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THE ROLE OF TEMPORARY AGENCY EMPLOYMENT IN TIGHT LABOR MARKETS

SUSAN N. HOUSEMAN, ARNE L. KALLEBERG, and GEORGE A. ERICKCEK*

The authors use case study evidence from hospitals and auto parts manufacturers to investigate why employers used—and even increased their use of—temporary help agencies during a period of tight labor markets in the 1990s. In high-skill occupations, the evidence suggests employers paid substantially more to agency help than to regular employees in large part to gain additional time to recruit employees for permanent positions and thereby avoid raising wages for new hires and existing employees. In low-skill occupations, temporary help agencies appear to have facilitated the use of more "risky" workers by lowering their wages and benefits and the costs associated with turnover. As in high-skill occupations, the use of agency temporaries in low-skill occupations relieved pressure on companies facing tight labor markets to raise employees' wages, and may have contributed to the stagnant wage growth and low unemployment observed in the 1990s.

Temporary agency employment expanded steadily during the 1990s. According to Bureau of Labor Statistics establishment data, employment in help supply services, which primarily comprises temporary help agencies, increased from 1.2% of paid employment in 1990 to 2.6% in 2000. The share in temporary agency employment grew throughout this period of strong economic expansion and very low unemployment despite the fact that the majority of temporary agency workers express a desire for regular, permanent jobs (Cohany 1998). The preference for regular employment among most agency temporaries has led many to conclude that the growth of the share in temporary employment in the 1990s was most likely driven by employer demand. In this paper, we provide insights into why employers heavily rely on temporary agency workers in tight labor markets based on evidence from two industries: hospitals and auto parts manufacturers.

It has long been observed that the share in temporary agency employment moves

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procyclically. The most common explanation for this pattern is that companies use agency temporaries to handle demand variability and to buffer core workers during downturns (Mangum, Mayall, and Nelson 1985; Abraham 1988; Kandel and Pearson 2001). Because agency temporaries are the first to be laid off in a recession, we would expect the share in temporary employment to rise during expansions and fall during recessions.

Nevertheless, it is hard to understand why, in the aggregate, the share in temporary employment would continue to grow strongly after almost a decade of expansion if firms were simply using temporaries to buffer core workers against an anticipated downturn. Indeed, evidence from employer surveys suggests the importance of other factors, including difficulty in finding qualified workers on their own and the desire to screen workers for permanent positions (Abraham 1988, 1990; Houseman 2001b). We also found evidence of the importance of these factors in our case studies.

One theme developed in this paper is that the use of agency temporaries in tight labor markets relieved pressure on companies to raise wages of regular employees. During the 1990s, the U.S. economy experienced low wage growth coupled with low unemployment rates.[1] Although temporary agency employment still accounts for a relatively small share of paid employment, the growth in temporary employment accounted for 10% of net employment growth in the economy during the 1990s. If workers face costs in switching employers and internal labor market rules characterize wage setting for workers with some tenure on the job, then market forces influence wage levels primarily by affecting the wages of new entrants.[2] Thus, it is reasonable to hypothesize some connection between the rapid growth in temporary agency employment, slow aggregate wage growth, and low unemployment. Indeed, Katz and Krueger (1999) presented evidence that states with a greater presence of temporary agency employment experienced lower wage growth in the 1990s and that the lower wage growth associated with the growth in temporary employment may have accounted for up to a 0.4-percentage-point reduction in the unemployment rate. A major contribution of this paper is to improve our understanding of the mechanisms by which temporary agency use may lead to lower overall wage growth.

Why Employers Use Agency Temporaries in Tight Labor Markets: A Conceptual Framework

We begin by providing a conceptual framework for organizing and interpreting the case study information presented in subsequent sections. We assume that employers use agency temporaries in lieu of other factor inputs, such as direct-hire temporaries or regular employees, to reduce costs. Such cost savings can occur through a variety of mechanisms, and we offer several potential explanations for why companies used and, on average, increased their use of temporary agency workers in the very tight labor markets characterizing the U.S. economy in the 1990s.

One potential explanation is that companies often find it cost-effective to hire workers on explicitly temporary contract when the work is expected to be temporary or is of uncertain duration, and companies have more such work when the economy is booming than when it is in recession. Theoretically, there must be some difference between temporary and regular workers to explain employers' use of explicitly temporary contracts. To generate greater employer demand for temporary workers when an increase in workload is temporary or of uncertain duration, previous theoretical models (Abraham 1988; Kandel and Pearson 2001) have assumed that workers on temporary contract are less productive

[1]See Katz and Krueger (1999) for documentation of this phenomenon and some hypotheses about its causes.

[2]See, for example, discussions on wage-setting processes in internal labor markets in Doeringer and Piore (1971) and Levine et al. (2002, Chapter 2).

than regular workers but less costly to terminate.[3] The amount of temporary work may increase during an expansion, as companies take on special projects that are intrinsically short-term in nature. Moreover, during an expansion employers are more likely to experience an increase in their workload that, at least with some probability, is perceived as temporary. For instance, as employment increases during an expansionary period, employers may increase their relative use of temporary workers to buffer core workers, who are more expensive to lay off, against a possible downturn. This first explanation for why companies are more likely to use temporary workers when the economy is booming is akin to a scale effect: the greater quantity of temporary work will result in greater employer demand for all temporary workers—agency temporaries as well as temporary workers hired directly by companies.[4]

A second explanation is related to the fact that many companies use temporary agency workers to fill vacancies until permanent hires are made, and in some cases recruit permanent workers from the ranks of the agency workers. The high prevalence of these practices has been well established by recent surveys (Abraham 1990; Houseman 2001b; Kalleberg, Reynolds, and Marsden 2003). Because agency temporaries are used for new hires and the accession rate moves procyclically, the share in temporary agency employment would also move procyclically. It is interesting to note that under this scenario, the share in temporary employment would increase during an expansion even if the nature of the increased workload is not temporary.

Finally, companies may substitute agency temporaries for direct-hire temporaries or for direct-hire recruits during expansions if the cost of agency temporaries relative to that of direct-hire temporaries or recruits declines when labor markets tighten. Here, the share in temporary employment would grow during an expansion not only because of an increasing accession rate but also because of an increasing share of new hires who are agency temporaries.

Regarding the last two explanations, there are various reasons why temporary agencies may enjoy a cost advantage in the recruitment and screening of temporary and permanent workers and why their cost advantage may increase when labor markets tighten. When labor markets are slack, it is relatively easy for companies to form in-house, on-call worker pools or to hire temporaries directly. When labor markets tighten, the supply of workers willing to accept temporary work or unpredictable hours shrinks at any given wage. Because temporary agencies pool jobs across companies, they can offer workers a better selection of schedules than can any company recruiting on its own and often they can offer workers steady employment, even if specific assignments with companies are temporary. Similarly, temporary agencies likely enjoy scale economies in recruiting and screening workers for permanent positions, especially in tight labor markets when companies have fewer unsolicited, qualified job applicants and a given recruiting expenditure yields reduced returns.

In addition, we argue that the use of temporary agency workers to fill temporary positions or to fill vacancies while companies recruit permanent employees is often advantageous to companies because the

[3]These termination costs can take various forms. U.S. employees have some rights to advance notice in the event of a mass layoff, and many state courts have granted workers legal protection against unjust dismissal in specific circumstances (Autor 2003). Moreover, companies may adopt personnel policies providing implied commitments of job security to regular employees in order to reduce turnover and build firm-specific human capital among a core set of workers. Independent of any legal restrictions, breaking these implied commitments may have costs, including lower morale, lower productivity, and higher turnover. The assumption that regular employees are more productive—or have some other cost advantage—is needed to generate an economy with both regular and temporary workers.

