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IN THE SUPREME COURT  
OF THE STATE OF WASHINGTON

CERTIFICATION FROM  
THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WASHINGTON

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VALERIE SAMPSON and DAVID RAYMOND, on their own  
behalf and on behalf of all others similarly situated,

Petitioners/Plaintiffs,

v.

KNIGHT TRANSPORTATION, INC., an Arizona corporation,  
KNIGHT REFRIGERATED, LLC, an Arizona limited liability  
company, and KNIGHT PORT SERVICES, LLC, an Arizona  
limited liability company,

Respondents/Defendants.

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**Respondents/Defendants' Answer to Brief of Amicus Curiae  
American Trucking Associations, Inc. and  
Washington Trucking Associations**

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Defendants agree with the thoughtful analysis prepared by the American Trucking Associations, Inc. and the Washington Trucking Associations (ATA) of the legal and practical issues at stake in this case. Defendants submit this reply to provide for the Court's convenience a copy of the Study on the Economic Impact of Converting from Activity Based Pay referenced at pages 13-14 of the ATA's brief, which was filed in *Ortega v. J.B. Hunt Transp., Inc.*, No. 07-cv-8336 (C.D. Cal) at dkt. 133-1. A copy of this Study is attached to this answering brief as Exhibit A.

April 30, 2019

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# **EXHIBIT A**



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# Economic Impact of Converting from Activity Based Pay

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**Date:** October 17, 2013

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## 1. Introduction

At the request of counsel for J.B. Hunt Transport, Incorporated ("JBH") I was asked to examine the potential impact on prices, routes and services offered by JBH's Intermodal and Dedicated Contract Services ("DCS") operations if it is determined that California state wage and hour laws prevent the use of a piece rate, or activity based, compensation system for full compensation of all worker activities performed by these drivers. My assessment is based on a review of the general economic theory and the existing academic literature on the impacts of piece rate compensation systems, as well as a review of specific JBH data and declarations provided by individual drivers and JBH managers responsible for the DCS and Intermodal operations. The general economic theory suggests (and JBH specific data supports) that a piece rate compensation system can promote efficiencies that result in higher effective hourly rates for drivers, increased productivity, and lower costs to the company. As a result, customers benefit through lower prices for the existing services and/or expanded services that could not otherwise be provided. Thus, prohibiting JBH from using an activity based pay (ABP) system to fully compensate Intermodal and DCS drivers would put JBH at competitive disadvantage relative to other service providers, resulting in a reduction of services provided to consumers, increased prices and altered routes.

## 2. Qualifications

I am Robert H. Topel, the Isidore Brown and Gladys J. Brown Distinguished Service Professor of Economics at The University of Chicago Booth School of Business. I am also the Director of the George J. Stigler Center for the Study of the Economy and the State and the Co-Director of the Energy Policy Institute at Chicago (EPIC), both at The University of Chicago. I am also a Senior Consultant at Charles River Associates (CRA), an economics consulting firm specializing in the application of economic theory and statistics to legal and regulatory issues.

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I am an economist, and I specialize in (among other things) microeconomics, which is the study of markets, pricing, and firm and industry behavior. I received a B.A. in economics from the University of California, Santa Barbara in 1974, and a Ph.D. in economics from the University of California, Los Angeles in 1981. In addition to my position at the Booth School of Business at the University of Chicago, I have been a member of the faculties in the Department of Economics at the University of Chicago and the Department of Economics at the University of California, Los Angeles. At these institutions, I have taught courses on Markets and Prices, Economic Theory, Labor Markets, Empirical Methods in Economics, Compensation and Personnel Policies, Industrial Organization and Antitrust, Business Strategy, and Law and Economics.

From 1993 to 2003, I served as the Editor of the Journal of Political Economy, and from 1991 to 1993, I was a member of the Editorial Board of the American Economic Review, two of the leading professional publications in economics and economic theory. I am also a past founding editor of the Journal of Labor Economics (1982-92), and I currently am a member of the Editorial Advisory Board of the International Journal of the Economics of Business and the Advisory Board of the Economics Research Network. I am a Research Associate of the National Bureau of Economic Research, an elected member of the Council on Income and Wealth, an elected Founding Member of the National Academy of Social Insurance, and a Fellow of the Stanford University Center for the Study of Poverty and Inequality. In 2004, I was elected a Fellow of the Society of Labor Economists. In 2005, I received the Eugene Garfield Award for contributions to the economics of medical research, and, in 2007, I received the Kenneth Arrow Award from the International Health Economics Association.

