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Policy Watch
The Worker Adjustment and Retraining Notification Act

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Public policies are often made without much recourse to economic reasoning. Economists are often unaware of what is happening in the world of public affairs. As a result, both the quality of public decision-making and the role that economists play in it are less than optimal. This feature contains short articles on topics that are currently on the agendas of policy-makers, thus illustrating the role of economic analysis in illuminating current debates. Suggestions for future columns and comments on past ones should be sent to Daniel Weinberg, c/o *Journal of Economic Perspectives*, HHES Division, Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

Introduction

Since 1974, numerous attempts have been made in the U.S. Congress to pass plant-closing legislation. Yet it was not until 1985 that draft legislation succeeded in being reported out of either House, and almost three years later before plant-closing legislation was enacted into law in the form of the Worker Adjustment and Retraining Notification Act (WARN). WARN (Public Law 100-379) was enacted on August 4, 1988, and became effective six months later. It requires employers with 100 or more full-time employees to provide 60 days' written notice of a plant closing or mass layoff to representatives of the affected

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workers (to the worker directly in the absence of a union), to local government, and to the state dislocated worker unit.[1]

A "plant closing" is defined as the shutdown of a single site of employment, or distinct part thereof, involving 50 or more employees. A "mass layoff" is a layoff of more than six months' duration that affects at least one-third of the workforce (but not less than 50 employees) at a single site of employment. If 500 or more employees are laid off, then the one-third rule does not apply, and notification is automatically required. Part-time workers are excluded in calculating the employment loss count, but are entitled to notice once it is triggered.

In addition to freeing small firms of the obligation to provide notice, WARN contains a number of exemptions, exceptions, and exclusions. First, displacements from a temporary facility or project are exempt, as are those resulting from a strike or lockout. Second, reductions in the notification period are allowed under certain extenuating circumstances: companies that are actively seeking capital or business so as to forestall a closure; business conditions that were not reasonably foreseeable at the point notice would have been required; and separations due to natural disasters. Finally, workers offered (timely) transfers to another employment site within a reasonable commuting distance are not counted as displaced under WARN, nor are those workers who accept transfer to any other site.

The primary penalty to employers who do not comply with WARN is the payment to workers of full wages and fringes for each working day that notice was not provided. Failure to inform the relevant local government unit is subject to a civil fine of up to $500 for each day of violation, although this fine may be waived if employers make expeditious settlement of their liability to employees. However, the decision that an employer is in violation of WARN is not made by any governmental enforcement agency; rather, enforcement must be pursued through individual or class action suits brought by the aggrieved parties in federal district courts.

Although WARN is a watered-down version of its legislative precursors—for example, a 1979 proposal mandated up to two years' notice, with severance pay—considerable controversy surrounded its passage. Opponents of the legislation argued that requiring notice would add to employment adjustment costs and hence reduce employment. Although the most common justification for WARN was one of "simple economic justice and compassion" (Blinder, 1988, p. 19), supporters also argued that the benefits to workers in the form of reduced unemployment and possibly higher replacement earnings would dwarf the costs to employers. Implicit in the latter economic argument is that bargaining between employers and workers over the provision of notice suffers from some form of market failure. This market failure is typically ascribed to a commitment problem arising from either a weak reputation effects mechanism

[1]A bit of additional detail: workers are defined as full-time if they work at least 20 hours per week on average, and have worked at least six months in the past year. State dislocated worker units were set up under the Economic Dislocation and Worker Adjustment Assistance Act (Public Law 100-418) to offer rapid assistance to displaced workers.

in circumstances of declining firms, or large costs of writing and enforcing explicit private-notice contracts. Most theoretical models of mandatory notice suggest that such market failures can lead to a situation in which firms prefer to be bound by a notice mandate (Deere and Wiggins, 1988; Kuhn, 1992), although this prediction is at odds with the position taken by employers in the WARN debate.[2]

Considerable research has been conducted on the effects of the type of notice mandated by the act. In the next section, we briefly review the results and shortcomings of this research.