[4]Abraham (1988) and Kandel and Pearson (2001) distinguished between temporary and permanent or regular workers, but not between types of temporary workers. The distinction between workers hired through third parties—like temporary agencies—and direct-hire temporaries is a critical component of the theory and empirical evidence presented below.

companies may discriminate between temporary agency and direct-hire workers in the compensation offered. However, the direction of the wage discrimination, along with the precise mechanisms by which temporary agencies are able to recruit workers and companies are able to save on compensation costs, will depend on the labor market.[5] We outline two scenarios below.

Agency temporaries receive higher wages than direct-hire employees. Suppose, for now, that the workers an employer hires for a particular position are homogeneous in quality. The market wage rate, w, facing individual employers depends on the degree of labor market tightness, proxied by the unemployment rate, μ, $\delta w/\delta\mu < 0$. We assume that an employer's existing work force faces some costs in switching jobs.[6] Therefore, across some range, a decline in the unemployment rate will not force an employer to raise wages to prevent existing employees from quitting to take new jobs. Similarly, we assume that wage cuts cause serious morale and productivity problems and consequently an employer will not lower wages for existing employees when unemployment increases, at least across some range. With the standard assumption that workers within the firm receive the same wage (that is, that there is no wage discrimination), the marginal cost of a new hire at time t is simply the wage paid to existing workers when the unemployment rate has been stable or rising since the last hire. However, if a firm wishes to hire additional labor, L, and labor markets have tightened since it last hired, the marginal cost is the higher wage it must offer the new worker, plus the pay raise it must offer existing workers:

$$(1) \qquad w_t + \left(\frac{\delta w}{\delta \mu}\right)\left(\frac{\delta \mu}{\delta t}\right)L_t, \quad \frac{\delta \mu}{\delta t} < 0.$$

A cost-minimizing employer would prefer to wage-discriminate, offering higher wages only to new workers. With wage discrimination, the marginal cost of hiring additional labor is simply the wage of the new hire. It is generally assumed that employers do not practice wage discrimination, even if existing workers face high costs of switching jobs, because such a two-tiered wage system would be seen as unfair by workers and result in serious morale and productivity problems. However, we argue that any adverse morale and productivity effects are likely mitigated when new workers, who make more money than existing workers, are hired through a third party, such as a temporary help agency. These adverse morale and productivity effects might be lower if regular employees are less knowledgeable about temporary agency workers' wage levels than they are about other employees' wage levels. It may be more costly for employees to gain information about wage levels in other companies—in this case temporary agencies—than in their own company, particularly if the referring agency is not local. Additionally, employees may have fewer social contacts with agency workers than with other employees, and hence fewer opportunities to exchange wage information, particularly if agency workers are on short-term assignment. Alternatively, because the client company does not directly set the wages of the agency temporaries, employees may not fully blame their employers for the wage differentials.

Formally, suppose that the cost of hiring an additional worker and paying that worker more than existing workers is K if the worker is hired directly, but only k, $k < K$, if the worker is hired through a third party. Then, if the firm chooses to practice wage discrimination, it will only do so through a third party, like a temporary agency, and it will only practice wage discrimination in new hiring if the additional payments to existing workers, $(\delta w/\delta\mu)(\delta\mu/\delta t)L$, exceed the marginal cost of wage discrimination, k.

[5]We use the term "wage discrimination" to denote the payment of unequal wages or compensation to agency temporary and direct-hire workers who are assigned to the same job.

[6]These adjustment costs could include information costs in finding out wage rate differentials or preferences for the status quo. In models with heterogeneous labor, they could include firm-specific human capital for which the worker receives some additional compensation.

Thus, when unemployment is falling, and hence wages of new hires are rising, some employers may choose to practice wage discrimination through a temporary agency.[7]

The use of temporary agency workers may also make it possible for employers to discriminate in the composition of the compensation package offered in ways that would be illegal or impractical if all workers were employees. For instance, nondiscrimination clauses in the Employee Retirement Income Security Act (ERISA) and the Internal Revenue Service tax code make it difficult for employers to offer different benefits packages to different groups of full-time employees.[8] Temporary help agencies, which typically offer much lower benefits levels than client firms, likely attract some workers who place a low value on company-provided benefits. For instance, workers with health insurance coverage from another family member may place little or no value on health insurance benefits offered by their employer. Therefore, if the cash component of compensation in temporary agency jobs is higher than the cash component in regular jobs, it is possible that temporary agency workers place a higher value on the compensation from the temporary agency than on the compensation they would earn in a direct-hire position, even if the total cost of providing that compensation package is the same or less. In these cases, the use of temporary help agencies allows efficient sorting of workers by compensation preference and potentially benefits workers and employers alike.

Thus far, the choice between direct-hire and temporary agency workers has been posed as a one-time decision by employers seeking to increase their work forces. One might more realistically think of the process as a dynamic one in which firms temporarily use higher-priced temporary labor in order to buy additional time to fill permanent vacancies. Specifically, in a model in which workers have imperfect information about the distribution of potential wage offers, a firm's probability of filling a vacancy at any point in time would vary positively with the wage package and the unemployment rate.[9] Employers may quickly recruit high-priced temporary agency labor to fill vacancies, buying time to recruit permanent employees at lower wages.[10] Whether or not employers choose to use temporary agency workers for this purpose will depend on the price of agency relative to direct-hire workers, the time it would take to recruit direct-hire employees at lower wages, and the cost of leaving vacancies unfilled. In this dynamic context, the essential theoretical insight is the same as in the static model discussed above: it may be advantageous for employers to hire temporary agency workers in tight labor markets because they can discriminate in the wages they offer temporary agency and direct-hire workers and thereby avoid raising wages for existing employees.

Agency temporaries may receive lower wages than direct-hire employees. Consider now a labor market in which there are two types

[7]Bellemore (1998) developed a similar model of wage discrimination to study wage differentials between agency and regular nurses. Our model differs from his in that it does not require that employers have monopsony power in labor markets; rather, in our model, employers face rising wages over time if labor markets tighten.

[8]ERISA and non-discrimination clauses in the IRS tax code are designed to ensure that highly compensated individuals are not the primary beneficiaries of fringe benefits that constitute in-kind, tax-free, or tax-deferred income. See Houseman (2001a) for further discussion of these rules.

[9]The assumption that vacancies and thus employment levels are a function of the wage rate has been used in a number of theoretical models. For a review of these models, see Card and Krueger (1995).

[10]Note that even if agency temporaries are paid more, some workers may still prefer permanent positions. This is because temporary and permanent positions are not identical—the latter are associated with more job security and possibly more benefits. Thus, for some workers, the non-compensation aspects of a permanent job outweigh the lower compensation, or their personal valuation of the total compensation package may be higher for the permanent job.

of workers: L_1 are "good" workers, who have good work histories and are certain to work out; and L_2 are "risky" workers who have poor or no work histories, but, with probability ρ, will prove to be "good" workers, $0 < \rho < 1$. Wage levels for good workers are greater than or equal to those for risky workers, $w_1 \geq w_2$. Risky workers who prove themselves to be good workers receive w_1 after a probationary period. Risky workers who prove to be "bad" workers quit or are fired, with a cost f to the employer; f captures any direct costs of dismissal as well as recruitment and screening costs associated with turnover. Expected output is assumed to be a simple linear function of the two potential labor inputs: $E[Q] = L_1 + \rho L_2$.

