Difficulties of Regulation When Wage Costs are the Major Cost*

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1. INTRODUCTION

Most regulated industries undergoing deregulation are capital intensive. The primary concern in the existing cost-of-service regulatory framework is that guaranteed a competitive return on capital, the regulated firm has insufficient incentive to be cost efficient. In deregulating firms in such industries the return on capital is permitted to vary directly with the firm’s performance. Firms that restrain costs and increase revenue can earn higher profits, while those that do not see profits fall below levels assured under the prior regulatory regime. The assumptions in deregulating such industries are that the affected firm can control the bulk of its costs, can make decisions with little remaining governmental oversight, and can use high-powered performance pay incentive systems to encourage profit maximization. In addition, it is assumed that regulatory barriers will eventually disappear, allowing for open markets and free competition.

For the United States Postal Service a number of these assumptions do not hold. The Postal Service is labor rather than capital intensive, important postal costs are not directly controlled by the firm, the USPS will remain government-owned, at least in the short term, and barriers to competitive markets will be lowered but not eliminated. Consequently, deregulating the Postal Service using the private sector, price-cap model poses risks that are both unique and considerable.

* The authors appreciate helpful comments from Don Develin, Andy German, John Leeth, Maura Robinson, and Ed Ward, and computational assistance from Timothy Gill.
At the same time, regulatory reform in postal markets has some significant advantages over prior experiences in other industries. Most importantly, skepticism about the ability of deregulation to improve competitiveness and market efficiency has proved incorrect. Although not flawless, deregulation has been successful in airlines, trucking, natural gas, and telecommunications. We also have learned that reform legislation need not be technically perfect to achieve positive results. The key is for regulators to begin the process of opening markets to competition and allow market forces to drive the adjustment process. Finally, as discussed elsewhere in this volume, postal deregulation in other countries has achieved positive results.

In this paper, we primarily deal with two deviations from the traditional deregulatory model: the Postal Service is labor rather than capital intensive and the Postal Service does not directly control important elements in their cost structure. In FY 1999 labor costs accounted for 76% of total Postal Service costs, and over 80% of labor costs were costs for bargaining unit employees. A neutral interest arbitrator, rather than postal senior executives negotiating with the postal union, has the ultimate say over the postal wage cost structure; postal benefits are set in part by Congress; and government employment rules affect the hiring, promotion, and discharge of employees.

Our focus is on the unique difficulties that must be faced if a government-owned labor-intensive firm such as the Postal Service is to be deregulated using the price-cap model. We start by describing the industrial relations system in which postal wage rates are set. We then present econometric evidence on the competitiveness of postal wages. We find that postal wages are substantially in excess of wages paid for comparable levels of work in the private sector. Given its labor intensity, high compensation costs pose a major challenge to the Postal Service if postal markets were to become more competitive. We discuss how high wages pose a challenge to the effective redesign of Postal Service operations and markets, using as a prototype of postal deregulation, the legislation considered by the Congress during the 1999/2000 term, hereafter referred to as H.R. 22.

In particular, we analyze provisions in H.R. 22 with respect to the price-cap, equal mark-up, and structural separation between competitive and noncompetitive products. Although H.R. 22 did not become law, it is only a matter of time before regulatory change does occur. Since H.R. 22 contains most of the modern innovations in deregulation that are likely to be contained in future efforts, we focus our attention on it.

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1 U.S. Postal Service FY 1999 Annual Report.
2 All references to H.R. 22 refer to the bill reported out of subcommittee in April 1999.
The difficulties noted above do not constitute a case against regulatory reform. Quite the contrary, we believe that product market changes and technological innovations have made deregulation inevitable. Absent reform, the Postal Service and postal markets will fail to realize their potential to satisfy the needs of postal consumers.

2. THE INDUSTRIAL RELATIONS SYSTEM IN POSTAL SERVICE WAGE DETERMINATION

The Postal Service has a predominantly union labor force. Over 240,000 city letter carriers are represented by the National Association of Letter Carriers (NALC), and approximately 355,000 window clerks, mail sorting clerks and other mail processing crafts are represented by the American Postal Workers Union (APWU). Other smaller crafts, including rural letter carriers, mail handlers, postal police and nurses, are represented by other unions.

The Postal Reorganization Act (PRA) of 1970 authorized collective bargaining on wages, benefits and working conditions between postal management and unions under laws applying to private industry. However, Postal Service workers were prohibited from striking. In the event of an impasse, the parties face binding interest arbitration. The existence of binding arbitration means that postal labor costs and thus overall costs are not easily controlled by the Postal Service. Although the Postal Service has some freedom to alter staffing levels, significant changes in staffing would be difficult to achieve without agreement from the affected unions.

The arbitration process fundamentally changes the nature of the decision-making process. Knowing that interest arbitration is the last step to break an impasse, postal managers must cast their contract proposals in a manner that would be acceptable to an arbitrator. Ultimately, it is an arbitrator and not postal managers or the postal managers and unions in collective bargaining that determine the great bulk of postal costs. We know of no private sector industries where this is the case.

Competitive forces do operate in the Postal Service’s wage setting, but their influence is indirect. The PRA directed that the Postal Service shall pay wage and benefit levels comparable to those paid in the private sector:

“It shall be the policy of the Postal Service to maintain compensation and benefits for all officers and employees on a standard of comparability to the compensation and
benefits paid for comparable levels of work in the private sector of the economy."³

The PRA comparability mandate is very similar to private sector regulatory mandates, but with a unique twist. In capital intensive, private sector firms, cost of service regulation requires that the regulatory authorities set the return on capital. In the Postal Service, which is labor intensive, cost of service regulation requires that wage rates be regulated through the PRA comparability standard. It is the counterpart to rate-of-return regulation in capital-intensive private industries. As is true in private sector regulation, the goal of the comparability mandate is to force the Postal Service to operate as if it were in a competitive market, thus protecting the interests of postal consumers and ensuring universal service at cost efficient prices.

