MOTOR BUS DEREGULATION AND THE GENDER WAGE GAP:

A TEST OF THE BECKER HYPOTHESIS

Ann Schwarz-Miller
Old Dominion University

and

Wayne K. Talley
Old Dominion University

INTRODUCTION

Over forty years ago Gary Becker [1957] argued that firms in more competitive industries have less ability than other firms (i.e., neither the profits nor the latitude) to discriminate in either wages or hiring. Support for the argument regarding pay practices is found in studies by Heywood [1987] and Peoples [1994], which show that lower industrial concentration correlates with less racial wage discrimination; support regarding hiring is found in studies by Comanor [1973], Haessel and Palmer [1978], Luksetich [1979] and Ashenfelter and Hannan [1986], which show a negative relationship between industrial concentration and the relative employment of minorities and females.

The Becker hypothesis can also be tested within a single-industry framework. Transportation industries which have undergone systematic change and deregulation, in particular provide fertile ground for such tests. The increase in competition introduced through deregulation should have made it increasingly costly for employers to discriminate in pay and employment practices. Several studies of the deregulated trucking industry provide support for this hypothesis: Rose [1987] found a decrease in the black/white earnings differential under deregulation; Peoples and Saunders [1993] also found that deregulation corresponded with reduced black/white earnings gaps; and Heywood and Peoples [1994], focusing on employment discrimination, determined that deregulation brought a substantial increase in the hiring of black drivers. More recently, Heywood [1998] analyzed the impact of deregulation on racial earnings differentials in the telephone industry as well as three transportation industries (trucking, air and rail), finding significant declines after deregulation for all of the industries except airlines.[1]

This study also provides a test of the Becker hypothesis with respect to labor market discrimination in a deregulated transportation sector, the motor bus indus-

Wayne K. Talley: Economics Department, Old Dominion University, Norfolk, VA 23529. E-mail: wktalley@odu.edu

try, by examining the impact of the regulatory environment on relative earnings. However, it differs from previous studies by focusing on the gender wage gap as opposed to the racial wage gap. The presence of a gender-based earnings differential within an industry may be the direct result of pay practices of individual firms that reflect the strength of their discriminatory preferences and latitude to engage in wage discrimination. It may also arise through firm-level employment discrimination that reduces the aggregate demand for female workers and depresses their relative earnings.[2] As others have pointed out (e.g., Heywood and Peoples [1994]), the elasticity of labor supply to a firm is crucial in determining the extent to which the employer engages in wage, employment or both forms of discrimination. The higher the supply elasticity, the greater the degree of employment discrimination, and the smaller the effect on wages.

Since the human capital requirements for driving a bus are comparatively low, the elasticity of labor supply to firms in the motor bus industry is expected to be high, though not infinite.[3] It follows that any gender gap emerging under regulation is not likely to have been produced through wage discrimination alone, but to a large extent as the consequence of employment discrimination. Likewise, much of the hypothesized decline in the gender earnings differential after deregulation should be the result of a reduction in employment discrimination.[4] The actual estimation results suggest that the female/male wage gap of motor bus drivers declined following deregulation, thereby providing the first supportive evidence of the Becker hypothesis with respect to gender discrimination within a deregulated transportation industry.

The study is structured as follows: An overview of the regulated and the deregulated motor bus industry is presented. The following section presents the data and the wage model. Then, estimation results are presented, followed by conclusions.

THE MOTOR BUS INDUSTRY UNDER REGULATION AND DEREGULATION

The motor bus industry consists of privately-owned firms (carriers) providing for-hire bus services such as scheduled regular-route intercity passenger service, charter passenger service, charter tour service, retail tour service, and bus package express service.[5] The industry's scheduled regular-route intercity service is dominated by one carrier, Greyhound Lines, which has the only nationwide bus network. By 1990, it accounted for 75 percent of the service's revenues and 43 percent of its passengers.[6]