I have held various visiting and research positions with the Board of Governors of the Federal Reserve, the World Bank, the Economics Research Center of the National Opinion Research Center, the Brookings Panel on Economic Activity, the Rand Corporation, and the

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Center for the Study of the Economy and the State. I have published numerous articles in academic literature. My curriculum vitae appears in Appendix A.

### 3. Summary of Findings

Consistent with the economic theory and previous empirical research, my analysis of the efficiency gains experienced in JBH driver productivity as a result of moving to an activity based pay system would be negated if JBH is required to return to an hourly based compensation system. Based on the existing research, I would expect this to have an adverse impact on prices and services offered to JBH's customers. In addition, it is likely that this change would also result in lower overall compensation paid to individual California drivers currently employed by JBH.

### 4. Materials Reviewed

I reviewed the following materials in preparing this report<sup>1</sup>:

Declarations:

- Declaration of Aaron Regalado
- Declaration of Kris Ashmore
- Declaration of Frank Broadstreet
- Declaration of Darren Field
- Declaration of Benton Walker
- Declaration of Tony Vargas
- Declaration of Leonard Garcia
- Declaration of Carlos Moreno
- Declaration of Terry Weston
- Declaration of Dave Aragon
- Declaration of Christopher Dazsi

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<sup>1</sup> This report is based on the information available to me as of October 17, 2013. Should additional information become available it may be necessary to supplement or amend this report. At trial I may rely upon documents that have been produced or testimony that has been given in this matter. In addition, I may prepare demonstrative exhibits for use in trial.

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- Declaration of Marco Luevano
- Declaration of Thomas O'Conner
- Declaration of Francisco Escobedo
- Declaration of Jamie Couch

#### Data

- 2002 San Bernardino Intermodal Driver Data
- San Bernardino Hires and Terminations Data
- 2012-2013 DCS Efficiency data

#### Peer Reviewed Academic Papers

- Prendergast, "The Provision of Incentives in Firms." (1999)
- Lazear, "Salaries and Piece Rates." (1986)
- Lazear, "Performance Pay and Productivity." (2000)
- Fernie and Metcalf, "It's Not What You Pay." (1996)
- Paarsch and Shearer, "Fixed Wages, Piece Rates, and Intertemporal Productivity: a Study of Tree Planters in British Columbia." (1997)
- Shearer, "Piece Rates, Fixed Wages, and Incentives: Evidence from a Field Experiment." (2004)
- Shi, "Incentive Effect of Piece Rate Contracts: Evidence from Two Small Field Experiments." (2010)
- Booth and Frank, "Earnings, Productivity and Performance-Related Pay." (1999)
- Pekkarinen and Riddell, "Performance Pay and Earnings: Evidence from Personnel Records." (2008)

## 5. Economic Theory of Performance Pay Systems

Methods of compensating employees take many forms, ranging from fixed salaries or hourly wages to strict "piece rates" where compensation is based on a single measurable dimension of performance, such as baskets of strawberries picked in a day. In his exhaustive review of the literature, Prendergast (1999) put it as follows:

Incentives are provided to workers through the compensation practices of firms, encompassing monitoring, evaluation, and contracting, and firms use many different mechanisms to align interests. Some workers, such as sales-force employees, are predominantly rewarded for their efforts through explicit contracts that relate pay to observed measures of performance. Others are rewarded not on individual measures of performance but on more aggregate measures, such as profit-sharing arrangements. However, many employers eschew the use of explicit contracts, preferring to reward individuals based on a discretionary subjective measure of

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performance. Finally, some employers prefer to avoid pay-for-performance altogether.<sup>2</sup>

An organization's choice among alternative compensation schemes depends on its goals, technology and the nature of activities that it wishes to reward. In many situations the output or productivity of individual employees is difficult to measure in any formal way, though it is possible to monitor hours actually worked, such as with time clocks and direct monitoring of activities. In this type of situation workers are generally paid salaries (a fixed amount per period) or hourly wages, possibly augmented by bonuses based on supervisors' subjective evaluations of relevant performance metrics (cooperation, initiative and so on) or team performance (profit sharing and the like). Examples are secretaries, assembly-line workers, retail clerks, and teachers. In other cases, employees' individual efforts—in the form of decisions and activities on various tasks—are difficult to observe or monitor, but the consequences of those efforts in terms of individual productivity can be measured. In these cases "pay for performance" can explicitly link compensation to formal performance measures such as individual sales or output. Examples include sales people who call on and cultivate clients, taxi drivers, surgeons in major hospitals and those who work for explicit piece rates.