When hiring, cost-minimizing employers will select a good or a risky worker depending on the cost per unit of output for each type.

$$(2) \qquad w_{1t} \gtreqless \frac{[w_{2t} + (1-\rho)f]}{\rho}, \quad \frac{\delta\mu}{\delta t} \geq 0.$$

$$(3) \quad w_{1t} + \left(\frac{\delta w_1}{\delta\mu}\right)\left(\frac{\delta\mu}{\delta t}\right) L_{1t} \gtreqless \frac{[w_{2t} + (1-\rho)f]}{\rho},$$

$$\frac{\delta\mu}{\delta t} < 0.$$

When the unemployment rate has been stable or growing, the marginal cost of hiring a good worker is just the wage paid to that worker. With f and ρ varying across firms, some employers may choose to hire risky workers during periods when the unemployment rate has been rising and labor markets are slack. When the unemployment rate has been falling, employers must raise wages to hire a good worker and so must also raise wages for existing employees, L_1. Consequently, for any given wage gap between good and risky workers, it is more attractive for employers to hire risky workers when labor markets have been tightening.[11]

Temporary help agencies potentially reduce the costs to employers of hiring risky workers in several ways. First, temporary agencies will raise ρ, the probability that a risky worker will work out on a particular job, if they are more efficient than their client companies in matching workers to jobs. Second, hiring a risky worker through a temporary agency may lower f, the cost of a quit or dismissal. By lowering recruitment costs, temporary agencies lower the costs of replacing workers and hence of using workers with low ρ. Further, temporary agency workers, who are not employees of the client company, are probably less likely than direct-hire employees to sue over a dismissal. The existence of such a pattern is supported by Autor's (2003) finding of a strong empirical link between the decline of employment-at-will in state law and the growth of temporary agency employment. Additionally, managers often find it difficult to dismiss a worker who displays poor or mediocre performance. Arguably, managers are less likely to offer permanent employment to a poor or mediocre temporary agency worker than they are to fire a similar direct-hire recruit. The benefit of using temporary agencies to screen workers for permanent positions, then, is a more productive work force.

Finally, a company may be unwilling to give more risky workers a chance at employment at its existing entry-level wages. While in theory it could offer lower wages to new hires, offering new employees wages sub-

[11]In this model, employers will find it more attractive to hire risky workers as labor markets tighten, unless the wage gap between risky and good workers narrows so much that it negates savings realized from the lower wages paid to existing workers. Although we do not discuss how w_1 and w_2 are set, we argue that the wage gap, if anything, is likely to expand as labor markets tighten. In slack labor markets, there is involuntary unemployment among both labor types; w_1 and w_2 become more compressed in slack labor markets, perhaps because of minimum wages or other social safety nets. Thus, employers are more likely to prefer good workers over risky workers in slack conditions. Even in tight labor markets, low-skilled disadvantaged workers experience substantial unemployment—again perhaps because of social safety nets—mitigating upward wage pressure on w_2 and, we argue, widening the gap between risky workers and good workers, at least in low-wage labor markets.

stantially lower than those of existing employees may cause morale and productivity problems among new employees. Moreover, the company may be legally unable to discriminate against new employees in the benefits package it offers them. Above, we argued that a company may use temporary agency workers in order to offer higher wages to new entrants. However, a company may also use temporary agency workers to facilitate offering new workers lower overall compensation.

In this model, the share in temporary employment will increase during expansions for two reasons. First, companies use agencies to screen risky workers, and the rate of new hires is pro-cyclical. Second, the cost of hiring good workers relative to risky workers increases as labor markets tighten, and so companies are more likely to choose to hire risky workers through temporary agencies than to hire good workers directly.

In this simple model, companies face a perfectly elastic supply of good and risky workers when making new hires, and choose to hire all of one type at any point in time. As discussed above, however, when workers face search and information costs, an employer's probability of filling a vacancy at any point in time varies positively with the wage offered. Under this scenario, an employer may follow a mixed strategy, hiring some good workers at relatively low wages directly, and filling remaining vacancies with risky agency temporaries.

Implications for Wage Growth

The preceding discussion suggests several avenues by which temporary agencies may relieve pressure on companies to raise wages in tight labor markets. Temporary help agencies may enjoy a comparative advantage in recruiting and placing workers, especially in tight labor markets. Thus, the substitution of agency temporaries for direct-hire temporaries and recruits may reduce pressure on companies to raise wages by virtue of this better matching. If companies use agencies simply because they have a comparative advantage in recruitment and screening, we would not expect to observe any systematic differences in the wages of agency temporaries and direct-hire employees in the same job.

However, evidence that agency temporaries earn systematically higher or lower wages than comparable direct-hire employees would suggest wage discrimination and a different or additional mechanism by which temporary agency use results in lower aggregate wage growth and unemployment. In some cases, temporary help agencies may be able to recruit qualified candidates by paying them more than companies pay employees. Here companies are effectively able to practice wage discrimination, paying higher wages to new entrants than to longer-tenure employees.[12] Companies may also use higher-priced agency help to buy themselves time to recruit regular workers. This practice is most likely to occur when the qualifications for a position are well-defined and easily observed or when the potential costs to an employer of trying out a risky worker are great. We argue that this practice is most likely to be associated with high-skill labor markets, where workers must meet clear educational or certification requirements to perform jobs and where the costs of having an unqualified person staff a position are high.

In other cases, temporary help agencies may make the use of less qualified, more risky workers acceptable to companies by lowering their wages or lowering the costs of firing and replacing them. In this case, temporary help agencies effectively expand the supply of labor and mitigate the need for companies to raise wages to attract more qualified applicants. This practice is most likely to occur when applicants' qualifications for a job are difficult to observe and where the costs of trying out risky workers are low—or are made low by the temporary

[12]The hypothesis that temporary agencies effect more efficient matching is the one primarily espoused in Katz and Krueger (1999). However, they also raised the possibility that companies would wage discriminate in favor of temporary agency workers.

agency. We argue that this practice is most likely to be associated with low-skill labor markets. In these markets, although most individuals are capable of performing the required tasks with minimal training, employers complain that many lack so-called "soft skills," such as honesty, punctuality, and the ability to get along with co-workers. These soft skills are difficult for employers to observe *a priori,* especially among applicants who lack a good work history.

Case Study Methodology

The evidence we present is based on extensive interviews conducted in six hospitals and five auto parts manufacturers (auto suppliers) in 1999 and 2000. We chose these two industries to represent a service industry and manufacturing industry, respectively, that play prominent roles in the U.S. economy and that use large numbers of workers, including agency temporaries, in nonstandard arrangements.[13] However, we had little or no knowledge about a specific organization's use of temporary agency workers prior to selecting it for case study. Although we cannot claim that this small sample is fully representative of organizations in the hospital and auto supply sectors, we sought to represent a variety of organizations within each industry. Our hospitals came from two distinct geographical regions: three were in Michigan and three were in North Carolina. The use of temporary agencies may be affected by an organization's size, with, for instance, smaller organizations having a greater incentive to take advantage of scale economies in recruiting that temporary agencies may offer. The hospitals in our sample varied in size from a small Michigan hospital with 450 employees to a large North Carolina hospital with 6,000 employees. An organization's use of agency temporaries may also depend on the presence of a union; one hospital in our sample was unionized.[14]

Although all of the auto suppliers represented in our case studies were from the Midwest, the suppliers varied across other important dimensions: size, presence of a union, and ownership structure. The auto supply establishments employed between 430 and 2,100 employees. Two of the plants were unionized. Two were locally owned facilities, one was a branch plant of a larger U.S. company, and two were subsidiaries of foreign-owned companies. Plants that are part of a larger corporation, particularly a foreign-owned company, may have personnel practices that differ from those of other plants and that affect temporary agency use.

Within hospitals, we interviewed the human resource director and managers in key functional areas: nursing, clerical and administrative support, laboratory work, food services and housekeeping, and clinical specialties (for example, radiology, physical therapy). In two hospitals, we conducted focus groups composed of permanent and temporary agency nurses. We also interviewed managers at several temporary agencies that supplied nurses and medical assistants to the hospitals we studied.

In the auto supply companies, we focused exclusively on production workers, who account for most of employment in these organizations. We interviewed the human resource director and production managers in each plant. At one facility, we were able to conduct two focus groups with workers: one with full-time production employees, the other with agency temporaries. We also interviewed the on-site representative of the temporary agency at the

[13]We also studied a representative public sector industry, primary and secondary public schools. We do not include public schools in this paper because relatively little use is made of agency temporaries in this industry. Based on case studies in all three industries, we discuss the effects of a broader set of nonstandard work arrangements on low-skilled workers in Erickcek, Houseman, and Kalleberg (forthcoming).