The Effects of Notice

Research on the impact of advance notice has been fostered by the availability of a nationally representative survey of displaced workers: the Displaced Worker Supplements (DWS) to the January Current Population Survey. These supplements have been conducted biennially since 1984, and provide retrospective data on displacements occurring within five years preceding the survey.

The first two supplements (1984 and 1986) asked individuals whether they expected to lose their job or had received notice of their displacement, but did not seek further information on the nature of that notice. The research that provides information most directly relevant to WARN uses the DWS from 1988 and later years.[3] Beginning with the 1988 survey, displaced workers who responded affirmatively to the notice question were also asked whether that notice was in written form and, if so, the length of the notice provided. The DWS codes the length of notice into one of three intervals: less than one month, one to two months, and more than two months. Information is also available on the length of the period between the onset of displacement and reemployment, beginning with the 1988 survey.

We have calculated the median length of spells of joblessness in the years preceding the implementation of WARN for all workers and for gender-occupation groups, using data from the 1988, 1990, and 1992 surveys. These results are given in Table 1. The raw medians point to a surprising outcome: for all workers, the clear tendency is for longer intervals of written notice to be associated with longer spells of subsequent joblessness. In fact, workers receiving notice of two months or more have a longer median duration of joblessness than even non-notified workers. This pattern is not consistent across gender-occupation groups, however, since extended written notice apparently

[2]It remains entirely possible that some employers did not support the legislation for fear that its passage would presage further, more intrusive mandates.

[3]There was a considerable amount of research on the effects of advance notice using the 1984 and 1986 Displaced Worker Surveys (see the survey in Addison and Portugal, 1992b). However, this research was only able to use a composite notice variable dominated by the provision of informal notice.

Table 1
Median Joblessness (in Weeks) Following the Displacement Event

Category of Notice	All Workers	Men		Women	
		Blue Collar	White Collar	Blue Collar	White Collar
Non-notified	8.4	8.0	8.5	12.1	8.3
Notified					
Informal	7.0	6.9	4.6	12.9	8.1
Formal					
< 1 mo.	7.7	6.4	6.1	20.6	8.7
1-2 mos.	8.3	8.8	6.8	17.8	6.8
> 2 mos.	10.7	14.8	5.8	27.5	8.8

Sources: 1988, 1990, and 1992 Displaced Worker Surveys.
Note: The medians are taken from nonparametric estimates of the survival function. They are for displacements that occured before 1989.

reduces jobless duration for white-collar men. However, among men, the median length of joblessness is shorter for informally notified workers than for those with written notice.[4]

This benefit of notice results from its effect in increasing the probability of avoiding unemployment, and not with its reducing the length of an unemployment spell once it has started. In Table 2, we separately examine the probability that a worker will experience joblessness, and the median duration of joblessness among workers with positive-length spells. The probability of moving directly into a new job increases as longer advance notice is given, but the median duration of joblessness also increases rather dramatically with the length of notice.[5]

Much less research has been devoted to quantifying the effects of advance notice on the quality of subsequent jobs. The primary aspect that has been studied is weekly earnings on the job held at the DWS survey date. The earliest research (with the 1984 and 1986 DWS) found no significant association between notice and postdisplacement earnings, suggesting that the gains from notice were apparently confined to reduced joblessness (Podgursky and Swaim, 1987; Ehrenberg and Jakubson, 1989). However, more recent evidence suggests that there may be some beneficial effect, primarily for workers receiving the longest spells of notice (Ruhm, 1991; Nord and Ting, 1992). For example,

[4]This comparison of medians is, of course, not of a *ceteris paribus* nature. Ruhm (1992) finds similar patterns for the group of all workers after controlling for several characteristics of the worker and the lost job. Addison and Blackburn (1993b) find that the longest interval of written notice is associated with shorter unemployment durations than the absence of notice, but only for white-collar workers.