The key feature of an hourly wage system is that current pay is unconnected to an individual's current productivity—everyone in a defined group is paid the same hourly rate, regardless of productivity—so that greater output due to unusual effort or talent does not increase an individual's pay. The benefit of such a system is that individual productivities needn't be measured, which avoids some costs. In contrast, by definition a compensation system that rewards individual productivity—such as ABP—must measure that productivity, which is costly. The benefit of the ABP system is that incentives and the rewards to individual talent are greater, which raises overall productivity in the organization. This effect is highlighted in the Declaration of Derrick Ferguson, an Intermodal driver at the time of JBH's

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<sup>2</sup> Prendergast, Canice. "The Provision of Incentives in Firms." *Journal of Economic Literature* 37, no. 1 (March 1999): 7–63.

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conversion to ABP, who associates his increase in earnings with personal effort and "pride in my productivity (p.2-3)."

This productivity gain comes from two sources. First, for a given workforce, the stronger incentives created by ABP cause individual employees to provide more effort and initiative, which raises their productivity. Second, because a firm utilizing ABP rewards individuals who are more productive, the firm is able to attract more talented employees. Lazear (2000) demonstrates both of these effects in the context of a large organization that switched from hourly wages to performance pay.<sup>3</sup> Even so, in order for performance-based pay (or ABP) to dominate, the additional productivity that comes from stronger incentives and the ability to attract better workers must offset the additional cost of monitoring the quality of the output and measuring individual performance (Lazear, 1986; Prendergast, 1999).<sup>4</sup>

An ABP system may also reduce the supervision and overhead costs associated with employee monitoring, by ensuring that employees have appropriate incentives to perform desired tasks. As noted in the declaration by Marco Luevano, another JBH intermodal driver employed at the time of the conversion to ABP in California:

About ten years ago, we were paid hourly. Now that we are paid for mileage and activity, I make more money for doing the same job because there are opportunities to be efficient and make more money. I know that some of the guys who used to take lots of naps on the job quit when we switched to mileage/activity pay because they used to take long naps just to extend their day to make overtime (Luevano Declaration, p. 2)

These experiences of drivers are consistent with that of management, which reports that an hourly based pay system would require substantial driver monitoring to ensure the work is being completed efficiently, increasing the prices charged to the customers. "Under the activity-based pay system, however, drivers manage themselves for efficiency (Ashmore Declaration, p. 8). The first hand experiences of these drivers and JBH management are

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<sup>3</sup> Lazear, Edward P. "Performance Pay and Productivity." *The American Economic Review* 90, no. 5 (December 1, 2000): 1346–1361.

<sup>4</sup> Lazear, Edward P. "Salaries and Piece Rates." *The Journal of Business* 59, no. 3 (July 1, 1986): 405–431.

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consistent with the economic theory of the benefits associated with an ABP system, as well as JBH's motivation to increase overall efficiency.

Why have many organizations shifted toward performance-based compensation and away from hourly wages and/or salaries? If performance pay is efficient in a particular firm or industry today, why did it pay employees on an hourly basis in the past? Consistent with the tradeoff described in the previous paragraph, a key reason is technological changes in data collection, processing and storage that have reduced the cost of measuring productivity differences among individuals. These changes have made performance-based compensation economically viable. But the simple fact that JBH made the switch to ABP in both its intermodal (2002) and DCS fleets indicates that, for JBH, the productivity gains of ABP have warranted the additional costs of running that system. The empirical analysis presented below illustrates and documents these gains, which I take as given for the remainder of this section. For example, I find that the switch to ABP raised average productivity of DCS drivers by about 7 percent. Other things the same, 7 percent greater productivity implies a 7 percent reduction in the cost of providing DCS services, without reducing the welfare of DCS drivers. I find similar gains for intermodal drivers based on data following the transition to ABP in 2002.