[14]Corporate structure could also affect incentives to minimize labor costs and use agency staff. None of the hospitals in our sample were private for-profit. Three were public and three private, not-for-profit.

three facilities having such a representative.

We developed a structured set of questions for each type of interview conducted in the two industries. This ensured that a core set of questions was asked in each case study. However, we followed up interviewees' responses to these core questions with additional questions that allowed us to clarify their answers and gather more information about particularly interesting practices. We tape-recorded and transcribed all of our interviews.

Finally, we collected data from each participating organization on employment levels, hours worked, wages, and benefits of employees for each occupation. Where available, we also collected information on the extent of an organization's use of temporary agency workers by occupation, the bill rate paid to the temporary agency, and the actual wage paid to the temporary agency worker.[15]

Hospitals' Use of Agency Temporaries in Tight Labor Markets

Pressures on hospitals to curb costs grew during the 1990s, due primarily to declining reimbursement from the federal government and insurance companies and the growth of managed care organizations. Against the backdrop of pressures to curb costs, hospitals faced especially tight labor markets in nursing and other specialized clinical occupations (Anderson and Wootton 1991; Buerhaus, Staiger, and Auerbach 2000).

Table 1 presents quantitative information on temporary agency use by occupation for the five hospitals maintaining such records. Hospitals used temporary agency workers for both high- and low-skill occupations. The extent to which agency temporaries were used for various occupations differed across hospitals. Registered nurses represent the largest single occupation in a hospital, and temporary agency RNs were used by all but one of the hospitals we studied. Although agency RNs generally accounted for a relatively small share of total RN hours worked in each hospital (column 1, Table 1), they accounted for a sizable share of the hospitals' total temporary agency expenditures (column 3). Hospitals also used temporary agency workers in other high-skill clinical occupations, such as radiographers, cardiovascular technologists, respiratory therapists, and technicians operating CT, MRI, and ultrasound equipment.

In addition, hospitals used temporary help agencies to obtain workers for relatively low-skill clinical occupations such as nursing assistants and patient sitters. Workers in the latter occupation watch extremely ill or confused patients and call for assistance when necessary. In all of the hospitals except M2, agency temporaries accounted for between 3% and 7% of total hours worked by these low-skilled nursing and medical assistants.

Finally, hospitals used temporary agency workers in low-skill support functions, particularly clerical work. Agency clerical workers in "unit administrative support" accounted for a sizable share (7–11%) of total hours worked in this occupation in three of the hospitals studied. Three hospitals reported using agency temporaries in food services and housekeeping functions. Though data on agency use in food services and housekeeping are available for just one hospital, figures for this hospital suggest extensive reliance on agency temporaries to staff these positions.[16]

Why Hospitals Use Agency Temporaries in High-Skill Clinical Positions

Our interviews with managers revealed several situations in which they used agency

[15]A data appendix describing these data and the construction of variables reported in this paper is available from the first author on request.

[16]One hospital kept no central records of its use of temporary agencies, and the other hospital kept no central records of agency use in housekeeping and food services, perhaps because the management of these functional areas was outsourced.

Table 1. Use of Temporary Agency Help in Hospitals, by Occupation.

Hospital	*Occupation*	*Within Occupations, % Hours Worked by Temps*	*Distribution of Temp Agency Hours across Occupations[1] (%)*	*Distribution of Temp Agency Bill across Occupations[2] (%)*
M1	*High-skill clinical*		35	59
	RN	2	27	41
	Pharmacists and related occupations	6	2	3
	Physical therapists	3	6	15
	Low-skill clinical			
	Nursing & medical assistants	5	35	25
	Clerical/administrative			
	Unit administrative support	7	30	17
	All occupations	—	100	100
M2	*Food service*	11	12	14
	Housekeeping	5	18	9
	Clerical/administrative		70	76
	Patient accounts	10	6	9
	Admissions workers	2	4	3
	Unit administrative support	11	60	64
	All occupations	—	100	100
NCI	*High-skill clinical*		22	43
	RN	0.7	10	20
	Imaging tech	3	4	10
	LPN	6	8	13
	Low-skill clinical			
	Nursing & medical assistants	4	20	17
	Clerical/administrative			
	Unit administrative support	8	58	39
	All occupations	—	100	100
NC2[3]	*High-skill clinical*		80	92
	Certified RN anesthetist	2	1	1
	RN	4	42	49
	Imaging tech	26	35	40
	Low-skill clinical		17	7
	Nursing & medical assistants	7	14	6
	Clerical/administrative			
	Unit administrative support	0.4	3	1
	All occupations	—	100	100
NC3	*High-skill clinical*			
	RN	0.1	7	19
	Low-skill clinical		81	71
	Phlebotomists	0.7	1	1
	Nursing & medical assistants	2	80	70
	Clerical/administrative			
	Unit administrative support	0.3	12	10
	All occupations	—	100	100

[1]Figures in this column report the percentage of total temporary agency hours worked in a hospital accounted for by each occupation.

[2]Figures in this column report the percentage of a hospital's total temporary agency bill accounted for by each occupation.

[3]Occupations that account for less than 1% of the hospital's expenditures on temporary agencies are not listed separately but are included in hospital subtotals in columns (2) and (3).

temporaries in nursing and non-nursing specialties. Workload variability was one factor. Hospitals are required by state codes to maintain minimum nurse/patient ratios, for example, yet hospital occupancy rates fluctuate widely. Hence, using tem-

porary help agencies enabled hospitals to add nurses as needed to satisfy peaks in demand, and to avoid overstaffing at other times. A second and related reason for using temporary staffing was to cover for absences of regular employees who were sick, on vacation, or on extended leave.

A third reason for using temporary help agencies, cited by managers in all of the hospitals in our study, was to temporarily fill a vacant position. Managers universally reported a shortage of nurses and workers in some non-nursing specialties, which led to a large number of unfilled vacancies on their staff and a greater demand for agency temporaries to fill these vacancies pending the recruitment of permanent staff. Some hospital managers reported that they explicitly recruited permanent staff from the pool of agency temporaries, while others reported rarely doing so.

Interestingly, although we predicted a negative correlation between firm size and temporary agency use owing to economies of scale enjoyed by the latter, the smallest hospital in our study (M2) was the only one not to use agency help in high-skill clinical positions. Like the other hospitals, it reported difficulty in filling these positions, but could not get reliable service from agencies, which, it claimed, chose to focus on larger, higher-volume clients.

Although the other five hospitals all used temporary agency personnel in high-skill clinical positions to handle an increase in workload, fill in for staff absences, or fill vacancies in permanent positions, they all viewed the use of temporary agency workers in these situations as a measure of last resort. They preferred to use in-house on-call staff or to fill vacancies with permanent employees. Hospital managers essentially cited two reasons for preferring in-house staff over agency temporaries: competency and cost. With respect to the first, most nurses and hospital administrators we interviewed were happy with the quality of the temporary agency staff, especially with "traveler" nurses, who typically work in highly specialized areas, such as critical care, and who are placed in hospitals around the country by national-level agencies for relatively long assignments (one to three months or more). However, some hospital administrators complained about the uneven quality of nurses placed by local agencies. Some also felt that agency nurses were generally less productive than regular staff nurses, but primarily because of their lack of familiarity with the hospital's organization.

Concern over the high cost of high-skilled agency temporaries (such as nurses) compared to in-house staff was echoed in our interviews with all of the hospitals. Hospital administrators unanimously believed that the bill rate charged by temporary agencies for nurses and non-nurse professionals exceeded the wage and nonwage labor costs associated with comparable in-house staff. The information we were able to obtain on the costs of using in-house versus temporary agency staff in high-skill occupations supports these assertions. Table 2 shows the average total cost of full-time, in-house staff and the bill rate charged by temporary help agencies, by occupation, for five of the hospitals in our study. In all cases where hospitals used temporary help agencies to fill RN or other highly skill clinical positions, the hourly bill rate for the temporary agency workers exceeded the average total hourly cost of full-time employees. In most cases the bill rate was substantially higher.