The Motor Carrier Act of 1935 placed the industry under the authority of the Interstate Commerce Commission (ICC), which regulated entry, exit, fares, financial activities, and service levels of carriers involved in interstate commerce. Although regulation limited intra-industry competition, the industry experienced a significant decline in market share and financial performance following World War II as more affluent passengers switched to other transportation modes.[7] Seeking flexibility to compete more effectively in the intercity passenger market, the industry sought regulatory reform. In 1982, the Bus Regulatory Reform Act (BRRA) was passed, substituting competitive market forces for regulatory decree in determining fares and service.[8]

Rather than improving, the industry's financial performance grew worse following passage of the BRRA and its miles of service declined even though the number of carriers increased.[9] Faced with competition from new, lower-cost carriers, large incumbent carriers sought cost reductions through franchising and wage concessions, and in the case of Greyhound consolidating accounting operations, selling bus terminals as well as reorganizing the company.

Labor cost reduction has been a particular concern. The motor bus industry has historically been highly unionized, with the Amalgamated Transit Union (ATU) representing labor in much of the industry. ICC regulation (e.g., entry and rate restrictions) provided the ATU with the opportunity to acquire more bargaining power than possible in a more competitive environment, with higher union driver wages and union premiums over nonunion wages the outcome [Schwarz-Miller and Talley, 1994].

Following the passage of the BRRA, wage concessions to Trailways Lines (the second-largest motor bus firm) and the outcomes of subsequent rounds of labor negotiations at Greyhound coupled with Greyhound's recurring financial difficulties suggest that the union's ability to generate wage premiums was eroding. In 1982, the ATU signed an agreement with Trailways freezing wages below Greyhound's wages. Greyhound, in response, also sought contract concessions. After 18 months of unsuccessful negotiations and a bitter and sometimes violent 13-month strike, Greyhound ultimately succeeded in obtaining most of the wage and benefit concessions requested.[10] In late 1985, further concessions were sought by Greyhound. However, three separate contract proposals were voted down. In response, the Greyhound Corporation sold its domestic bus operations in 1986, ending 73 years in the U.S. motor bus industry. The new owners of Greyhound then succeeded in getting the existing driver force to accept a contract based upon 30 cents per mile for senior drivers, down from 37.34 cents a mile for pre-strike hires and 32.7 cents per mile for new hires under the 1983 contract [Fravel, 1991].[11]

The new management team sought to reverse the decline in ridership by increasing its responsiveness to the market.[12] In July 1987, Greyhound also purchased Trailways, which had previously filed for bankruptcy. The acquisition was approved under Greyhound's professed commitment to industry-wide cooperation and revitalization.[13] By 1989, the ridership of the combined Greyhound and Trailways system was up, and both service and finances were improving. At the end of 1989, labor negotiations were initiated in anticipation of the March 1990 expiration of the existing labor contract, with the ATU seeking a restoration of all wage reductions since 1982 plus significant benefit improvements. The negotiations reached an impasse; and on March 2, the union called a strike. Greyhound continued to operate nationwide, using existing employees willing to work and replacement drivers, which led to widespread violence against property, employees and customers. The costs and losses in revenue related to the strike ended the company's financial recovery and forced it to file for bankruptcy (i.e., for protection under Chapter 11) in June, 1990. The union continued to maintain an official strike status, inflicting further losses on the company, but led to no earnings improvement for those who returned to work.

In October 1991, Greyhound emerged from bankruptcy protection. The new management team initiated extreme cost-cutting measures, reducing the number of employees, routes, and services and decreasing the bus fleet from 3,700 to 2,400 buses. By the end of 1992, Greyhound had earned a profit, the first since 1989. However, again the success was short-lived; the cutbacks subsequently led to losses in business. For the first half of 1994, Greyhound reported an operating revenue decline of 12.6 percent and a net operating loss of $61.4 million.[14]

This institutional discussion clearly suggests that competitive forces together with weak industry conditions produced strong downward pressures on driver wages during the deregulatory period, substantiated in an empirical study by Schwarz-Miller and Talley [1994]. What remains to be seen is whether the decline was accompanied by the hypothesized improvement in the relative wage position of female drivers.