The key issues in this dispute involve how a switch from a compensation scheme based on hourly wages to pay based on individual performance affects productivity and costs, with implied effects on prices and routes. If JBH's ABP system were found illegal, these productivity gains would be sacrificed as the company would be forced to revert to a less productive and more costly hourly wage system. This would affect competition on routes and pricing in markets served by JBH. Exactly how the effects play out depends on whether only JBH is forced to change its compensation system, or whether all trucking firms, including firms whose principle operations are outside of California, must abandon ABP. I consider these in turn.

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First, assume that (for whatever reason) JBH is forced to pay its drivers on an hourly basis, while competitors are allowed to keep whatever current compensation policies they may have. This will raise JBH's costs by something on the order of 10 percent, which means that the company is less competitive in bidding for contracts. Some customers and routes that are now served by JBH will either not be served or will be served by a higher cost carrier that would not have otherwise been chosen. And on routes where JBH has a particular competitive advantage, it will nevertheless charge higher prices and offer different services than otherwise. Prices will be higher, and routes will be different—there is no way around it.

Second, and perhaps more reasonably, assume that JBH's competitors in relevant markets also currently use ABP, and that ABP becomes illegal for everyone.<sup>5</sup> One of the most basic propositions of economic analysis is that increases in the costs of producing a good or service are passed through, in whole or in part, to consumers. Though this proposition does not depend on the degree of competition in the marketplace, in highly competitive markets such as trucking the "pass through rate" is typically close to one because supply is highly elastic—which is to say the full increase in cost is passed through to consumers. Then price increases will be more widespread than in the JBH-only case, but the main conclusions are the same—prices rise and routes change. Further, some routes and customers that would be served under a lower-cost ABP compensation will no longer be served by the trucking industry.

To summarize, JBH's switch to ABP raised productivity and lowered costs—which is, after all, why they did it. These gains do not simply improve JBH's profits, they ultimately reduce the prices that JBH charges for its services and routes it serves. If ABP is deemed illegal, JBH becomes a less competitive player in the market for trucking services, which raises not only the prices charged and routes served by JBH, but also raises the prices that

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<sup>5</sup> As noted by both Kris Ashmore, DCS Regional Business Manager, West Region, and Aaron Regalado, Director for JBH Intermodal ramp in Southgate, California, ABP systems where mileage is used as a proxy for all work performed for a normal delivery are the dominant method of pay in the trucking industry in California and throughout the United States (Ashmore Declaration, p. 7; Regalado Declaration, p. 7).

competitors can charge. Trucking services would become more expensive, and some users of those services would choose to switch to alternatives.

## 6. Review of the Empirical Evidence on the Productivity Effects of Performance-Based Pay

There is a growing body of empirical work that verifies the predictions of the theory of performance pay and worker incentives. Fernie and Metcalf (1996) find that jockeys perform better when pay is based on performance as opposed to other payment systems.<sup>6</sup> Paarsch and Shearer (1997) find similar results when they analyze a performance pay scheme for tree planters in British Columbia.<sup>7</sup> Shearer (2004) follows up on his 1997 work by conducting a field experiment in the same industry.<sup>8</sup> Using the same workers under both hourly and performance based payment systems he finds that productivity increases by 20 percent when workers are switched to incentive pay. His experiment also allows him to identify the pure incentive effect associated with performance pay. He estimates that the pure incentive effect induces a 22 percent increase in productivity.

Lazear (2000) also observes how workers respond to changes in payment systems by analyzing firm level data from Safelite Glass Corporation. In 1994 and 1995 the company gradually changed the compensation method for its workforce, moving them from hourly wages to incentive pay. Over this 19 month period, Lazear observes that 1) output per worker increased by 44 percent; 2) About half of the gain was attributable to incentive effects on individual productivity, while the firm was also able to attract more talented workers who would prosper with performance pay; and 3) Individual workers earned about 10 percent

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<sup>6</sup> Fernie, Sue, and David Metcalf. "It's Not What You Pay." Monograph, May 1996. <http://cep.lse.ac.uk>.

<sup>7</sup> Paarsch, Harry J., and Bruce Shearer. Fixed Wages, Piece Rates, and Intertemporal Productivity: a Study of Tree Planters in British Columbia. Cahiers de recherche. Université Laval - Département d'économique, 1997. <http://ideas.repec.org/p/lvl/laeccr/9702.html>.