So why did hospitals use temporary agency workers rather than in-house staff if the former were possibly less productive and cost more? The answer given by the hospitals was a national "labor shortage" in nursing and some non-nursing professional occupations. Most hospitals indicated that they tried or were trying to build up their in-house on-call pools and were trying to recruit permanent staff. However, they were unable to recruit sufficient on-call and permanent full-time employees to meet their staffing needs, *by implication,* at the wages they were offering.

How were temporary help agencies able to recruit employees when the hospitals could not? Evidence from our interviews with hospital and temporary agency administrators and nurses in both Michigan and

North Carolina suggests that temporary help agencies recruited nurses and other hospital professionals, quite simply, by paying them more than hospitals did. In the words of a hospital administrator in Michigan, "One reason why temp agencies are able to get nurses and we're not is that they are paying them outrageous dollars that we won't pay."

That the hourly wage of temporary agency nurses and other temporary health care professionals was higher than that of hospital employees seemed to be a fact well known to hospital administrators and employees. Traveler nurses and other health care professionals who were placed by a national agency in a hospital for relatively long periods of time earned particularly high salaries. One North Carolina hospital was using traveler temporary help agencies to fill two out of four radiation therapist positions; in one case the traveler had been with the hospital almost a year. When asked why the temporary agency could attract employees when her hospital could not, a supervisor from this hospital replied,

> The temp agencies are paying them money, they are paying for their rent, they are paying their food, they're paying their car, they're paying their travel. They earn a lot more… and I can't compete with that. The gentleman who has been with us for 11 months now, I tried to offer him a position 9 months ago and I could not compete.

Other hospital administrators also noted the extremely high costs associated with traveler nurses and the fact that these individuals, while highly trained, were earning substantially more than in-house staff.

It appears that even some local agencies, which tend to supply less highly specialized health care professionals than do the traveler agencies, paid wages that exceeded the value of wages and benefits received by hospital personnel in comparable positions. One local temporary help agency in Michigan reported paying $29 to $30 per hour to its RNs, which compared to about $17 per hour received by the typical RN in the hospitals the agency serviced. The temporary agency did not provide its nurses with benefits, but the huge wage premium—on the order of 70%—exceeded the value of benefits a hospital employee would have received. When asked why the temporary agency paid such huge wage differentials, the manager at the temporary agency replied,

> Because that's what the market bears. It's very simple. If you look in the paper and read the ads [from other temporary agencies], they are just one after the other, $2,000 bonus, $30 an hour. I mean, we just couldn't recruit if we didn't pay that.

She also insisted that temporary help agencies had been paying their nurses large premiums over what hospitals paid for years. According to this same temporary agency manager, the temporary agencies attracted many nurses who had benefits from other sources and thus did not need benefits from their employer. Thus, even if the wage premium paid by the temporary agency does not exceed the market value of the benefits offered by hospitals, it is likely to be an attractive employer to those who place a low personal value on company-provided benefits.[17]

Of course, the higher cost of the temporary agency nurse is passed on to the hospital through the agency's bill rate. Does a strategy of hiring temporary agency workers at such high cost make sense? In the case of nurses and other professional hospital staff, the use of temporary help agencies effectively becomes a vehicle for hospitals to pay higher wages to quickly fill vacancies without raising the compensation of existing workers. Moreover, hospitals continue to try to hire permanent and in-house on-call staff, thereby using agency temporaries to buy time to recruit employees at the hospital's lower wage levels.[18] All else

[17]Supporting this argument, Bellemore (1998) presented evidence that temporary agency nurses value certain benefits less than direct-hire nurses do.

[18]Certainly, temporary agency and in-house staff positions are not homogeneous, with the latter offering more regular employment and, possibly, in the case of full-time employees, better benefits. Job matching models, cited above, would predict that the amount

equal, such wage discrimination likely lowers an organization's overall labor costs.[19]

Could hospitals practice such discrimination themselves without going through an intermediary? Our evidence suggests that temporary help agencies attract many workers who place a high value on wages relative to benefits. ERISA and nondiscrimination clauses in the IRS tax code would likely make it legally difficult for hospitals to exclude certain groups from benefits. Moreover, as argued above, while hospitals legally could offer new permanent employees or direct-hire temporaries higher wages than existing employees, the adverse effects of such a wage policy on employee morale and productivity would likely cancel out any savings on hourly wage costs.

Do hospitals avoid this adverse effect on morale by hiring through a third party? Our evidence on this issue from interviews with hospital administrators, nurses, and temporary agency managers is mixed. For instance, one hospital in North Carolina experienced serious morale problems among its nursing staff as a result of the wage differentials. In response to a question about whether the wage differential between agency and in-house nurses was causing problems, an administrator in this hospital replied,

> Yes, big time. It becomes a real irritant—a tremendous irritant for our nurses. They're saying, "Pay us the money, you are paying all this money out to a traveler, why aren't you paying us and giving us retention bonuses and getting us to stay?… And if the hospital can find money for travelers, they could find money for me."

In other hospitals, resentment among employees over the higher wages that agency temporaries made was mitigated by the fact that agency nurses eased pressures on them to work overtime and unpopular shifts. As a hospital administrator in Michigan put it,

> You know, there's always resentment when people are working side by side with someone they know is making more money than them for the same job. But by the same token, if the temps weren't here, their vacations would be canceled … they are doing the job that you didn't want to do. Remember, you could have had these hours and you didn't want them, because they are always offered to the staff first. If you continue to do that kind of education, then I think there is less resentment …

An administrator in another North Carolina hospital reported few morale problems in using temporary agency nurses, in part because the in-house nurses were "thrilled to have the help." This administrator also suggested that in-house nurses might not be fully informed about the wage differentials: "I don't know if they [agency nurses] are trained or what, but they've got enough sense not to sit around and brag about how much money they make." In interviews with other hospitals, we found that although hospital administrators and in-house nurses generally knew that temporary agency nurses earned more money than regular staff, they often were uncertain as to how much more.

Thus, while hospitals cannot fully avoid morale problems associated with wage differentials, using a third-party intermediary to pay higher wages to new workers likely mitigates the problem. Staff may not blame the hospital for the wage differential, since the hospital does not directly determine the wages of agency temporaries. Moreover, regular staff members are likely to be less informed about the wages of agency temporaries than they are about other employees' wages, and hence may not focus on this issue.

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of time it takes for a hospital to fill a job vacancy is inversely related to the wage level and the size of the wage gap between in-house and temporary agency positions.

[19]Formally, from equation (1) above, the marginal cost of a new hire is w_t with wage discrimination, which is less than $w_t + (\frac{\delta w}{\delta \mu})(\frac{\delta \mu}{\delta t}) L_t$ without wage discrimination. We should note that hospitals also tried to fill staffing gaps by having regular staff work additional hours, paying overtime premiums for some of these hours. The logic of working staff at overtime rates is the same as the logic of using high-priced temporary agency help. The hospital pays higher rates for the marginal hours, but not the infra-marginal hours. Additionally, the use of overtime buys the hospital time to recruit additional staff and possibly avoid wage increases for new and existing employees.

In summary, we must emphasize that in no case did hospital administrators actually say that they used temporary agencies to avoid raising wages of direct-hire staff. Instead, what they said was that they could not fill vacancies fast enough and that they "had" to use agency staff to fill in while they tried to recruit permanent employees or on-call staff. Their alternative was to raise wages to attract nurses and other professional staff more quickly, an alternative that hospital administrators generally did not view as viable, perhaps given the pressures they faced from HMOs and Medicare reform to lower costs. Given that hospital administrators tended to view the wages they offered nurses and other professional staff as relatively fixed, they indeed were constrained in their ability to hire new staff. They were able to relieve these constraints by using temporary agency staff, whose wages were more responsive to market forces. What we argue is that by using temporary agencies to fill nursing and other high-skill positions, hospitals were effectively introducing a two-tiered compensation system; from theory developed above, this was likely a cost-effective strategy.