DATA AND WAGE MODEL

Current Population Survey (CPS) data of the Bureau of the Census for the years 1973-95 (except for 1982) are utilized to examine the influence of motor bus deregulation on gender wage differentials of bus drivers.[15] The 1973-81 data are from May CPS tapes; the 1983-95 data are from 12-month CPS tapes.[16] The sample includes individual white motor bus drivers who worked 30 or more hours per week and provides information on usual weekly earnings, usual hours worked, union status, and a set of demographic characteristics. A control group of nontransport operatives is also utilized together with the motor bus driver data for part of the analysis.[17]

Means and standard deviations for the bus driver sample are provided in Table 1. Of particular importance is the increase in the share of drivers who are women—from 0.163 during the regulatory period to 0.318 following deregulation. This result lends support to the contention that women received greater access to jobs in the motor bus industry subsequent to deregulation. Other sample statistics (not shown) indicate that the gain in the percentage of women employed after deregulation occurred exclusively in the union sector, providing indirect evidence that women were also differentially obtaining greater access to better paying jobs. The overall percentage of jobs in the union sector fell from 0.631 to 0.394 over the same periods, which is consistent with an increasingly competitive environment favoring lower-wage firms.

The following equation is used to investigate the gender wage differential of motor bus drivers:

$$(1)\ \ln WAGE_{ij} = \alpha_1 FEMALE + \alpha_2 DREG + \alpha_3 FMDREG + \alpha_4 UNION + \alpha_5 UDREG + \alpha_6 UNEMPL + \Sigma \beta X_{ijk} + \epsilon_{ij}$$

where the index i represents the ith individual and j represents the jth year and where ln$WAGE$ is the natural log of hourly earnings in 1982-1984 dollars.[18] $FEMALE$, $DREG$, $FMDREG$, $UNION$, and $UDREG$ are binary variables representing being: (1) a female driver, (2) a driver in the deregulatory period, (3) a female driver in the deregulatory period, (4) a union driver and (5) a union driver during deregulation, respectively. $UNEMPL$ is the regional unemployment rate, which captures business

TABLE 1
Motor Bus Sample Descriptive Statistics[a]

Variable	Rregulation[b]	Deregulation[c]
SCHOOL	12.65	13.05
	(1.98)	(1.96)
EXPER	12.33	25.64
	(20.33)	(12.28)
EXPERSQ	5.63	8.08
	(6.04)	(6.89)
MARRIED	.794	.777
	(.405)	(.417)
NORTHEAST	.377	.416
	(.486)	(.493)
SOUTH	.167	.133
	(.373)	(.340)
WEST	.286	.259
	(.453)	(.438)
FEMALE	.163	.318
	(.370)	(.466)
UNION	.631	.394
	(.484)	(.489)
WAGE	9.50	7.13
	(4.05)	(3.12)
N	204	1,280

a. Arithmetic means with standard deviations in parentheses; N represents sample size.
b. Years 1973-81.
c. Years 1983-95.

cycle effects on earnings.[19] The control vector X includes a constant $(X_0 = 1)$ and variables representing years of schooling completed ($SCHOOL$); years of potential experience, measured by age $- SCHOOL - 5$, and years of potential experience squared/100 ($EXPER$ and $EXPERSQ$); and binary variables equal to 1 if the driver was married ($MARRIED$) and working in the Northeast ($NORTHEAST$), South ($SOUTH$), or West ($WEST$), as opposed to working in the North Central region of the country.

The coefficients that are central to the test of our hypothesis are α_1, which measures the female/male log wage differential during regulation and α_3, which measures the change in the female/male log wage differential in the deregulatory period. If the employers of bus drivers were able to exercise a taste for discrimination during the regulatory period due to the protection from competitive pressures afforded by industry regulation, the coefficient α_1 will be negative. If the increased competition during deregulation weakened this ability, the relative earnings position of females should have improved, i.e., α_3 is predicted to be positive.

Other critical coefficients are: α_2, the log wage differential for nonunion drivers in the deregulatory period relative to the regulatory period, α_4, the union-nonunion log wage differential for drivers during the regulatory period, α_5, the change in the union-nonunion log wage differential for drivers during the deregulatory period, and $\alpha_2 + \alpha_5$, the log wage differential of union drivers during deregulation compared with

regulation. The coefficient α_4 is expected to be positive, reflecting a wage premium for union workers during the regulatory period. The increased competition during deregulation is predicted to depress the real wages of unionized drivers. Therefore $\alpha_2 + \alpha_5$ is predicted to be negative. The signs of α_2 and α_5 are ambiguous: The impact of the potential increase in the demand for less-costly nonunion drivers under deregulation may be offset by the spillover of displaced union workers into the nonunion sector.