The existence of a wage or compensation premium, which we shall describe below, conflicts with this standard. Much of the postal wage premium is a consequence of a politically charged wage rate setting process that existed during the 1970s, particularly in the years following the passage of the Postal Reorganization Act. In fact the premium is lower today than it was 20 years ago. The reason is that in a landmark decision in 1984, Arbitrator Clark Kerr in 1984 accepted the statutory standard as applicable and controlling. The Kerr arbitration panel found that “discrepancies in comparability” existed and mandated an award intended to reduce the pay discrepancy by one percentage point per year over the life of the 1984-87 labor contract. Chairman Kerr characterized this intended rate of closing of the gap as “moderate restraint,” and went on to comment that since the premium “did not develop over-night … it would be a mistake to try to correct [it] too hastily.” In looking ahead, Chairman Kerr stated that moderate restraint would be necessary into the future the guideline of comparability.”⁴

The Kerr language and award were accepted as having precedential value by later panels. In 1991, the Mittenthal interest arbitration panel stated: “Notwithstanding the efforts of the Kerr board to establish a principle of ‘moderate restraint,’ a wage premium still exists. Hence, the need for continued ‘moderate restraint’ still exists.”⁵ In 1995, in the NALC interest arbitration proceedings, Chairman Stark acknowledged the need for

continued moderate restraint with wage increases “even more modest than those contained in the award of the Mittenthal Board.” In the 1995 APWU interest arbitration award, Chairman Clarke accepted the Stark wage pattern. In the 1996 NPMHU arbitration proceedings, Chairman Vaughn concluded: “I am persuaded by the evidence presented by the Postal Service that its NPMHU-represented employees continue to enjoy a wage premium compared to their counterparts in the private sector...”

In 1998, the Postal Service negotiated voluntary two-year agreements with the APWU and NPMHU. The Postal Service and the NALC went to interest arbitration primarily over the NALC demand that city letter carriers be assigned a higher grade. Although Arbitrator George Fleischli awarded the NALC the higher grade, he also stated that “[t]he upgrade issue is viewed as involving an internal inequity, not comparability with the private sector.”

Interest arbitration adds an extra dimension to postal deregulation. H.R. 22 is silent on the interest arbitration process. Consequently, interest arbitration would be left in place, but not given new guidance. The PRA statement on comparability would thus remain the only direct legislative statement on how the process should work. We return to the intersection of postal deregulation and interest arbitration when we discuss the “price cap” provision of H.R. 22.

3. POSTAL COMPENSATION AND COMPARABILITY: EVIDENCE

In this section, we present evidence on wage differences between postal workers and comparable workers and jobs in the private sector. The wage differential between postal workers and comparable private sector workers is first estimated from wage regressions using standard variables from the Current Population Survey (CPS). We then extend this CPS analysis to include variables measuring job skill requirements and working conditions from the Dictionary of Occupational Titles (DOT), permitting a comparison of postal workers to similar private sector workers in similar jobs. Finally,

we examine other labor market indicators such as the wage gains received by new hires into the Postal Service, comparative quit rates, the size of job applicant queues, and data on the employer’s cost of benefits in the Postal Service and the private sector.

### 3.1 The Postal Wage Premium

**Specification, Measurement and the Comparison Group.** Wage differentials are measured between postal workers and private sector workers. A comparison group of workers and jobs across all industries, conditional on worker and job characteristics, comports closely to the mandate of the PRA to compare postal wages to those for comparable “levels of work in the private sector.” More fundamentally, such a comparison corresponds to the economic concept of the long-run opportunity cost differential between wages in the Postal Service and what similar workers obtain in similar jobs throughout the U.S. labor market (Hirsch, et al., 1999).

In what follows, discussion focuses primarily on measurement of the wage differential for bargaining unit (i.e., unionized) postal workers. We calculate the postal wage premium from log wage equations estimated separately for each of four race/gender groups. All full-time wage and salary workers are included, allowing the wage structure (coefficients) to be determined on an economy-wide basis. The regression includes numerous measures of individual, labor market, and job characteristics. Industry dummies are included, interacted with union status. Unionized postal workers, referred to as the bargaining unit, form the omitted or reference industry, while a separate dummy is included for nonunion postal employees (as well as for other public sector worker groups). The postal premium is first calculated within each race/gender group based on the weighted average of the postal-private log wage differential across non-agricultural private sector union-by-industry groups. Following calculation of the premium by race/gender group, the premium is calculated by taking the weighted average across the four groups.

