, even in the absence of these other considerations, the neoclassical monopsony analysis admits of only a very narrow window of opportunity for “ameliorative” legislation such as the minimum wage. This is because each monopsonist faces slightly different cost and demand schedules. And yet minimum wages can only have positive employment effects if their rise is between points Wm and Wc in Figure 1.10 But if every monopsonist confronts different cost and demand schedules, in order not to generate negative employment effects a different minimum wage range must be mandated for each.11 But this is clearly a manifest impossibility, something never even contemplated by advocates of government intervention into labor markets, such as CK.

**Figure 1.**

![Figure 1](image)

Then, too, there is the issue of general vs. specific training (Becker, 1964). In the former case, marginal revenue product is the same whether working for the present employer or for any other. In the latter case, if the employee migrates to another firm, his productivity is lower. This, in effect, "ties" the worker to his present employer, since skills are in part firm specific.

It is readily apparent that if there is any scope for monopsony, it is with regard to specific, not general, training. But this is very damaging for the CK analysis. For specific training is positively correlated with high skill;

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10 S is the supply curve of labor, D is the demand curve (equal to the Value of the Marginal Product of Labor), and MFC is Marginal Factor cost to the monopsonist. The perfectly competitive industry in the factor market would locate at C, paying wages of Wc and hiring Qc of labor. The monopsonist would locate at M, and hire Qm workers at a wage of Wm.

11 The range is depicted in Figure 1 by the distance Wm-Wx. This is because at a minimum wage lower than Wm the monopsonist will not be forced to increase his pay offer, and if it is higher than Wx, there will be unemployment effects even for the monopsonist.
those with general training tend to be less skilled. Thus, CK are attempting to apply the monopsonistic model to a sector of the labor market where it patently does not apply: to unskilled, generally-trained workers, who are free to take on other jobs, at least as far as the fear of diminution of productivity elsewhere is concerned. CK would have had a better case for linking highly-skilled workers to monopsony, but their wages usually far exceed mandated minimum wages.\textsuperscript{12}

A further critique of the CK thesis has been articulated by Gary Becker. In his view, ceteris was not paribus in the research undertaken by CK. States Becker (1995, p. 10):

"The higher federal minimum in 1990 and 1991 caused a much larger drop in New Jersey's teenage employment than Pennsylvania's, which could explain why employment did not fall more in New Jersey when that state increased its own minimum in 1992. New Jersey employers presumably anticipated the increase in their state's minimum when they sharply cut employment in responding to the earlier wage hike."

As well, there is a wealth of pertinent empirical evidence on this topic amassed by the economics profession over many decades. It shows the deleterious effects on employment for the unskilled; this applies to the minimum wage law in general, and to raising it to any given level in particular. This empirical record, alone, should have given CK pause for thought.

Even more daunting is the fact that their findings are contrary to economic law. It is a matter of basic theory that in equilibrium, wages tend to equal marginal revenue product.\textsuperscript{13} If wages are above this level, losses and eventual bankruptcy may result.\textsuperscript{14} If wages are below marginal revenue product, there is a proclivity for the employer to lose his labor force: either the quit rate will rise as employees seek better opportunities, or other employers will bid for the underpaid workers in an attempt to profit from them.\textsuperscript{15} It is only when wages equal productivity that there is no internal impetus for further change.

This being the case, an elevation in the minimum wage level is bound to exceed the marginal revenue product of at least some additional workers. These people, then, are primary candidates for unemployment. A finding that the minimum wage level rose, and that employment did not fall but actually increased, is therefore highly anomalous. It cries out for explanation. On the level of pure theory, then, it must count against CK that -- apart from the economically dubious monopsony argument -- they felt no need to account for their anomalous findings.

One last issue overlooked by CK concerns non-monetary compensation: it is possible that the negative impact of minimum wages on unemployment may be masked by the phenomenon of fringe benefits and working conditions (see Wessel and McKenzie). In response to the mandation of a higher minimum wage, the employer can reduce the fringe benefits enjoyed by his workers and the amount of money he invests in their working conditions (e.g., air

\textsuperscript{12} There are, perhaps, no more highly skilled workers than professional athletes. Their feats of derring-do, the required natural ability and years of intensive practice serve as a natural entry barrier. If anyone ought to be victimized by monopsony, according to neo-classical theory, it would be these workers. But even here, as shown by the continual rise of foreign and other competing leagues, these laborers, supposedly helpless in the face of the monopsonistic threat, are not at all victimized.

\textsuperscript{13} I have reservations about the neoclassical model of industrial organization, which makes much of the distinction between monopoly (or monopsony) and perfect competition, based, mainly, on the number of firms in an industry and the concentration ratios of the leading four or eight firms, e.g., the Herfindahl index. On this see Armentano (1972, 1982, 1991), Armstrong (1982), Block (1977, 1982, 1994), DiLorenzo (1997), Boudreaux and DiLorenzo (1992), High (1984-1985), McChesney (1991), Rothbard (1970a), Shugart (1987), Smith (1983). But for purposes of the present paper, I adopt this model, and assume that the firm depicted in Figure 1 is either perfectly competitive or monopsonistic (I am comparing the two) in the labor market, while perfectly competitive in the product market it faces.

\textsuperscript{14} Labor, of course, is only one factor of production. Where it comprises a small proportion of total costs, the firm may well survive by substituting now relatively cheaper factors for the now more expensive labor. However, in (service) industries where labor comprises a very high proportion of the total, losses and eventual bankruptcy are rendered more probable.

\textsuperscript{15} We assume, here, that information is readily available to either the employer or employee or both.
conditioning, level of cleanliness, decor, music, etc.) If so, then the total money expenditure made in behalf of employees need not rise, even in the face of a legal requirement than money wages increase. Total wages equal money wages plus non-pay packet expenditures, and if the money wages rise while the non-monetary spending in behalf of employees falls, then total compensation need not rise. If so, there will be a minimum wage unaccompanied by additional unemployment in a context where traditional theory need not be jettisoned to any degree, neither that implied by CK (1994) nor even the more extreme version of this offered by Galbraith (2000).

But let it not be thought that the failure of the minimum wage raise to increase unemployment due to this phenomenon is an argument in behalf of this public policy. For there will be losses in utility, even if unemployment does not increase. Why? This is because we must assume that the previous allocation of total compensation over money wages, fringe benefits, and working conditions tended to be optimal. Certainly, the employer has every incentive to provide equally expensive non-monetary compensation to his employees when they prefer this, and not, when they do not. Specifically, better fringes and improved working conditions are supplied to workers only when they cost less for the firm to provide than they are worth to the worker. But when the minimum wage law forces the business to increase money compensation at the cost of more highly valued fringe benefits and better working conditions, this renders the total pay less attractive. These jobs may pay more, due to the minimum wage law, but since the higher monetary compensation comes at the expense of the even more highly valued non monetary aspects of compensation, it cannot be said that even the worker not unemployed by this law is a beneficiary of it.

In conclusion, we ask a question. Which is more reasonable? That economic law somehow has been repealed in New Jersey, or that CK’s methodology is wanting in one or more of the ways indicated above? The answer, at least from this quarter, is clear.

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16 Two public opinion surveys of economists asked 27 different questions about public policy issues, in an attempt to gauge the level consensus within the profession (Frey, et. al. 1984; Block and Walker, 1988). A statement which garnered amongst the highest degree of agreement of all these questions read as follows: "A minimum wage increases unemployment among young and unskilled workers."
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