Equation (1) is also estimated separately for union and nonunion drivers, with the *UNION* and *UDREG* variables omitted. Hence, in the union equation, *DREG* measures the log wage differential for union workers in the deregulatory period relative to the regulatory period and *FMDREG* measures the change in the log wage differential between female and male union drivers under deregulation. Here, the sign predictions for *DREG* and *FMDREG* are negative and positive, respectively.

For the nonunion equation, the interpretations of *DREG* and *FMDREG* are the same as in the original union/nonunion equation. The sign prediction for the *DREG* coefficient is ambiguous. The coefficient of *FMDREG*, however, is predicted not to differ from zero. We know that the segments of the industry that received artificial protection from competition through regulation were highly unionized. If nonunion firms were disproportionately in less-protected, more competitive sectors of the motor bus industry, then wage differentials there should have been small. For this reason and due to the continuance of competitive pressures on nonunion firms, no change is predicted in the post-regulatory wage differential between females and males.

ESTIMATION RESULTS

The estimation results bear out the theoretical expectations of the Becker hypothesis. Estimates of the equations for all drivers, union drivers and nonunion drivers appear in Table 2. The gender variable *FEMALE* is negative in all three equations and highly significant in the pooled and union equations. This result suggests that female motor bus drivers earned considerably less that males prior to deregulation, particularly in the union sector. The union equation indicates that females earned 40.5 percent less than comparable males, while the other two equations indicate that female drivers in general and nonunion drivers earned 20.3 percent and 12.9 percent less, respectively, than their male counterparts in the regulatory period.[20]

Following deregulation, the female/male wage gap narrowed as predicted, even as real male driver earnings declined significantly in the increasingly competitive environment. The most striking improvement in the relative earnings of female bus drivers occurred in the union sector. The coefficient of *FMDREG* is positive in all three equations, but largest and statistically significant in the union equation, which indicates a drop in the gender wage gap to 20.9 percent or approximately one-half its pre-deregulation level. The union equation also reveals absolute wage gains (7.6 percent) by female drivers, contrasting sharply with the 18.2 percent decline in real male hourly earnings. The existence of a larger, more significant gender wage gap in the union sector during regulation and the narrowing of this gap for union but not nonunion drivers during the deregulatory period is consistent with the argument that the effects of the regulatory environment would be most strongly felt in the unionized

TABLE 2
Hourly Earnings Equations for White Bus Drivers[a], 1973-95

Variable	All	Union Drivers	Nonunion Drivers
Constant	1.71*	2.19*	1.70*
	(17.01)	(16.0)	(13.3)
SCHOOL	.009***	.014***	.009
	(1.94)	(1.88)	(1.45)
EXPER	.006*	.002	.009*
	(3.80)	(.92)	3.94
EXPERSQ	-.012*	-0.002	-.019*
	(-3.91)	(-.52)	(-4.09)
MARRIED	.008	-.002	-.021
	(.36)	(-.05)	(-.72)
NORTHEAST	.059**	.022	.063***
	(2.38)	(.62)	(1.90)
SOUTH	-.011	-.149*	.058
	(-.36)	(-3.12)	(1.39)
WEST	.097*	.040	0.125*
	(3.61)	(1.02)	(3.48)
FEMALE	-.227*	-.519*	-.138
	(-3.21)	(-3.94)	(-1.63)
DREG	-.241*	-.201*	-.266*
	(-4.38)	(-5.40)	(-4.18)
FMDREG	.122***	.284**	.085
	(1.66)	(2.08)	(.96)
UNION	.437*		
	(7.71)		
UDREG	.013		
	(.21)		
UNEMPL	.006	.002	.003
	(.78)	(.19)	(.29)
R²	.384	.153	.055
R̄²	.378	.138	.042
N	1,483	631	852

a. t-statistics are in parentheses; N represents sample size.
* Significant at the 1 percent level, ** significant at the 5 percent level,*** significant at the 10 percent level.

part of the industry.[21] Overall, these results clearly suggest the growing accessibility of better-paying jobs in the motor bus industry to female drivers under deregulation, as predicted.