More formally, let:

\[
\ln W_{ij} = X_{ij} \beta_{jl} + Z_{ijm} \Gamma_{jm} + UNIND_{ijk} \theta_{jk} + NUIND_{ijk} \Phi_{jk} + \epsilon_{ij},
\]

(1)

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9 In this section we follow closely the presentation in Hirsch, Wachter, and Gillula (1999), who present evidence for 1994 developed in conjunction with the 1995 NALC and APWU interest arbitration hearings.
Difficulties of Regulation When Wage Costs are the Major Cost

where $\ln W_i$ is the natural log of hourly earnings for individual $i$; $j$ represents race/gender group; $X_i$ is a vector of person-specific characteristics (indexed by $l$) included in our base specification, with $\beta_l$ the corresponding coefficient vector; $Z_m$ is a vector of job-related skill and working condition variables (indexed by $m$) included in our expanded specification and $\Gamma_m$ is the corresponding coefficient vector; $UNIND_k$ is a vector of industry dummies (indexed by $k$) interacted with a binary union membership variable and $\theta_k$ is the coefficient vector; $NUIND_k$ is a vector of industry dummies interacted with a binary nonunion variable (it includes the same industries as $UNIND$ plus a dummy for nonunion postal workers) and $\Phi_k$ is the coefficient vector; and $\epsilon_i$ is a random error term with mean zero and a constant variance. The omitted reference group is bargaining unit postal workers, but differentials can be calculated as well for the weighted average of all postal employees.

The postal premium, $D$, is calculated from the union and nonunion industry coefficients, $\theta$ and $\Phi$, which measure the log wage differential between bargaining unit postal workers and each union-by-industry sector. We first calculate the differential for each race/gender group:

$$D_j = \theta_j w_{njk} + \Phi_j w_{nk},$$

(2)

where $w_{jk}$ are the employment shares of non-managerial and non-professional private sector workers across the union-by-industry groups ($\sum w_{jk} = 1.0$, with weights of zero attached to public sector industry dummies). After obtaining a premium estimate for each race/gender group $j$, we take the weighted average of the premiums, using postal employment as weights. That is,

$$D = D_j p_j$$

(3)

where $p_j$ represents the shares of postal employment in the four race/gender groups. $D$, which reflects the average premium across postal workers, is then presented following two downward adjustments, one to account for differences in night shift work between postal and non-postal workers and a second to adjust for differences in tenure. Estimates of $D$ are presented with

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10 Bargaining unit employment shares $p_j$ (in 1998) are .432 for white males, .213 for white females, .211 for nonwhite males, and .145 for nonwhite females. The CPS-DOT bargaining unit differential (i.e., $D$ with $Z$ included) is based on a specification with separate dummies for carriers, clerks, and other bargaining unit postal workers to permit calculation of craft-specific premiums. The overall CPS-DOT premium is the weighted average of the craft premiums.
and without inclusion of Z, a vector of occupational skill and working condition variables.

**Data.** The primary data source for our analysis is the 1998 CPS Outgoing Rotation Group Earnings File, which includes the sample from each month’s CPS who are administered the earnings supplement questions. Our estimation sample includes 88,361 non-agricultural full-time wage and salary workers, ages 16 and over.\textsuperscript{11}

The vector X from equation (1) includes standard variables from the CPS defined at the individual level. Included are a set of dummy variables for educational degree (13), marital status (2), hours worked (4), region (8), MSA/CMSA status and size (7), and occupation (14). Continuous variables included are potential experience (the minimum of age minus schooling minus 6, or age minus 16) and its square, and the local area unemployment rate (*Employment and Earnings*, May 1999). We supplement the CPS data set with variables from the *Dictionary of Occupational Titles* (DOT) – vector Z in equation (1). The DOT provides a broad range of information on the content and characteristics of detailed occupations based on evaluations by job analysts. We use the DOT data set and matching process developed by England and Kilbourne (1988), who provide a weighted mapping of 1977 Fourth Edition DOT variables to 1980 Census occupation codes. England and Kilbourne provide means of DOT variables for approximately 500 1980 Census occupational categories, calculated as weighted averages across roughly 12,000 DOT occupations.\textsuperscript{12} We match the England-Kilbourne data with 497 time-consistent 1980/1990 Census occupational codes and reassign codes for a few small occupations for which England and Kilbourne have missing data. We explicitly assign more recent DOT values to postal carriers and clerks.\textsuperscript{13}

\textsuperscript{11} We deleted those for whom: the Census had allocated earnings, industry, occupation, or union membership; hourly earnings could not be calculated; the industry designation was manufacturing n.e.c., there was missing information for variables used in the wage equation (a small number of observations); implied hourly earnings were less than $1; and usual hours worked per week exceed 60.

\textsuperscript{12} Special Census projects mapped CPS workers to DOT occupations, and 1980 Census of Population respondents to both 1970 and 1980 Census occupation codes.

\textsuperscript{13} For a description of the DOT, see Miller, et al. (1980). Explicit assignment of the DOT variables for postal workers allows us to account for 1986 changes in city carrier ratings for hazards (from not hazardous to hazardous) and required strength (from light to medium). These changes led to substantially lower premium estimates than were obtained absent such changes.
### Table 1: Means of Selected CPS and DOT Variables Among Union Postal Workers and Private Sector, Excluding Professional/Technical/Managerial