<sup>8</sup> Shearer, Bruce. "Piece Rates, Fixed Wages and Incentives: Evidence from a Field Experiment." *Review of Economic Studies* 71, no. 2 (April 2004): 513-534.

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more under performance-based pay than under hourly wages. Other similar studies include Shi (2010) and Booth and Frank (1999).<sup>9,10</sup>

The previously mentioned studies have all relied on data from an individual firm or small field experiments. Pekkarinen and Riddell (2008) are able to expand the analysis to multiple firms by using employer-employee matched panel data for an entire industry in Finland.<sup>11</sup> In doing so they are able to capture heterogeneity both among individual workers and across individual firms. They find very similar results to these prior studies despite large differences in the industrial and occupational settings of the data. Employees sort according to ability with more talented individuals opting for performance-based compensation. They estimate the pure incentive effect on individual productivity to be as large as 11 percent, and find that employee earnings increase by approximately 9 to 10 percent as a consequence of performance pay.

## 7. JBH DCS Division

### 7.1. Description of DCS Operations

J.B. Hunt's DCS division provides supply chain solutions for individual clients where JBH drivers primarily work on a specific client account. These drivers become an extension of the client as described in a DCS online document:

We're often completely transparent. When we're wearing your uniform, driving a truck with your logo, and operating like an extension of your brand – your customer will never know the difference (DCS Complex Services (PDF), p.3).

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<sup>9</sup> Shi, Lan. "Incentive Effect of Piece Rate Contracts: Evidence from Two Small Field Experiments." *The B.E. Journal of Economic Analysis & Policy* 10, no. 1 (2010).

<sup>10</sup> Booth, Alison L., and Jeff Frank. "Earnings, Productivity, and Performance-Related Pay." *Journal of Labor Economics* 17, no. 3 (July 1999): 447–463.

<sup>11</sup> Pekkarinen, Tuomas, and Chris Riddell. "Performance Pay and Earnings: Evidence from Personnel Records." *Industrial and Labor Relations Review* 61, no. 3 (April 2008): 297–319.

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As detailed in the Declaration submitted by Frank Broadstreet, DCS Senior Director of Engineering Services, DCS drivers are engaged in both traditional truck delivery services where drivers provide intermediate transportation services from warehouses or docks to other distribution facilities (e.g., retail establishments or warehousing facilities), and "Final Mile" delivery services where DCS drivers will transport goods to the final customer. When developing client accounts JBH tailors services "to meet the specific needs of the client, including identifying the number and types of drivers that will be necessary to provide the required level of service (Broadstreet Declaration, p.2)." In the DCS environment a driver generally services one account (client) that typically results in regular route or service. However, the daily activities of a DCS driver may differ from other DCS drivers servicing the same account or a different account. For DCS drivers providing "Final Mile" services that may involve installation and set-up of final goods, the daily activities may vary greatly from one driver to another (Broadstreet Declaration, p.3).

According to JBH there are approximately 32 DCS accounts in California, and each account is governed by its own contract. Each contract establishes the level and type of service that JBH will provide including, "work schedules, routes, stops and services" based on the client's operations at a specific location (Vargas Declaration, p.2). Depending on the particular account, some of the routes become "regular" as they are repeated on a consistent schedule. The routes of some California-based DCS drivers will remain within the state, while others may require deliveries in neighboring states. Regardless of whether the individual is a "Final Mile" driver, a local driver (within 100 air miles), or a regional driver there is limited management over-sight of a driver's daily activities. Management relies on driver reporting, measurements of service and customer feedback to assess driver performance.

## 7.2. Pricing of DCS Services

As noted above service offerings for each account are negotiated and priced on a client-by-client basis. The pricing for an individual account will depend on the services being provided including the number and frequency of deliveries, the type of physical resources

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required, the number of drivers required, as well as the driver's duties and responsibilities (e.g., drivers responsible for unloading, final install and set-up, etc.). According to JBH's 2012 annual report (p.45), DCS contracts are generally cost-plus agreements with a three to ten year term (where the average term is 3.5 years). As noted by Mr. Broadstreet:

Driver compensation plays a critical role in these contracts as it represents the largest cost component to the DCS operations. As a result DCS operations have adopted a "bill as you pay, pay as you bill" philosophy. Thus, if the contract stipulates that a customer is charged on a per delivery basis, then driver compensation is determined on a per delivery basis (Broadstreet Declaration, p.3).