In order to test whether the observed improvement in the relative earnings of female drivers under deregulation was specific to the motor bus industry or simply a reflection of trends in the general economy, variants of the original union and nonunion equations were re-estimated to include a control group of nontransport operatives. In these equations *BD* is a binary variable equal to 1 if the worker is a bus driver and *BDDREG* is an interaction variable equal to 1 when the worker is a bus driver during deregulation. The binary variables *FMBD* and *FMBDDREG* equal to 1 when the individual is a female bus driver and when she is a female bus driver during deregulation, respectively.

TABLE 3
Hourly Earnings Equations for
White Bus Drivers and Nontransport Operatives[a],1973-1995

Variable	Union Drivers and Operatives	Nonunion Drivers and Operatives
Constant	1.82*	1.26*
	(64.9)	(65.4)
SCHOOL	.030*	.046*
	(18.5)	(37.1)
EXPER	.013*	.020*
	(15.1)	(27.6)
EXPERSQ	-.019*	-.030*
	(-11.1)	(-20.3)
MARRIED	.037*	.070*
	(4.76)	(11.4)
NORTHEAST	-.061*	.031*
	(-8.23)	(4.18)
SOUTH	-.070*	-.037*
	(-8.56)	(-5.61)
WEST	.050*	.047*
	(5.24)	(5.93)
BD	.133*	-.048
	(4.69)	(-.91)
FEMALE	-.333*	-.324*
	(-32.1)	(-30.7)
FMBD	-.158	.188**
	(-1.25)	(2.29)
DREG	-.065*	-.118*
	(-8.94)	(-14.4)
FMDREG	-.006	0.003
	(-.40)	(.25)
BDDREG	-.234*	-.312*
	(-7.24)	(-5.60)
FMBDDREG	.279*	.088
	(2.12)	(1.03)
UNEMPL	-.003	-.002
	(-1.25)	(-.99)
R²	.243	.264
R̄²	.242	.264
N	10,692	18,107

a. t-statistics are in parentheses; N represents sample size.
* Significant at the 1 percent level, ** significant at the 5 percent level.

Wage equation estimates including the control group of nontransport operatives appear in Table 3. The union equation indicates that male bus drivers earned a significant premium (14.2 percent) over nontransport operatives prior to deregulation. Females earned significantly less than males in both occupational categories. The strong negative coefficient (−.333) of FEMALE translates into a real earnings deficit of 28.3 percent for union female nontransport operatives compared with unionized males. The FMBD coefficient is also negative, but not statistically significant, imply-

ing a similar earnings gap between male and female bus drivers prior to deregulation.

DREG and BDDREG are both negative and highly significant, clearly indicating a deterioration in union driver earnings subsequent to deregulation that exceeded the secular trend. The lack of significance of FMDREG implies an earnings decline for the female control group comparable to that of their male counterparts. By contrast the coefficient on FMBDDREG is positive and significant, providing evidence that the improvement in female driver hourly earnings relative to male earnings during deregulation revealed in the driver-only equation reflected more than economywide changes affecting the gender gap for drivers.

The nonunion equation estimate reveals a gender gap for nonunion drivers prior to deregulation that was substantially smaller than for union drivers. This is consistent with the hypothesis that greater discrimination will occur in firms in less competitive markets, where employees are likely to be unionized. The very small and statistically insignificant coefficient of FMBDDREG suggests that the pattern of wage change subsequent to deregulation for nonunion female drivers did not differ from the secular result, consistent with the theoretical prediction of ambiguity. We contend that nonunion drivers were probably more likely to be working for small low-wage firms with more price-sensitive demand and therefore lacking the latitude to engage in wage discrimination during regulation; deregulation should therefore have had relatively less impact on the behavior of such firms.[22]