[5]Ehrenberg and Jakubson (1989) were the first to point out this characteristic of the effect of notice. Addison, Fox and Ruhm (1992) find the monotonic relationship between length of notice and the probability of avoiding joblessness continues to hold after controlling for other factors.

Table 2
The Probability of Avoiding Joblessness and the Median Length of Joblessness

Category of Notice	*Probability of Avoiding Joblessness (%)*	*Median Length Among Positive Spells (weeks)*
Non-notified	10.4	9.3
Notified		
Informal	15.8	9.3
Formal		
< 1 mo.	11.1	9.7
1-2 mos.	16.6	10.9
> 2 mos.	19.4	16.5

Source: See Table 1. All figures are for positive spells of joblessness.

Ruhm reports a 10 to 13 percent advantage in replacement earnings for workers who received more than two months of written notice, relative to observationally equivalent workers who receive no notice. However, he finds no effect on replacement earnings for workers receiving notice of less than two months. Our own computations (using the same data as Tables 1 and 2) reveal a similar pattern of effects.

From Voluntary to Mandatory?

Research into the effects of notice on postdisplacement outcomes has relied heavily on data from voluntary notice. Can the results be expected to carry over to a regime of mandatory notice? For example, it has been argued that the provision of notice in a voluntary regime may be dependent upon the expectations employers have about their employees' reemployment opportunities. The nature of this dependence is theoretically unclear. One possibility is that employers are more likely to provide notice when they believe that workers face major reemployment difficulties, and are thus unlikely to leave "prematurely." If so, research that ignores this endogeneity problem can easily make it appear that longer notice is associated with longer spells of joblessness. Another possibility is that workers are more likely to bargain for notice in situations when it will do them the most good, in which case research would tend to overstate the benefits of notice to the average worker. Finally, firms may be more likely to give notice when the workers can easily guess the firm will close or lay them off, so that mandatory notice will on average provide more information to workers than does voluntary notice. In this latter case, research on voluntary notice could be using an adequate signal for the increase in information that mandatory notice would provide.

The empirical evidence on the importance of this endogeneity bias is mixed. Given that the underlying equations used to predict notice are generally

poorly determined, and that the DWS does not contain establishment data that would help in constructing proxies for the costs of providing notice, it is not surprising that the authors who attempt the standard endogeneity corrections caution against placing much reliance on the estimates (Ehrenberg and Jakubson, 1989; Addison and Portugal, 1992a). The evidence in favor of, or against, endogeneity bias is weak, and the existing estimates offer little basis for commenting on the likely effect of shifting from a voluntary to a mandatory regime.

In addition, shifting from a voluntary to a mandatory notification regime might reduce the benefits from any particular notice, if it increases the percentage of displaced workers who receive notice. After all, being one of a lucky few who receive a voluntary notice is one thing; being one of a great mass who receive mandatory notice is something else. Mandating notice may also have the effect of reducing overall employment. In his time-series, cross-country analysis of the effects of dismissal laws on employment, Lazear (1990) finds that more stringent notice requirements do tend to be associated with lower employment rates and lower labor force participation rates, even if there is no clear cut association with unemployment rates. His results do not encourage a sanguine view of the effects of generalizing notice in the U.S. case.

At this point, knowledge of the effects of voluntary notice does not go much beyond a provisional statement of the benefits of mandatory notice. Even less is known about the size of the costs to employers of providing notice, or the importance of market failure in a voluntary notice regime. An opponent of notification legislation might readily accept the evidence that those who have been notified in the past have benefitted from the notices, but continue to believe that costs of making such notification mandatory overbalance the benefits.

WARN and the Incidence of Notice

Prior to the onset of WARN, roughly half of displaced workers were receiving some form of notice, although three-quarters of such notice was "informal" in nature. The presumption of academics (if not of shrewder politicians) was that enactment of the legislation would considerably increase the provision of advance notice, and also lead to a greater proportion of notices being written, rather than informal. Given that WARN is more likely to apply to larger employers—the one-third exemption is less likely to apply—we might also expect these effects to be especially prominent for workers displaced from large firms.