This finding from our case studies in hospitals is consistent with evidence of wage differentials between temporary agency nurses and in-house nurses reported in Bellemore (1998). It also offers one explanation for recent stagnant wage growth in nursing. Both nominal and real wages of RNs rose slowly in the 1990s compared to the 1980s. From the National Sample Survey of Registered Nurses, average nominal earnings of full-time registered nurses rose at a rate of 6.5% from 1980 to 1992, while they rose at a rate of just 2.7% from 1992 to 2000. Moreover, while real earnings for full-time RNs increased at a rate of 2.4% from 1980 to 1992, they rose at a rate of just 0.1% from 1992 to 2000. Wage growth was especially low among hospital RNs, and this low wage growth cannot be attributed to changes in skill mix (Schumacher 2001). The stagnant real wage growth for RNs during the 1990s is particularly surprising given reports of a severe shortage of RNs in many areas of the country. Our case study evidence suggests that use of temporary agency nurses during the 1990s is one explanation for the stagnant real wage growth. Although temporary agency RNs in the hospitals we studied comprised a small share of the RN work force, they arguably had an important effect on wage growth by relieving pressures on these hospitals to raise wages for their employees.[20]

Why Hospitals Use Agency Temporaries in Low-Skill Occupations

Besides nurses and medical specialists, the hospitals in our study made extensive use of agency temporaries in medical assistant and clerical positions and sometimes in food service and housekeeping positions (Table 1). Hospitals reported hiring agency temporaries in low-skill positions both to meet temporary staffing needs and to fill vacancies while they recruited permanent hires. With respect to the first purpose, a hospital's need for patient sitters, who watch extremely ill or confused patients, is unpredictable and varies from day to day. The hospitals in our study all staffed patient sitters entirely through temporary agencies. Similarly, two of the three hospitals reporting agency help in clerical positions were staffing one-time special projects. It was unclear from our interviews why hospitals chose to use temporary agencies in these positions in lieu of forming their own on-call pools or hiring temporary workers directly. However, hospitals reported difficulty maintaining on-call pools for nurses in the economic environment prevailing at the time, and it is likely that they would have had more difficulty than temporary help agencies—which pool jobs across companies and enjoy scale economies in recruiting and screening—in attracting a temporary work force.

[20]Schumacher (2001) suggested that the growth of HMOs played some role in the low wage growth among RNs. By imposing greater cost constraints on hospitals, HMOs may have contributed to the lower wage growth and the development of shortages among high-skilled hospital staff, spurring the use of agency temporaries.

As with nurses and other high-skilled clinical staff, managers also used agency temporaries to fill vacancies in low-skill jobs while they tried to recruit permanent staff. As hospitals came under intense pressure to reduce costs, wages in these low-skill positions became uncompetitive with wages for low-skilled workers in competing sectors. In the words of one manager, "We had a problem attracting recruits. Frankly, McDonald's and Burger King were paying what we were and [workers there] don't have to go through the stress or the hassle or the hours or the customer service that they are required to perform here." The use of agency temporaries became a way to quickly staff positions while managers continued to try to recruit permanent employees at relatively low wages.

How were temporary help agencies able to recruit workers in low-skill functions when the hospitals could not? In a few cases, hospital managers or temporary agencies reported that, as with agency nurses, temporaries in low-skill positions received higher wages than permanent staff in comparable positions. More typically, however, temporary staff in low-skill positions reportedly earned about the same hourly wage as entry-level employees. Because employees usually received some fringe benefits, while agency temporaries did not, total compensation of agency temporaries would be lower in cases where hourly wages were the same. Although temporary agencies may have been better able than hospitals to recruit labor at any given wage rate, universal complaints from hospital managers about agency referrals in certain low-skill occupations suggests that for any given wage rate, agency temporaries were, on average, of lower quality than staff employees.[21]

The data we collected on the relative costs of employees and agency temporaries in hospitals are generally consistent with information reported in interviews. With respect to the total hourly cost of full-time employees and the hourly bill rate for agency temporaries, low-skilled workers differed considerably from RNs and other high-skilled clinical workers (Table 2). Although the hourly bill rate for agency temporaries was generally higher than the total hourly cost of employees in low-skill clinical positions, the differential was considerably less than that found in high-skill clinical positions.[22] Moreover, the hourly bill rate for agency workers in clerical, food service, and housekeeping positions was generally lower than the total hourly cost of full-time employees in these positions. Data for this last set of occupations, in particular, are consistent with the hypothesis that temporary help agencies effectively expanded the supply of workers for low-skill positions by lowering the cost to clients of using lower-quality or more risky workers.

Auto Suppliers' Use of Agency Temporaries in Tight Labor Markets

Like hospitals, auto suppliers have faced considerable pressure to lower labor costs. Although the auto industry experienced record sales in the late 1990s and 2000, these volumes were reached with generous incentive packages that depressed profits. To increase revenues, auto assemblers pressed their suppliers to lower their costs. At the same time that they were under pressure to reduce costs, first-tier auto sup-

[21]There were limits, however, to agencies' ability to attract low-skilled workers at very low wage levels. One hospital reported that neither it nor local temporary help agencies were able to recruit any housekeepers at the hospital's desired wage: $7 per hour. In this case the hospital offered a wage below the going rate for the lowest-skilled, riskiest workers.

[22]The higher cost of agency temporaries relative to in-house staff in low-skill clinical positions in three of the hospitals may be related to the heavy use of patient sitters, who have no counterparts in hospitals. Although these positions require little in the way of hard skills, patient sitters work with the most vulnerable population in the hospital and so require especially careful screening. Our data do not reveal whether the relatively high cost of agency temporaries in these positions reflected workers' wages or agency overhead.

Table 2. Comparison of the Hourly Cost of Full-Time Employees and Agency Temporaries in Hospitals, by Occupation.

Hospital	*Occupation*	*Average Total Cost, Full-Time ($)*	*Bill Rate, Agency Temporaries ($)*	*% Difference, Agency Temps vs. Employees*
Ml	*High-skill clinical*			
	RN	27.51	34.25	24
	Pharmacists and related occupations	26.51	27.40	3
	Physical therapists	25.56	53.77	110
	Low-skill clinical			
	Nursing & medical assistants	13.23	15.50	17
	Clerical/administrative			
	Unit administrative support	14.34	12.92	–10
M2	*Food service*	12.90	10.88	–16
	Housekeeping	11.27	10.94	–3
	Clerical/administrative			
	Patient accounts	15.33	17.02	11
	Admissions workers	14.48	13.32	–8
	Unit administrative support	13.94	14.74	6
NCI	*High-skill clinical*			
	RN	24.25	34.12	41
	Imaging tech	22.32	36.05	62
	LPN	16.67	28.15	69
	Low-skill clinical			
	Nursing & medical assistants	12.16	14.86	22
	Clerical/administrative			
	Unit administrative support	13.29	11.48	–14
NC2[1]	*High-skill clinical*			
	Certified RN anesthetist	55.12	60.00	9
	RN	27.82	40.00	44
	Imaging tech	23.69	40.00	69
	Low-skill clinical			
	Nursing & medical assistants	12.07	14.68	22
	Clerical/administrative			
	Unit administrative support	16.09	11.50	–29
NC3	*High-skill clinical*			
	RN	26.31	36.25	38
	Low-skill clinical			
	Phlebotomists	14.97	16.75	12
	Nursing & medical assistants	13.58	12.25	–10
	Clerical/administrative			
	Unit administrative support	14.58	11.50	–21

[1]Occupations that account for less than 1% of the hospital's expenditures on temporary agencies are not listed.

pliers faced tight labor markets and had difficulty recruiting and retaining workers. Based on our case study evidence, we argue that auto suppliers used agency temporaries to help lower labor costs and to screen workers for permanent jobs.