One question that has not been directly addressed in this study is the extent to which federal equal opportunity policies may also have been a factor in the improved earnings status of female drivers. Although relatively little documentation is available, government interest in affecting employment practices in the motor bus industry, both by firms and the ATU, appears to have been less intense than for other segments of the transportation sector [Husbands, 1998]. However, since major policies were in place prior to our pre-deregulation observation period and the industry was the target of legal suits during that period, it can be inferred that it was the heightened competitive environment and not just the legal framework that played the critical role.[23]

CONCLUSION

The empirical findings provide strong support for the hypothesis that motor bus deregulation, by creating an increasingly competitive environment, making discrimination more costly and providing greater incentives for firms to employ female drivers, ultimately leading to an improvement in their wage position relative to males. The earnings status of unionized white female drivers relative to white males improved significantly subsequent to deregulation, with female wages increasing even as the wage level for male drivers declined. In the nonunion sector, in which the regulatory environment was expected to have less impact on earnings, the gender gap was smaller to begin with and was virtually unaffected by deregulation. The relative improvement of female driver wages following deregulation holds up in wage equation estimates that incorporate a control group of similarly-skilled workers out-

side the transportation industry, for whom there was no comparable improvement in the female-male earnings gap.

NOTES

1. Using a less restrictive version of the wage equation, Husbands [1998] reaffirmed Heywood's result for the three transportation industries. As an explanation for the disconformity of the air industry outcome, Heywood suggests that the scope for discrimination during the regulatory period may have been limited due to a very high level of non-price competition bidding away profits. Consequently, deregulation may have produced a smaller change in the competitive environment than elsewhere. Husbands argues that the continuing high level of concentration after deregulation may also have attenuated the linkage between deregulation and racial wage convergence. Card [1998] mentions both non-price competition during regulation and continuing market power following deregulation as responsible for the relatively small overall decline in the relative earnings of airline workers following deregulation. This follows logically, since the competitiveness of the market should affect a firm's ability to pay a wage premium in the same way as its ability to discriminate.

2. The effects of such employment discrimination on the industry earnings gap would be intensified if the ability to pay higher wages were systematically related to the ability to engage in discrimination, as seems likely. Employment discrimination would then manifest itself through women differentially being denied access to the better paying jobs in the industry.

3. Even in the absence of discrimination, employee search costs create upward-sloping labor supply curves, with the curves becoming less elastic as employment discrimination increases. See Black [1995].

4. Indeed, Husbands [1998] argues that a stepped-up competitive environment should place particular pressure on firms in industries with elastic labor supply curves such as the motor bus industry to stop indulging in this facet of discrimination. Presumably this is because firms that do so can hire women or minorities without bidding up wage costs, gaining a substantial advantage over those that persist in discriminating.

5. Charter passenger service refers to selling transportation only to groups of individuals rather than to individuals. Charter tour service includes services such as meals, lodging or attractions in addition to transportation. Retail tour service is a tour sold on an individual basis.

6. The next three largest firms accounted for 8 percent of the revenues [General Accounting Office, 1992, 19].

7. In 1945, its share of total U.S. intercity passenger traffic (measured in passenger-miles) was 7.9 percent; by 1980 it had dropped to 1.8 percent [Talley, 1983, 251] and its operating ratio (the ratio of operating expenses to operating revenues expressed as a percentage) was 93.2 percent.

8. The major provisions of the BRRA relate to entry, exit, pricing and discriminatory state regulation. The BRRA substantially reduced both entry and exit controls of the intercity bus industry. The burden of demonstrating that the granting of new operating authority was not consistent with the public interest was switched to those who opposed it. Reform pricing was phased in over time by employing a "zone of rate freedom," within which fares were not investigated, suspended, modified, or revoked by the ICC unless found to be discriminatory or predatory. After 1985, the Interstate Commerce Commission (ICC) lost authority to regulate fares set independently (i.e., not collectively) and not deemed to be discriminatory or predatory. The BRRA also gave the ICC the power to preempt state regulatory commission decisions that deny higher fare requests. For further discussion, see Farris and Daniel [1983].