The 1992 Displaced Worker Survey offers information on the incidence of written notice among displaced workers for the three-year period following the implementation of WARN. Unfortunately, these data contain some ambiguity about the category of notice that would be most affected by WARN. The act stipulates that affected workers are to be provided with 60 days' notice, an

Table 3
Probability of Receiving Advance Notice Before and After WARN

	Individual Notice Categories					*Lengthy Formal Notice*
			Formal			
Period	*None*	*Informal*	*< 1*	*1-2*	*> 2*	
Pre-WARN (1983-88)	47.5%	38.8	5.1	3.9	4.7	8.6
Post-WARN (1989-91)	51.4	35.0	5.4	4.4	3.8	8.2
1989	50.2	35.5	6.1	4.5	3.7	8.2
1990	51.1	34.7	5.0	5.0	4.2	9.2
1991	53.0	34.5	4.9	4.1	3.5	7.6

Source: See Table 1.
Note: Displacements in January 1992 are included in the 1991 calculations.

interval that may in principle be reported as either of the two longest categories of formal notice identified in the DWS—between one and two months' notice and more than two months' notice. Given this ambiguity, we group these two categories to form a single "lengthy formal notice" category, the provision of which we would expect to have increased after WARN went into effect.

Sample probabilities of the receipt of the various categories of notice were calculated for displacements occurring in 1989-91 using the 1992 and 1990 DWS. We also calculated similar probabilities for the pre-WARN period covering 1983-88, using observations from all three surveys. The results are reported in the first two rows of Table 3. Surprising to us, at least, the provision of lengthy formal notice did not increase after implementation of the legislation.[6] In fact, the major change in notice apparently took the form of shifting workers from informal notice to no notice at all. Moreover, the data reveal no tendency for the incidence of notice to decline or increase either in the pre-WARN period, or in the years following WARN (see the last three rows of Table 3).[7]

The substantial increase in formal notice desired by supporters of the legislation, and feared by opponents, has not materialized. Is it nevertheless possible that there are some smaller effects of the legislation, clouded by differences in the sample in the pre- and post-WARN period? In Addison and Blackburn (1993a), we performed several statistical analyses to control for

[6]The small decline in the probability of lengthy written notice is not statistically significant at conventional levels. However, there was a statistically significant change in the distribution of notice after WARN for the five-category classification of notice.

[7]Three states — Hawaii, Maine, and Wisconsin—had plant-closing legislation that mandated notice in the years before WARN was passed. The provision of lengthy written notice was higher in the pre-WARN years in those states (roughly 14 percent of displaced workers) compared to states without mandated notice. And in all three states the provision of notice declined to 10 percent in the post-WARN period. However, neither the pre-WARN difference, nor the difference in changes after WARN, is statistically significant after controlling for other factors.

observable factors that might be related to the provision of notice, including the nature of the displacement (plant shutdown or layoff), expected eligibility for unemployment compensation, the state unemployment rate, firm size and union variables imputed from the two-digit industry of displacement, the years between displacement and survey, and several demographic variables. Even with these adjustments, there does not appear to have been even a small effect of WARN on the probability of receiving lengthy written notice. In fact, the most intriguing result from this analysis is the possibility that short formal notice (less than one month) may have become more prevalent after WARN, while informal notice became less prevalent. This hints at a slight increase in the formalization of notice associated with WARN, although not of the type actually mandated by the act. In addition, we looked to see whether or not WARN increased the incidence of notice among workers displaced from firms in industries characterized by large-scale employers, but found only a small increase that was not statistically significant.[8]

Although the DWS provides sufficient information for determining whether the typical displaced worker has been affected by WARN, the lack of information about the characteristics of workers' establishments makes it less useful for studying why WARN has had so little effect. In this regard, information on firm and establishment size, and if possible on the size of the layoff, would be helpful additions to future surveys.