<table>
<thead>
<tr>
<th>CPS Worker Characteristics</th>
<th>Union Postal</th>
<th>Private, Excluding Prof/Tech/Mgr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White Male</td>
<td>White Female</td>
</tr>
<tr>
<td>Wage (1998$)</td>
<td>17.86</td>
<td>17.1</td>
</tr>
<tr>
<td>Age</td>
<td>44.6</td>
<td>42.8</td>
</tr>
<tr>
<td>Education</td>
<td>13.1</td>
<td>13.0</td>
</tr>
<tr>
<td>Experience</td>
<td>25.5</td>
<td>23.8</td>
</tr>
<tr>
<td>Some College and Above</td>
<td>.564</td>
<td>.530</td>
</tr>
<tr>
<td>Married</td>
<td>.732</td>
<td>.561</td>
</tr>
<tr>
<td>Sep., Div., Widowed</td>
<td>.144</td>
<td>.326</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DOT Occupational Variables</th>
<th>Required Training:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GED Scale (1 to 6)</td>
</tr>
<tr>
<td></td>
<td>Training (months)</td>
</tr>
<tr>
<td>Data (0 to 6)</td>
<td>3.32</td>
</tr>
<tr>
<td>People (0 to 8)</td>
<td>6.30</td>
</tr>
<tr>
<td>Things (0 to 7)</td>
<td>6.09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Required Aptitudes (ratings 1-high to 5-low):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerical Aptitude</td>
</tr>
<tr>
<td>Spatial Aptitude</td>
</tr>
<tr>
<td>Form Perception</td>
</tr>
<tr>
<td>Clerical Perception</td>
</tr>
<tr>
<td>Motor Coordination</td>
</tr>
<tr>
<td>Finger Dexterity</td>
</tr>
<tr>
<td>Eye-Hand-Foot Coord.</td>
</tr>
<tr>
<td>Color Discrimination</td>
</tr>
</tbody>
</table>

| Physical Demands (in %):                     |
| Climbing                                     | 7.69             | 0.66            | 9.43        | 6.61        | 25.95      | 5.60        | 20.96      | 7.10        |
| Stooping                                     | 12.42            | 1.99            | 15.41       | 8.59        | 46.05      | 18.08       | 40.21      | 24.33       |
| Reaching                                     | 96.67            | 91.96           | 96.20       | 94.63       | 89.20      | 85.76       | 91.50      | 88.37       |
| Seeing                                       | 87.59            | 90.35           | 83.12       | 87.47       | 63.28      | 59.53       | 61.37      | 61.74       |
| Talking                                      | 34.63            | 50.83           | 42.04       | 51.05       | 37.61      | 58.23       | 35.31      | 53.97       |
| Strength                                     | 2.68             | 2.31            | 2.66        | 2.43        | 2.78       | 2.02        | 2.77       | 2.21        |

| Environmental Conditions & Hazards (in %):   |
| Hazards                                      | 43.01            | 30.83           | 35.40       | 28.01       | 27.99      | 8.20        | 23.49      | 12.82       |
| Cold                                         | 2.94             | 0.03            | 4.22        | 3.66        | 1.97       | 0.59        | 1.99       | 0.87        |
| Heat                                         | 3.13             | 0.12            | 4.37        | 3.78        | 4.60       | 2.24        | 6.17       | 2.73        |
| Wet                                          | 3.92             | 0.35            | 4.90        | 4.15        | 6.68       | 3.66        | 8.63       | 4.72        |
| Noise                                        | 8.52             | 1.70            | 9.81        | 6.65        | 31.87      | 7.65        | 25.37      | 9.42        |
| Atmosphere                                   | 4.80             | 0.54            | 6.32        | 4.56        | 13.09      | 5.56        | 11.98      | 9.26        |
| Indoors & Outdoors                           | 53.90            | 38.38           | 46.76       | 35.30       | 28.55      | 7.33        | 25.51      | 7.26        |
DOT variables are grouped into the following categories measuring occupational skills and working conditions: training variables; aptitude factors; worker function scales; environmental conditions; and physical demands (see Table 1). Expanding the standard CPS specification to include the DOT addresses the legitimate concern that in CPS-only wage studies schooling and other available variables do not account fully for skills or compensating differentials associated with working conditions. Moreover, the DOT allows one to control directly for job skills, rather than experimenting with rent-related variables (e.g., union status and firm size) that are shaky proxies for skill.

Although it is important to control for job working conditions, neither the magnitude nor signs of these variables can be determined a priori since they depend on the marginal valuations of job attributes based on worker demand and employer supply. If tastes are sufficiently heterogeneous and workers sort on the basis of job attributes, compensating differentials will be small. Coefficients on individual DOT variables are not likely to provide precise estimates of compensating differentials since there is a high degree of collinearity among the variables and working condition variables may in part reflect unmeasured worker skills and income effects (Hwang, et al., 1992). That being said, descriptive evidence on the means of the DOT variables provides information on how job analysts rate postal occupations as compared to private sector occupations. Table 1 provides the means of the DOT variables for union postal workers and private sector workers, excluding professional, technical, and managerial occupations. Postal clerk and carrier occupations require lower levels of training and skill than do private sector occupations, on average. Required training time to achieve occupational proficiency is lower in postal than in nonpostal jobs, and aptitude ratings indicate required levels of verbal, numerical, and spatial aptitudes are lower than the average among private sector occupations. The DOT evaluates postal occupations as requiring a higher level of clerical aptitude than nonpostal occupations.

**Premium Estimates.** Postal premium estimates from the CPS and a survey of new hires are summarized in Table 2. The estimate of the bargaining unit postal wage premium from the CPS-only model for 1998 is .213 log points, a 23.7% wage advantage for postal relative to private sector non-postal workers with similar characteristics. The CPS premium

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14 Log differentials are converted to approximate percentage differentials by $100[\exp(D)-1]$, where $D$ is the log differential. “Premium” estimates presented to postal arbitration panels have been stated using the postal rather than private wage base. The CPS-only premium using the postal base is 19.2% (i.e., .213 converted to a percentage), representing how much less private sector workers are paid than comparable union postal workers or,
estimate includes the adjustment for tenure and shift work, which reduced the log differential from .296 to .213. The wage premium calculated for all postal workers (78.5% coded union and the remainder nonunion) is moderately lower -- .182 log points or 20.0%. The lower premium reflects the fact that non-bargaining unit workers do not receive wage premiums so large as do bargaining unit workers.