Broadstreet goes on to note that this approach effectively aligns JBH's incentives with those of the driver, and it simplifies the accounting process by enabling JBH to clearly identify service costs to the client. Aligning JBH and driver incentives allows JBH to lower management costs, ensure account profitability and offer services at prices that are competitive with other activity based providers (including independent contractors) that benefit the customer.

### 7.3. Conversion to Activity Based Pay

Drivers providing traditional trucking services for DCS accounts have been operating under an ABP system since the mid-1990s. This system "consisted of a rate per mile driven plus additional payments for specific non-driving related activities, such as a "drop" (when a load is delivered) or excessive customer delays (Walker Declaration, p. 3). The ABP system used by JBH is consistent with other firms in the United States trucking industry that directly compete with JBH for delivery services (Garcia Declaration, p. 3; Ashmore Declaration p.5; Walker Declaration, p. 3). However, there have been instances where JBH has assumed service on an account where the previous provider was compensating its drivers on an hourly basis. On these accounts JBH is able to clearly identify the cost saving efficiencies that can be obtained as a result of compensating drivers on an ABP system. For example, after being hired to service the Mission Hills DCS account in Fresno, California JBH was able to reduce the number of tractors needed to service the account by more than 25 percent of

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what Penske, the previous provider, compensating drivers on an hourly basis, needed to service this account (Ashmore Declaration, p.7-8). Providing the same service with fewer tractors results in lower operating costs for JBH and, in turn, lowers prices to the customer.

In addition to new contracts that may, for a limited time pay drivers on an hourly basis, there were several DCS "Final Mile" account drivers who were not paid based on an ABP system prior to 2013. Instead these locations continued to pay DCS drivers on an hourly basis, with defined tasks. Of the nearly 90 JBH locations offering "Final Mile" services at the beginning of 2012, only 29 were compensating drivers using ABP systems while the others were using an hourly based compensation system. Due to observed performance differences in productivity between the hourly and ABP "Final Mile" locations, JBH has been in the process of converting the hourly locations to an ABP system (Walker Declaration, p. 3). These conversions have been occurring through 2012 and 2013. Currently, all but five locations have been converted to ABP. As discussed in greater detail below, these conversions provide important evidence on the productivity-enhancing effects of activity-based pay.

#### 7.4. Analysis of DCS Conversion

##### 7.4.1. Description of Benchmarking Process

Prior to implementing the ABP system company-wide, representatives of JBH conducted an extensive review of the time required to perform the various aspects of each job. The review period lasted for approximately two years and consisted of a large sample of locations across the United States. During this review:

Each delivery was broken down into its component tasks such as parking the truck, setting up safety cones, unloading the cargo, carrying the cargo to the door, as well as typical drive times between deliveries. Then the time required to perform each task, including transportation, was carefully recorded. This information was aggregated and averaged to determine the "typical" time required to perform a specific task which would then allow JBH to design an ABP system that accounted for all times and activities associated with a delivery (Broadstreet Declaration, p.5-6).

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Using this benchmark information, JBH was able to calculate how efficient a particular location operated as a ratio of the expected time of each segment based on the previously calibrated average behavior relative to the actual time taken for each segment.

Additional adjustments were made to the expected time to account for differences in expected drive time. A baseline drive time standard was established and for locations where the distances are shorter and stop lights more frequent, the expected drive time per mile was adjusted upward as a percent increase over the baseline expected time. The opposite was true for locations where the distances are longer and stop lights fewer. In these locations, expected drive time per mile was adjusted downward as a percent of the baseline expected time (Walker Declaration, p. 4).

In addition to using the collected information from which changes in efficiency could be measured, the data were used to develop the ABP system for "Final Mile" drivers. With regard to DCS drivers who were already compensated based on an ABP system, the system was designed to more closely match driver compensation with the prices paid by DCS customers. The system was designed to "make sure that drivers receive at least the same base amount they would receive under an hourly system, but with the ability to earn much more money if they were more efficient (Ashmore Declaration, p. 6)." When developing the ABP system for the "Final Mile" drivers, DCS again created "pay plans to generate materially equivalent annual wages for performing the same work, with the opportunity for drivers to earn more with efficiency gains (Walker Declaration, p. 4)."