Table 3 summarizes some of the characteristics of the auto supply plants in our study and the extent to which temporary agency workers were used in production. Two of the plants were unionized. In one of these, the union contract prohibited the use of temporary agency workers, while in the other, the union contract strictly limited their use. Temporary agency workers were used regularly in production in the three nonunion plants. In two of these plants, agency temporaries comprised over 20% of production employment at the time of our interviews.

Table 3. Use of Temporary Agency Employment among Auto Suppliers.

						Agency Temporaries	
Company	*Product*	*Organization Type*	*Union*	*All Employees*	*Production Employees*	*Number*	*As Percent of All Production Employment*
A	Technically advanced interior and exterior equipment	Locally owned	No	1,400	1,000	30–60	5–6
B	Chassis systems	European–owned branch plant	No	750	450	125	28
C	Heat exchange component parts	Japanese subsidiary	No	2,100	1,521	348	23–25
D	Drive shafts	Branch plant of large U.S.–owned company	Yes	900	550	0	0
E	Auto body components	Locally owned	Yes	430	320	0–30[1]	0–9

[1]This plant had recently laid off all 30 of its temporary workers.

Most of the entry-level production positions in these plants were low-skilled to semi-skilled, requiring one to three days of informal on-the-job training. At the time of our interviews, production workers had been working long hours for several years, and the plants had been producing at or above their designed plant capacity. The unionized plants had exhausted their "call back" lists of laid-off union workers. Turnover and absentee rates had been on the rise. All of the human resource directors reported difficulty recruiting and retaining good workers in the strong economic environment.

The human resource directors and plant managers we interviewed listed several purposes for which they used temporary agency workers. The two most common were to accommodate temporary increases in workload and to screen workers for permanent positions. One company also used temporary workers to buffer regular workers in the event of a recession.

Buffering Core Workers

Reflecting the labor practices of its foreign, parent company, Company C was strongly committed to not laying off any permanent employees. According to the human resource director at this plant, this was the original rationale for using agency temporaries. Company officials believed that they needed to maintain about 10% of the production work force in temporary positions to avoid laying off employees in an economic downturn. At the time of our interviews, the fraction of their production work force coming from temporary help agencies was more than double their 10% target, indicating that other factors were also important in determining their use of agency help.

Accommodating Increases in Workload

Three of the companies used agency temporaries to meet sudden increases in production (A, B, and E, Table 3). Why did these companies choose to use agency temporaries rather than hire temporary workers directly, as was done by the unionized plant whose union contract prohibited the use of agency temporaries under any circumstances? In fact, traditionally these companies had hired on-call workers to meet such short-term needs. They substituted agency temporaries for on-call workers due to the extremely tight labor mar-

kets and the fact that everyone on the human resource directors' call-back lists desiring employment had long since found it.

Above, we outlined several reasons why companies might find agency temporaries more attractive than direct-hire temporaries in tight labor markets. Because agencies pool job orders across firms, they may offer more steady employment or better match the hours a worker desires than a single firm could offer to workers in an in-house on-call pool. This gives temporary agencies a comparative advantage in recruiting workers for temporary assignments, especially in tight labor markets. In addition, when labor markets are slack, companies simply call workers off a layoff list. When labor markets are tight, companies need to spend resources recruiting and screening workers, and temporary agencies, which enjoy economies of scale, may be able to recruit and screen more quickly and cheaply. Interviewees at some companies in our study in fact said that given tight labor markets and the size of their human resource departments, they would be unable to recruit and screen workers quickly enough to meet sudden, large production increases.[23] Finally, in tight labor markets, companies are under pressure to raise wages to attract temporary as well as permanent new hires. As argued below, the use of agency temporaries relieved pressure on companies to raise wages by facilitating the use of riskier workers.

Screening Workers for Permanent Positions

In all the firms in which we conducted interviews, agency temporaries assigned to limited production runs could apply for permanent positions on other production lines when their temporary assignments were complete. Moreover, all of the nonunion auto plants in our study explicitly used temporary agencies to screen workers for permanent positions. In two of these plants (B and C), new production workers were being recruited exclusively through temporary help agencies. The other plant, A, recruited through a combination of direct hires and temporary agencies. Specifically, this company directly hired applicants with good work histories in manufacturing; more "risky" applicants were told they must go through a temporary agency to gain employment at the plant.

There was wide variation across plants in the length of time it took for a temporary agency worker to be hired as a permanent employee. In the union plant, temporary agency workers had to be either dismissed or hired on a permanent basis after 30 days. At the other extreme, it was common for agency temporaries to wait for a year before being offered a permanent job at Company C.

Production supervisors all indicated that screening potential workers through temporary employment agencies lowered their hiring risks. In tight labor conditions, many entry-level workers have criminal records, a spotty work history, and little or no experience in a manufacturing setting. In addition, the work activity at several of these facilities required teamwork and good communication skills. It was important for production supervisors to select workers who could "fit" into their production teams. As one supervisor said,

> I have the opportunity to observe this person over a period of time. I don't have just a half-hour snapshot to go by as in an interview. I can get to know the person, get to know their background a little bit, get to know what their behaviors are, what motivates them, what possible problem areas I might have with the individual.

The key question is why these companies preferred to screen workers at arm's length, through a temporary help agency, rather than hire workers directly for a probationary period, as had been done traditionally.

[23]As with hospitals, however, there was no correlation between agency use and establishment size, as would be predicted by an economies-of-scale argument. The absence of such a correlation in such a relatively small and homogeneous sample does not necessarily imply economies of scale are unimportant, however.

We explored this issue in detail in our interviews. One hypothesis is that companies believe they are less likely to be sued by dismissed workers if the workers are the employees of a temporary help agency (Autor 2003). None of the managers interviewed in our case studies, however, cited concern over lawsuits as a factor affecting their companies' decisions to use temporary agency workers.

Another hypothesis is that managers find it difficult to fire workers on probation. When workers who display poor or mediocre performance are from a temporary help agency, managers can pass on to the agency the unpleasant task of firing them, or can simply refrain from permanently hiring them at the end of the agency-mediated contract. One manager interviewed in our study indicated that this was a substantial advantage of screening workers through temporary help agencies:

> There's a benefit [in using temp agency or contract workers] in the fact that it's a little bit easier to dismiss a contract employee.... For whatever reason they're not working out, the fit's not right, they're not making number, or their attendance is poor, I can call [the agency representative] and say, "End their assignment." You can give them reasons why, you don't really have to give them reasons why .... I mean, people in general, they hate to end people's jobs. I mean, that's not a pleasant thing to do. ... [For workers hired directly on probation] you can still end their employment, but it's not a very frequent thing that happens ... it's like, okay, now I have to face the person and say you didn't work out.

In this more subtle way, the use of agency temporaries may lower the costs of firing workers and result in a more productive work force.

A third hypothesis is that companies screen through temporary help agencies in order to lower the wages of workers during their probationary period. As outlined above, in tight labor markets companies have more difficulty recruiting qualified workers at any given wage rate. Companies could attract more qualified applicants by raising their wage rates, but would likely need to raise the wage for existing as well as new employees.[24] Alternatively, they could lower their standards and hire less qualified workers, offering them lower wages and fewer benefits. However, companies may be constrained in lowering compensation by internal wage scales or benefits regulations.

The cost data we collected from the auto suppliers are consistent with the hypothesis that companies screen new hires through agencies in part to lower wage costs during the probationary period. Table 4 reports data on the hourly wage made by agency temporaries, the hourly bill rate charged by the agency, the starting wage offered to permanent workers, and the total hourly wage cost for permanent employees, as available, in the five plants studied. Although the hourly wage of agency temporaries and employees was the same, by contract, in the union plant, the hourly wage of agency temporaries was lower than the starting wage of employees in all of the nonunion plants.