9. Although bus miles of charter and other non-regular route service increased (since most new carriers operated charters and tours exclusively), this increase was offset by the decrease in scheduled regular-route service. From 1984 to 1985 alone Greyhound and Trailways decreased their total miles of service by 10 percent and 3 percent, respectively [Ramsdell and Burns, 1986]. In 1981 the motor bus industry consisted of 1,470 carriers; by 1984 this number had more than doubled to approximately 3,000 carriers [American Bus Association, 1985, 16].

10. The new December 1983 contract called for a 7.8 percent wage cut, a 4 percent employee pension contribution, a freeze on cost of living adjustments, larger employee contributions to health plans,

and flatter seniority increments [Fravel, 1991, 38]. In return, Greyhound agreed to give permanent jobs to replacement drivers only after all striking drivers were offered their old positions.

11. Further, an incentive pay plan provided extra pay for increases in bus load factors (i.e., number of passengers per number of bus seats).

12. Steps included: (1) fare reductions, (2) a significant increase in the advertising budget, (3) improvements in service (e.g., terminal security, terminal cleanliness, driver training, and customer service), and (4) a significant increase in capital expenditures (e.g., garage infrastructure, terminal repairs and improvements).

13. Subsequently, numbers of independent bus carriers consolidated terminal facilities with Greyhound, in many cases leaving their own terminals, to run their buses out of terminals owned or controlled by Greyhound. Terminal consolidations played an important role in revitalizing the industry, since they reduced operating costs and improved the quality of service, as passengers could take the "next bus out" regardless of which carrier provided the service. Industry-wide cooperation also included independent carriers consolidating telephone information services with Greyhound and the policy of reciprocally honoring tickets.

14. Conditions appear to have improved under the new management team brought in mid-1994, with a profit reported by the third quarter of 1995.

15. Data from year 1982 was omitted because union status information was not collected in the survey. For this study, CPS data have three shortcomings: First, the CPS survey typically does not collect information on respondents' employers; thus, the study is unable to control for firm characteristics. It is therefore impossible to distinguish between wage discrimination and employment discrimination by higher-paying firms as sources of wage gaps. This means that the study is restricted to an analysis of the net wage advantage of white males and deregulation's effect on it [Peoples and Saunders, 1993]. Second, CPS data contain labor earnings, but typically not benefits; ideally an analysis of the total compensation packages of earnings and benefits would have been preferred. Third, CPS data typically do not distinguish between urban and rural locations for workers.

16. Twelve-month CPS tapes in which the union question was asked were not available prior to 1983.

17. The control group of nontransport operatives was chosen because it contains comparably-skilled workers not directly affected by motor bus deregulation. The nontransport operatives include: lathe and turning machine operators (704), welders and cutters (783), and production inspectors and examiners (796). The numbers in parentheses are the occupational codes assigned by the U.S. Department of Commerce to these occupations. Nontransport operatives were also used as a control group by Hirsch [1988] in his study of the impact of the deregulation on truck driver wages.

18. Hourly earnings are the ratio of "usual weekly earnings" divided by "usual hours worked per week" deflated using the Consumer Price Index (CPI).

19. *UNEMPL* are the civilian unemployment rates for the four regions for the observation years, and are taken from the U.S. Bureau of Labor Statistics [various years].

20. Percentage differentials are estimated as $(e^x - 1)100$.

21. If anything the small, statistically insignificant decline in the wage premium paid to male workers in the nonunion sector overstates any decline in discriminatory behavior since it potentially captures supply-side effects resulting from the spillover of male drivers from the union to nonunion sector. This spillover could reflect either the shrinkage of the union sector or displacement of male union workers by females. Some spillover is reasonable even given higher earnings levels in the union nontransport sector during the deregulation period if higher search costs and the costs of wait unemployment outweigh potential gains of the better-paying jobs there.

22. Firms tend not to be unionized that have limited ability to increase wages — either to all or part of their work force — without substantial employment declines [Ehrenburg and Smith, 2000, 488-89]. Firms' demand elasticities may still differ even within a regulated environment that restricts intraindustry competition, depending on the characteristics of their market segment.

23. Husbands [1998] makes a similar argument with regard to reduced discrimination in other regulated industries.

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