Why Has WARN Been Ineffective?

We can think of at least four reasons why the implementation of WARN has not increased the provision of formal notice mandated by the act.

First, employers may be ignorant of their responsibilities under the law, so that some employees entitled to notice have not received it. We do not think this is likely. The limited evidence with a bearing on the issue is mixed. On the one hand, state governments have made considerable efforts to inform employers of the mandate, using both toll-free numbers for answering employers' questions about the law and direct mailings to employers in the unemployment insurance system (SRI International, 1991). On the other hand, a recent General Accounting Office (GAO) study of employers who filed notices suggests that roughly one-third of the sample were unclear about or unaware of at least one of the key features of the act (U.S. General Accounting Office, 1993, pp. 47-48). The study also reported that such employers most often consulted attorneys for clarification. Presumably employers who did not file also sought clarification, so that an inference that a lack of knowledge explains the ineffectiveness of the act cannot be substantiated by this evidence. The suggestion that

[8]We had also anticipated that the implementation of WARN would provide a natural experiment for studying the effects of endogeneity on estimates of the potential benefits of mandated notice. Given the actual effects of WARN on notice provision, even this analytical benefit of the legislation is doubtful.

ignorance of the law is an important determinant of the law's effectiveness is also undercut by the "numerous inquiries" from unions and workers received by state dislocated worker units as well as the Department of Labor as to entitlements under the law (Ehrenberg and Jakubson, 1990, p. 43). Added to which, there is the point that our data suggest no increase in the incidence of notice through time since 1989.

Second, employers may be deliberately noncompliant. Although Ehrenberg and Jakubson (1990, p. 43) claim that "early experience with WARN shows that compliance appears to be high," the aforementioned GAO study provides some evidence to the contrary, at least for plant closings. In the compliance component of the study, the GAO matched data from the BLS Mass Layoff Statistics (MLS) with WARN notices received by dislocated worker units in eleven states. Of the 149 closings identified from the MLS data that "appeared to meet WARN criteria," the GAO (1993, p. 24) found that less than one-half filed notices, suggesting some degree of noncompliance. Comparatively few legal cases have been occasioned by the act—the GAO study identifies just 66 lawsuits—and this may weaken the noncompliance argument, not least because employers would appear to have won as many cases as they lost. But this is admittedly a weak reed on which to rebut the noncompliance argument if, as the GAO alleges, the costs of filing a lawsuit are disproportionate to the remedies.

A third possibility is that firms may have altered their layoff behavior to avoid being covered by the act. For example, firms may plan their layoffs with the employment loss counts established under WARN in mind. We are unaware of any information indicating how prevalent such action might be, although anecdotal evidence of such behavior has recently been presented before a U.S. Senate subcommittee (U.S. Congress, 1993, pp. 77-81).

A final possibility, and in our view the most likely, is that usual employer behavior leaves most displacements uncovered by the act. The GAO investigated 650 layoffs that affected 50 or more workers in facilities employing at least 100 workers and found that 49 percent would anyway have been exempted because they fell under the one-third rule. Another 15 percent involved other exemptions, such as strikes. And the act only covers firms with at least 100 workers, thereby excluding at a stroke 35 percent of the workforce from potential entitlement to notice.

Supporters of mandatory notice have suggested that WARN be amended, both to reduce employment and layoff thresholds and to establish a monitoring and enforcement agency within the government (U.S. Congress, 1993, pp. 88-94). But at this point the argument that the law should be repealed seems just as defensible. There is little evidence that the benefits of a substantial increase in advance notifications outweighs the costs, much less that 60 days is the appropriate length of notice to require.

Oddly enough, the legislation might have done nothing more than mandate that which was already existing practice. Or perhaps not so odd: when an act has no perceptible effect, it is fair to question whether the designers of the

legislation (as opposed to its supporters) actually desired a significant increase in worker notification.

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