Moreover, for all four of the plants using agency temporaries, the temporary agency bill rate was lower than the total hourly cost of a permanent hire.[25] Three of the four companies using agency temporaries specifically acknowledged the cost savings in

[24]Indeed, one auto supplier reported that it briefly adopted this strategy of raising wages and trying to recruit experienced workers away from other employers, but abandoned it in favor of using agency temporaries.

[25]We compare the agency bill rate with the total hourly labor cost, including benefits, of employees.. Workers hired directly by the company typically did not receive benefits provided voluntarily by companies (for example, health insurance, pension plan, and life insurance) during their probationary period. Counting only mandatory benefit costs (for example, social security contributions, unemployment insurance, and workers' compensation), the hourly wage cost of new hires was still greater than the hourly bill rate of temporaries for the three nonunion companies. Moreover, when agency temporaries were hired, they were put on probation. Thus, hiring workers through a temporary agency became a way of extending the period without these benefits.

Table 4. Cost Comparisons of Agency Temporaries and Employees in Auto Supplies.

Company	*Hourly Wage, Agency Temps ($)*	*Bill Rate, Agency Temps ($)*	*Starting Wage, Employees ($)*	*Total Hourly Costs, Employees ($)*	*% Difference, Hourly Cost of Agency Temps vs. Employees*
A	7.90	10.90	10.60	13.78	–21
B	8.00	10.40	9.62	12.51	–17
C	7.50	10.88	13.28	18.22	–40
D	—	—	15.51	30.51	—
E	12.35	16.92	12.35	22.85	–26

the interviews. In Company C, the cost savings were particularly striking. According to the company's accounting department, a five-percentage-point reduction in the share of temporary agency workers would have increased labor costs by $1 million over the course of a year. At the two unionized companies, the unions opposed the use of agency temporaries on the grounds that the company would circumvent union wages and benefits by using cheaper temporary help. The numbers from our case studies support this concern. Human resource directors at both unionized companies indicated that they would like to use or increase their use of agency temporaries, but were constrained by their union contract.

In sum, the use of temporary help agencies in low-skill auto supply positions—as in many low-skill hospital functions—appeared to reduce pressures on companies to raise wages in tight labor markets by lowering the cost of using more risky workers, thereby effectively expanding the supply of potential labor to companies. This sharply contrasts with the situation for high-skill clinical occupations in hospitals, where agency temporaries earned considerably more than their hospital counterparts and billed agency rates were substantially higher than the total hourly costs of in-house staff. Thus, reduced pressure to raise wages for existing staff was one consequence of using agency temporaries in both the high-skill and low-skill jobs, but the path to this outcome differed considerably across those two groups of occupations.

Morale and Productivity Issues

The fact that hourly costs were lower for agency temporaries in low-skill production positions than for direct hires does not necessarily imply that it was cost-effective for companies to use agency temporaries. Agency temporaries might have been less productive than workers recruited directly by the company if the temporary help agency attracted a lower-quality worker than the company could have itself attracted or if being a temporary agency worker lowered a worker's morale, perhaps because of the lower compensation.

However, the use of temporary agencies in auto supply did not seem to be a cause of the poor quality of applicants, but rather a response to the shortage of qualified applicants at the wages companies were offering. For instance, Company A hired good applicants directly, but referred applicants it considered high risk to the temporary agency, which then supplied these workers to the company under contract. Managers at all of the auto suppliers expressed alarm at the decline in the quality of the applicants for production jobs, and they attributed this problem to the tight labor market.

Concern that temporary agency workers were less committed to the organization and therefore were less productive or more likely to quit than direct hires was limited at three of the four auto supply companies using agency temporaries. At these companies, the wage differentials between employees and agency temporaries were considerably smaller and the duration of tem-

porary employment much shorter than at the other company, C.

Company C, a foreign-owned subsidiary with a strong no-layoff commitment to its regular employees, paid high wages and benefits relative to its non-union competitors. With this strategy, it hoped to attract the best employees and avoid unionization. Its original rationale for hiring agency temporaries was to buffer its employees in the event of a slowdown. However, the company expanded dramatically during the 1990s and began using temporary agencies to rapidly fill vacancies. Given that the hourly wage cost of agency temporaries was dramatically lower than that of employees, company executives had been reluctant to reduce temporary agency employment. The company hired exclusively through the agency, and temporaries had to wait six months to a year or more before they knew whether they would be offered a permanent position. Through temporary agencies, this company effectively lowered labor costs for new hires, thereby steepening the wage tenure profile and capturing economic rents from workers.

Focus groups with production employees and agency temporaries at this plant revealed that the temporaries felt the system, in which they were paid substantially lower wages for a long period of time before being offered a permanent job, was unfair. However, this resentment did not appear to affect their productivity adversely: they knew that they had to be extremely productive in order to gain permanent employment at the facility. The one negative impact on productivity from the recruitment policies at Company C came from high turnover. Many good workers grew tired of waiting for the offer of permanent employment and quit. Whether the adverse productivity effects from this high turnover outweighed the cost savings associated with lower wages was being debated internally at this company at the time of our interviews.

Conclusion

The share of employment in temporary help agencies grew steadily during the expansion of the 1990s. A consistent and striking finding from our case studies is that employers increasingly turned to temporary help agencies in tight labor markets largely because of difficulties in filling vacancies. Hospitals used temporary help agencies to staff high-skill as well as low-skill jobs. Employers in both sectors used temporary agencies to staff permanent as well as temporary positions.

We identify several potential advantages temporary agencies offer employers in recruiting workers. Especially in tight labor markets, temporary agencies likely enjoy economies of scale in recruiting and screening workers. By increasing the efficiency of job matches, temporary help agencies may reduce pressure on companies to raise wages in tight labor markets, thereby lowering wage growth and increasing employment growth.

Additionally, we found evidence of substantial wage differentials between temporary agency workers, on the one hand, and direct-hire temporaries and direct-hire permanent recruits, on the other, indicating other reasons for companies' use of agency temporaries in tight labor markets. In hospitals, our evidence strongly suggests that temporary help agencies were able to recruit nurses and other specialized clinical staff by paying them more than they would have earned as hospital employees. We argue that hospitals' use of temporary agency help enabled them to raise the wages of new entrants without raising the wages of existing employees.

In contrast, we found little evidence that temporary agency workers assigned to lower-skill positions in hospitals had higher compensation than hospital employees in the same positions, and in production positions in auto supply companies we documented a substantial compensation disadvantage for temporary agency workers. Rather than raise wages and try to attract workers with good employment histories away from other companies, employers could use temporary help agencies to try out workers who, at least on average, were deemed more risky. We argue that temporary help agencies facilitated employers'

use of riskier workers by lowering their compensation and the costs of dismissing and replacing them. In turn, temporary help agencies effectively expanded the supply of labor and mitigated the need for companies to raise wages for new and existing workers. In such cases, lower aggregate wages are observed both because risky workers with lower expected productivity and wages are used through temporary agencies and because employers are able to avoid wage increases for their existing work force.

These three cost-saving benefits that temporary agencies potentially offer employers in tight labor markets—speedier job matching, wage discrimination in favor of new entrants, and lower costs of hiring risky workers—all would be expected to lower wage growth and increase employment growth in the aggregate economy. Katz and Krueger (1999) described their empirical result linking temporary help employment to low wage growth as "speculative." Through detailed case studies we are able to better understand the mechanisms by which temporary help agencies may reduce pressure on employers to raise wages in tight labor markets, and we conclude that such a linkage is, indeed, plausible.

In closing, whether one can generalize from the results of these case studies to the aggregate economy is an open question. Nevertheless, the evidence from our case studies provides insights into the potentially important role temporary help employment plays in tight labor markets, and we believe the subject warrants further study.

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