#### 7.4.2. Description of Data Collected

JBH calculated a weekly average efficiency score for each location by dividing the expected time per stop by the actual time per stop on a daily basis. The daily efficiency scores were then averaged each week to obtain efficiency measures for each location in their network on a weekly basis from January 7, 2012 through September 21, 2013 for a total of 88

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locations with most locations having 90 weekly observations per location.<sup>12</sup> The weekly data are averages of the daily observations for each week after removing outliers.

Each entry was investigated on a per stop basis to identify potential outliers in the data. An outlier could occur for several reasons, such as trucks breaking down, drivers failing to properly enter times, or additional individuals helping on a delivery. In these cases the observations for particular segments did not accurately reflect the actual time spent on a delivery. When this occurred, the data for that particular driver for the entire day was removed from the weekly average so as to not bias the weekly efficiency score. According to Frank Broadstreet, DCS Senior Director of Engineering Services, a route is identified as an outlier and excluded from the efficiency calculation for:

- Stops on routes where the entire route is less than 1 hour (Actual Time)
- Stops that are over 2 hours (actual or expected) and over 200% efficient
- Stops that are over 14 hours (actual or expected)
- Stops on routes where every stop is either 1 minute or an increment of 15 minutes (actual time)
- Stops on overlapping routes (Stop 99 is after Stop 1 of a different route on the same day for the same driver)
- Stops with no Delivery Date
- Stops before 4 AM
- Routes without a stop 1 or a stop 99 on the report date
- Stops without an alpha code
- Routes with no driver name

Approximately 15 percent of daily observations in the conversion period were excluded from the efficiency calculation as a result of the above criteria.

Information on the date that each office transitioned from hourly based pay to activity based pay was merged into the efficiency data so that efficiency scores for each office before and after the transition dates could be compared. The metrics and methods used to

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<sup>12</sup> Some locations have fewer than 90 observations because they did not exist for the entire 90 week time period.

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determine driver efficiency has not changed during this conversion period (Broadstreet Declaration, p. 7).

#### 7.4.3. Analysis of Efficiency Change Post-ABP Conversion

To identify the effect of the ABP conversion on efficiency, I estimated two different regression models which capture the before and after difference in efficiency for those locations that switched payment systems from hourly pay to ABP.

The first regression is the simplest. I estimate a regression of efficiency on an indicator variable that represents whether or not an observation occurs after a given location has switched from hourly based pay to ABP. Additionally, I include a centralized time trend variable that measures the distance in weeks from the date the ABP conversion occurred with negative values representing weeks prior to the ABP conversion and positive values representing weeks following the ABP conversion. This centralized time variable controls for any trends that may have been occurring leading up to or following after the conversion date within each location and helps isolate the impact of the ABP conversion. I also include indicators for each calendar week to account for week-to-week variations in overall economic activity. Finally, I include an indicator for each of 51 locations that changed payment systems to account for fixed area differences in measured productivity.<sup>13</sup>

In this analysis the coefficient estimate on the variable indicating whether the observation was from before or after the conversion to an ABP system provides a rough estimate of the average impact of the ABP conversion. Based on the available JBH DCS data I estimate that the efficiency was 6.4 percentage points higher on average after the implementation of ABP relative to the pre-ABP period after controlling for an existing time trend as well as date and location specific factors.

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<sup>13</sup> Several locations were excluded because of a lack of sufficient data (ATLGAS, BILMTX) or missing information about ABP implementation dates (BISNDX, CINOHX).