Table 2: Postal Log Wage Premium Estimates

<table>
<thead>
<tr>
<th></th>
<th>Log Differential</th>
<th>Postal Sample Size</th>
<th>Non-postal Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage Level Regression Estimates (1998): CPS-only:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Bargaining Unit</td>
<td>.213</td>
<td>575</td>
<td>87,786</td>
</tr>
<tr>
<td>CPS-DOT:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Bargaining Unit</td>
<td>.309</td>
<td>575</td>
<td>87,786</td>
</tr>
<tr>
<td>Postal Clerks</td>
<td>.294</td>
<td>208</td>
<td>87,786</td>
</tr>
<tr>
<td>Postal Carriers</td>
<td>.354</td>
<td>229</td>
<td>87,786</td>
</tr>
<tr>
<td>New Hire Survey Mean Log Wage Changes (1997-98):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Bargaining Unit</td>
<td>.306</td>
<td>1890</td>
<td>--</td>
</tr>
<tr>
<td>Postal Clerks</td>
<td>.337</td>
<td>914</td>
<td>--</td>
</tr>
<tr>
<td>Postal Carriers</td>
<td>.300</td>
<td>691</td>
<td>--</td>
</tr>
<tr>
<td>Mail Handlers</td>
<td>.223</td>
<td>284</td>
<td>--</td>
</tr>
</tbody>
</table>

The CPS-DOT analysis controls for occupational differences in required skills and working conditions. The postal wage premium is larger using the CPS-DOT specification than the 23.7% wage premium obtained using the CPS-only specification. To illustrate how the job variables work, we first enter the DOT skill-related variables, which causes the postal wage differential to rise substantially, from .213 to .351 log points. This reflects the positive impact of job skills on wages and the DOT’s assessment that postal crafts require lower levels of skill than the average private sector occupation. When we add DOT working condition variables, the wage premium is lowered modestly, from .351 to .309 log points (a 36.2% premium). This change reflects the small labor market rewards associated with most occupational working conditions, coupled with modest differences between postal and non-postal occupations in the level of work disamenities. The DOT estimate of a 36.2% premium strongly suggests that the CPS wage differential, absent control for job skill and working conditions, understates the magnitude of the postal wage premium.
3.2 Wage Increases of Postal Service New Hires

The wage analysis summarized above compares postal workers to similar private sector workers in similar jobs. An alternative approach is longitudinal analysis, which compares a postal worker’s postal wage with what that same worker earned in a full-time private sector job. This method attempts to control for otherwise unmeasured worker-specific skills transferable across jobs. We tabulate wage changes among postal job entrants based on the Postal Service New Hire Survey (NHS). The NHS analysis is based on information from employment applications for a large sample of new hires into the clerk, city carrier, and mail handler crafts between June 1997 and March 1998. The sample is restricted to new hires who were 25 years or older, were previously employed full-time in the private sector, and were working at their previous job within the 12 months prior to joining the Postal Service. To reduce measurement error, observations reporting earnings of less than $3.60 (the minimum wage for those with tip income) or more than $25.00 per hour were deleted from the sample. The final sample includes 1,890 postal employees, of whom 48% are clerks, 37% city letter carriers, and 15% mail handlers.

Evidence from the NHS is clear-cut, indicating large wage gains for postal entrants, and reinforcing the conclusion that there exists a substantial postal wage premium. The mean log wage change for new hires is .306, or 35.8%. Wage gains for clerks, carriers, and mail handlers are .337, .300, and .223, respectively. The NHS wage premium estimate of .306 is considerably larger than the CPS-only wage level estimate of .213. The NHS evidence corroborates the CPS-DOT finding that the postal premium cannot be accounted for by unusually high unmeasured skill among postal workers. To the contrary, postal jobs and postal workers appear to have low levels of unmeasured skill as compared to their private sector counterparts.

3.3 Additional Evidence on Postal Wage and Benefit Comparability

Evidence on nonwage benefits, job loss risk, quits, and applicant queues reinforces the conclusion that postal workers realize a substantial compensation premium. Economic theory and requirements of the PRA dictate that total compensation and not just wages be examined. We examine the total compensation premium by making adjustments to the CPS wage differential based on average benefits paid to private sector workers.

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15 If we deduct the average wage gain associated with job switching, the new hire premium is several percentage points lower (Hirsch, Wachter, and Gillula, 1999).
and to bargaining unit postal workers (Wachter, et al., 1999, pp. 23-27). Benefits included in this calculation are health, life and accident insurance, retirement plans, and the value of paid leave. The total annual cost for these benefits averages $15,363 among postal workers in 1998 and $8,147 for comparable private sector workers. Inclusion of benefits yields a postal total compensation premium about 8 percentage points higher than the wage premium.

A compensation premium for postal workers should result in low levels of quits among incumbent workers and high rates of applications (i.e., long queues). We find evidence for both. Quit rates are very low – as little as 1% during 1992-1994. In 1998, they were 2.5% for city letter carriers, and 2.2% for workers represented by the other two major postal unions (APWU and NPMHU). Higher quit rates in 1998 than in 1992-94 are attributable in part to a tight labor market and a modest narrowing of the premium. But the principal explanation is that there have been high rates of hiring, particularly among carriers, and most quits occur among new workers within the first 90 days of employment.

Comparable quit rate information is not readily available for the private sector. In order to compare current postal and private sector quits, we constructed a rough approximation of “turnover” rates for the private sector. The Bureau of National Affairs publishes a quarterly report entitled *Job Absence and Turnover*, presenting results from a survey of private and public employers (approximately 200-300 firms per quarterly survey). The BNA turnover rate measures permanent separations including quits, retirements, and firings, but excludes all forms of layoffs and the departure of temporary workers. A downward adjustment to the BNA figures based on estimated retirement rates from the March 1998 CPS produces an approximate economy-wide “turnover” rate, excluding retirement, of 11.4 exits per 100 workers in 1998. In order to make an “apples-to-apples” comparison of postal “turnover” to the BNA “turnover” rate of 11.4, rates were calculated for the Postal Service that include not only quits, but also “removals” and other separations (primarily from death and disability). For 1998, the postal “turnover” rate was 4.0 exits per 100 workers.

The Postal Service collects applicant data owing to the fact that postal jobs are filled from employment registers. The postal registers include those who have applied for a postal job and have taken and passed the placement exam (a single exam is used for seven different postal crafts). Postal registers are closed most of the time because of such a large number of applicants. Thousands of persons who are not successful in getting hired immediately remain in line for a future opening. Nationwide, the numbers on the registers are huge. At the end of May 1999, the number on city
carrier registers was 665,933 while the number on clerk registers was 889,387 (0.5% and 0.6% of the civilian labor force, respectively).\textsuperscript{16} Were these registers open more often, they would be far larger. Even in the highest wage cities the Postal Service is able to attract large numbers of workers, despite uniform postal pay throughout the U.S. As does the evidence on quit rates, information on postal applicant queues confirms our conclusion that the postal compensation premium is large and that postal jobs are extremely attractive to workers, as compared to private sector alternatives.

3.4 Wage Responses to Deregulation

In the subsequent section, we evaluate current proposals for deregulation in the postal product market. The experience in trucking, airlines, and other deregulated private sector industries offers some guidance as to future wage patterns in the Postal Service, with or without price cap regulation. In the private sector, product and labor market competition has limited the ability for workers to maintain labor rents made possible by regulation (for a recent overview, see Peoples, 1998).

Were the Postal Service to operate in a highly competitive product market environment, absent collective bargaining, compensation would fall toward competitive levels. The postal labor market that would evolve from currently proposed price cap reforms, however, might differ significantly from labor markets in other deregulated industries, at least in the short run. As long as the Postal Service remains owned by the government, wages would be determined not only by competition in postal product and labor markets, but also by regulatory constraints working through the current collective bargaining and interest arbitration mechanism.

4. DEREGULATION AND THE PRODUCT MARKET

There are two major factors that make substantial postal deregulation all but inevitable: the need to achieve and sustain cost efficiencies and the pace of change in postal product markets.

A failure of cost-of-service regulation is that it does not provide adequate incentives for cost efficiency. As industries in both the United States and abroad become more competitive, pockets of regulatory inefficiency become

\textsuperscript{16} Applicants may request to be placed on both registers.
more costly. This is particularly true in the case of the Postal Service where the most intensive users of mail, such as financial and retail sectors, are highly competitive.

Not surprisingly, the greatest proponents of postal market deregulation have been the major mailers dissatisfied with high costs, including the size and persistence of the wage premium and its impact on prices. At present the major mailers would be satisfied if the Postal Service responded to an improved regulatory framework by reducing the size of rate increases. Deregulation should achieve that result. If that did not happen, however, the major mailers also represent potential entrants or supporters of new entrants and would favor the opening or further opening of mail markets to competition.

Indeed, an important component of an infrastructure to sort and deliver mail is already present in the private sector. The infrastructure was developed in response to the worksharing programs initiated by the Postal Service. A majority of postal volume already undergoes some degree of presorting and prebarcoding. In Standard A, discounts encourage mail to bypass the Postal Service’s incoming processing and transportation network. Consequently, a significant component of the mail service has already been effectively privatized. In Standard A, the worksharing discount, as a share of the total cost of providing that mail service, is 55%.

The incentives of alternate delivery firms, such as those in the expedited mail and package markets, are different from those of the major mailers. An unregulated Postal Service could be a powerful competitor. Hence, some of the firms that specialize in the delivery part of the business are more likely to oppose rather than to push for deregulation.

A second factor making deregulation more likely is the pace of change in postal product markets. This is primarily a function of the vast changes in technology, including the Internet. Technological change blurs the boundaries between regulated and competitive sectors, creating the potential to offer new products or redesign old ones in fundamental ways. But a nearly unavoidable weakness of regulation is that it moves slowly and makes change costly, putting the regulated firm at a disadvantage in newly developing markets. As a consequence, the Postal Service itself may need regulatory relief to continue to prosper or, alternatively stated, to maintain its current size and employment levels.

At the same time, technological change raises the possibility that the Postal Service will suffer diversion in its flagship First-Class Mail product. In First-Class Mail, the Internet has the potential to become a new vehicle for delivering the most profitable mail – bills and payments.17 First-Class

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17 See Postmaster General Henderson’s comments on postal product markets in Barr (2000).
Mail is the core postal product, representing 51% of volume and 68% of recovered institutional cost (FY 1998 figures). Any material diversion of First-Class Mail to the Internet would be difficult to replace in terms of contributing to institutional costs.

With the rapidly changing mail market, the Postal Service and its customers require, and will ultimately get, a less cumbersome regulatory process. The alternative, assuming that diversion of First-Class Mail does occur in the near future, would put the Postal Service in a nearly untenable position. In this section, we evaluate whether the H.R. 22 structure could provide the appropriate regulatory process.

4.1 Price-Cap Regulation

One of the core elements of H.R. 22 is the use of “price caps.” The price cap imposes on a deregulated firm the requirement that price increases remain within a price cap. The cap or ceiling grows annually by an inflation factor, specifically the consumer price index (CPI) minus some industry productivity adjustment factor. In the words of H.R. 22, the concept behind the price cap is that the deregulated firm should bear the burden of excess costs and operating margin shortfalls, while realizing the benefits from any cost controls or operating margin enhancements.

For the price cap to work, a number of conditions must be approximately at work. The first is that the price cap index itself be structured to reflect the price changes of the inputs actually used by the Postal Service. Because of its high labor intensity, the Postal Service does not buy inputs that are approximated by the inputs behind the CPI. Consequently, the ability of the Postal Service to live within the CPI will be determined less by its own cost control efforts, and more by the trend in real wages. If real wages increase and postal relative wages remain unchanged, remaining within the price cap would be difficult. Conversely, if real wages decline, the reverse will be true.

The indexing problem, however, can be easily remedied by making the price cap formula a weighted index of the Employment Cost Index and CPIs for postal nonwage inputs. The second problem is more fundamental.

The second factor is whether postal management responds to the new incentives by becoming more cost efficient, thereby creating and maximizing the surplus that would result from price increases below the price cap. The dilemma is that since the Postal Service would retain public

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18 For a general discussion of price-cap regulation, see Braeutigam and Panzer (1993) and Braeutigam (1989). Kwoka (2000) discusses the applicability of price-cap regulation in the postal industry.
Difficulties of Regulation When Wage Costs are the Major Cost

ownership under current regulatory proposals, there would be no residual claimant in the form of private shareholders to push management to maximize the surplus. Although postal management would likely become more efficient, they would simply not be under the same pressure as private sector management.

The rewards and penalties faced by management will be determined in no small part by how the Postal Rate Commission (PRC) operates in the new regulatory environment. The PRC can attempt to serve as a proxy for private shareholders, but the PRC itself will confront not only pressures in the marketplace, but also political pressure from the various postal constituencies.

A third factor, also critical, involves the interaction of the price cap mechanism and the interest arbitration process. H.R. 22 is largely silent on the issue. Subsection 3733(g) states that nothing in the statutory requirements for the adjustment factor should affect any collective bargaining agreement, thereby making explicit that the PRC is not to interfere directly with the collective bargaining process. But no separate guidance is given to an arbitrator designing a collective bargaining contract in an H.R. 22 world, thus leaving § 1003 of the PRA controlling.

At the same time, H.R. 22 allows for contingencies under which the price-cap could be above the CPI. That is, the PRC could set the adjustment factor to be a positive increment to the CPI rather than an offset. The PRC can take this action if it believes it to be required “to enable the Postal Service under best practices of honest, efficient, and economical management to maintain and continue the development of postal services of the kind and quality adapted to the needs of the United States.” Presumably the PRC could determine that an excessive arbitration award could trigger such an event.

This effectively makes the PRC a second-round arbiter, deciding how to react to any arbitration award or other cost increases for that matter. However, if the PRC were to allow excess cost increases into prices, whether from collective bargaining or other sources, it would undo the incentive effect created by the price-cap. The core concept of the price cap is that it is a target that doesn’t get adjusted based on the performance of the regulated company.

To allow H.R. 22 to work, the PRC would need to take a tougher, pro-competitive stance, allowing only slight “give” in the system when absolutely needed. Used in this latter role, the PRC would serve as a safety valve of last resort, easing significant dislocations that were caused by circumstances entirely independent of the actions of the Postal Service. Interpreted in this fashion, the adjustment factor would never be adjusted to accommodate an interest arbitration award.
In the H.R. structure, the PRC would be to postal deregulation what Judge Greene was to the deregulation of telecommunications. This is a difficult role even for an independent judicial body. Whether the PRC could serve this function, given the political pressures it would face, is an open question.

In the long run, the solution to both the management incentive question and the interest arbitration question is to privatize the Postal Service, either in part or in full. European post offices are already moving in this direction. If their experiment is successful and if private sector competitors emerge in this country that are willing to enter now closed postal markets, there would be little reason for the Postal Service to remain owned by the federal government.

4.2 Pricing Provisions Involving Competitive Products

A second critical element of H.R. 22 is the pricing provisions involving competitive products. H.R. 22 divides the Postal Service’s current products into competitive and noncompetitive categories. The competitive category includes Priority Mail, Express Mail, mailgrams, bulk parcel post and international mail (excluding single-piece international mail). These products, as noted above, represent only a tiny fraction of postal volume, but they are rapidly growing markets. Also, Priority Mail is an important contributor to the recovery of institutional costs.

H.R. 22 allows the Postal Service to charge any rate for a competitive product subject to two minimum rate requirements. First, rates must cover the direct and indirect postal costs attributable to each competitive product, viewed individually. This is designed to prevent cross-subsidization. Cross-subsidization occurs when a regulated firm can use profits generated in protected markets to subsidize losses in competitive markets. By forcing each competitive product to cover its direct and attributable indirect costs, there would be no losses to subsidize.

The second pricing provision is the equal mark-up provision. The H.R. 22 “equal markup” provision would prohibit the ratio of revenue to attributable costs for the competitive category as a whole from falling below the comparable ratio for the noncompetitive category. In other words, the equal mark-up provision prevents nonattributable institutional costs from being applied disproportionately to noncompetitive products that are price insensitive. This is designed to protect competitors by assuring that the revenue base obtained from noncompetitive products is not used disproportionately to fund the development of competitive products.

The difficulty with the pricing provisions is that the market sets the price of competitive products. As a general matter, a multi-product firm will set prices so that cost coverage differs across products, with lower markups for
products with greater price elasticities. If the PRC were forced to violate this rule, the Postal Service would not be able to compete in the affected markets. The equal mark-up provision would place greater restriction on the Postal Service’s operations than current practices followed by the Postal Rate Commission. Currently, the appropriate distribution of institutional (i.e., non-attributable) costs is left to the discretion of the ratemakers, who balance the various factors specified in the Act.

An equal mark-up provision would be particularly costly to the Postal Service because of the existence of the postal wage premium. The wage premium means that postal labor costs will be higher than those paid by competitors. With the equal mark-up provision, the wage premium would be equally loaded into the competitive and noncompetitive products. Consequently, the Postal Service might find the price floor attached to its competitive products would be higher than the market price.

Eventually, the impact of deregulation will be to reduce the wage premium. But this will take time and so flexibility is needed. The area of cost allocation across postal products is an area where the PRC has a great deal of experience and should be given some discretion in apportioning costs.

4.3 Structural Separation of Competitive from Noncompetitive Products

An alternative mechanism is to build in a structural separation between competitive and noncompetitive products. At one level, this is envisioned in the current bill since the PRC would be given the mandate to apportion costs so that all costs would be attributable to one or another category. Treating costs in this manner could take some of the sting out of the equal mark-up provision if the noncompetitive wage premium costs were assigned primarily to the noncompetitive category.

A step beyond the structural separation envisioned in the current version of H.R. 22 is to have the Postal Service establish a wholly owned subsidiary that contained all of the competitive operations. Incorporated separately, the competitive subsidiary would have a shared obligation with the parent not to intermingle funds. Operations and services could remain integrated, with each unit separately contracting for services (e.g., mail handling and delivery) performed by the other and accounting for such costs. Profits or losses earned by either would have to be maintained on the separate accounts. This approach introduces a separate fiduciary obligation on the Postal Board of Governors to manage each as separate entities.

This system has positive incentive compatibility characteristics. With a mandate to avoid intermingling of funds, the desirability of cross-
subsidization is greatly reduced. All operations and services could remain integrated, but costs could not be shifted back and forth and revenue would have to remain in the unit that made the sale. Consequently, the Postal Service would be reluctant to favor the subsidiary over the parent, or vice versa, because of the resulting financial vulnerability of the non-favored unit. Over time, the parent and the subsidiary would each have separate boards of directors or governors, adding further mechanisms to prevent intermingling or inappropriate cost allocations.

A step behind the wholly owned subsidiary concept, the Postal Service would sell a minority share of the competitive subsidiary to private shareholders. This step would dramatically increase the enforcement properties of the system by harnessing corporation fiduciary duty law. In such parent-subsidiary-type cases, private shareholders can sustain a derivative private action on behalf of the subsidiary by claiming that the board of directors of the subsidiary violated their fiduciary duty to the subsidiary by agreeing to an inappropriate allocation of costs that harmed the subsidiary. In such cases, the defendant board of directors of the subsidiary would have the burden of showing that the cost allocation was entirely fair to the subsidiary. Even in the case where the costs were allocated inappropriately in a manner that favored the subsidiary, minority shareholders could state a cause of action involving a failure of the subsidiary board to act lawfully.

Pushing the structural separation to the point of establishing a separate subsidiary would introduce a further dynamic pulling the regulators and postal markets toward the ultimate privatization of the Postal Service. The subsidiary, as envisioned, would be government owned, but incorporated as a private company, subject to all of the rules of private companies. The interest arbitration mechanism would also be replaced by traditional collective bargaining.

5. CONCLUSION

Statutory reform of the postal regulatory apparatus is inevitable. Competitive pressures affecting mail users and technological change affecting core postal operations cannot be accommodated under the present slow moving cost-of-service regulatory apparatus.

Postal deregulation, when it occurs, will be very different from that experienced in the private sector with transitional effects that cannot be predicted from past experience. Unlike private sector firms affected by deregulation, the Postal Service is heavily labor intensive. The Postal Service is a government owned firm. A neutral interest arbitrator, rather than postal senior executives, often has the ultimate say over the postal wage
rate structure; postal benefits are set in part by Congress; and government employment rules affect the hiring, promotion, and discharge of employees. None of this would change in the short run under H.R. 22-type deregulation.

Once set in motion by H.R. 22 or its progeny, however, the dynamics of increased competition will carve out a path that will drive the deregulation process toward a more open, unregulated market. The stresses in postal markets will be considerable as the deregulation process unfolds. This will be greatly felt in the industrial relations system given the existence of a substantial, noncompetitive wage premium.

Ultimately, deregulation is likely to be as complete as in telecommunications and transportation. As part of this, it is also likely that the Postal Service will be privatized. As deregulation unfolds, the Postal Service will find itself competing with private sector firms that provide alternatives to the Postal Service’s own processing and delivery of mail. Many if not most of these firms will be nonunion. Assuming some diversion of First-Class Mail to the Internet, the Postal Service will be forced into a cost reduction mode of operation to bring its institutional and operating costs into alignment with its revenue. In the end, the rents generated by the regulatory process that allowed cost inefficiencies, will disappear.

That said, the Postal Service will remain a formidable competitor and a large presence in mail markets. If it can successfully navigate the deregulatory currents, it will emerge a leaner, but not necessarily smaller company. There won’t be regulatory rents to share, but the payouts that can result from success in meeting competitive challenges can be larger. If the Postal Service is less successful in making the transition, it will emerge a leaner and smaller company with smaller payouts.

REFERENCES