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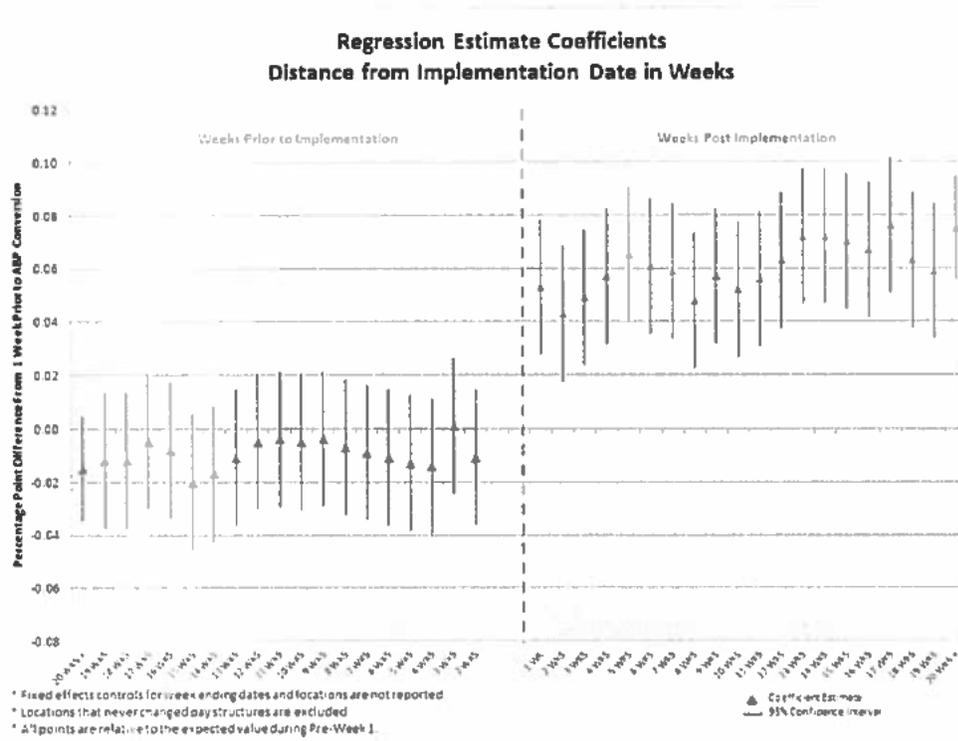
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I further explore whether there were differences in any specific weeks preceding or following the implementation date rather than simply looking at the average difference. To accomplish this I use a set of indicator variables that represent each week prior to, and following after, the implementation date up to 20 weeks. Since the pre- or post-conversion data may extend beyond 20 weeks, I also include a variable that includes all observations 20 weeks or more prior to the conversion, and another variable that includes all observations 20 weeks or more following the ABP conversion. The coefficient estimates for these indicator variables can be interpreted as the effect on efficiency that results from the observation occurring  $x$  weeks prior to (or following after) the implementation week. They are interpreted relative to the week prior to the implementation of ABP.<sup>14</sup> Thus a coefficient on the variable for week  $x$  prior to the implementation date with a value of  $-0.02$  means that the efficiency of an observation  $x$  weeks prior to the implementation date is expected to be two percentage points lower on average than what we expect for the week prior to the implementation week. As with the previous analysis, I account for each location and calendar date to control for any particular variation in efficiency across locations or general economic trends. The coefficient estimates for this regression are graphically displayed in Figure 1. The triangular center points represent the coefficient estimates themselves and the blue lines that extend through the points are the 95% confidence intervals for those estimates.

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<sup>14</sup> Observations that occurred during the week of conversion are excluded from the analysis.

Figure 1



The sharp jump around the implementation date is maintained throughout the 20 week interval on either side of the implementation date. I calculate an average value of the coefficient estimates for the pre- and post-implementation periods. The difference between the two average values is seven (7) percentage points. The result of this analysis is that the effect of the ABP conversion on efficiency was both pronounced and permanent.

## 8. Overview of Intermodal Division

### 8.1. Description of Intermodal Services

Since 1989 JBH has operated Intermodal services in conjunction with major North American rail carriers. As described in JBH's 2012 Annual Report:

JBI [J.B. Hunt Intermodal] draws on the intermodal services of rail carriers for the underlying linehaul movement of its equipment between rail ramps. The origin and

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destination pickup and delivery services ("drayage") are handled by our company-owned tractors for the majority of our intermodal loads, while utilizing third-party dray carriers where economical. By performing our own drayage services, we are able to provide a cost-competitive, seamless coordination of the combined rail and dray movement for our customers (p.45).

In California, JBH Intermodal operates Intermodal ramps in Fresno, Southgate, Stockton and San Bernardino. Drivers transport freight from the ramp to one or more customer sites, and return from customer sites with freight destined for another JBH Intermodal ramp. Intermodal drivers can be local (routes within 100 miles of the ramp) or regional (routes generally requiring drivers to travel 125 to 400 miles a day).

Unlike DCS drivers who generally have more regular routes because they work on a specific account, Intermodal drivers service multiple customers, and thus experience more route variability. "Some Intermodal loads are known in advance, but most pickups are 'just in time' and not assigned until the day or hour in which the load is to be picked up (Regalado Declaration, p. 5)." As a result, Intermodal routes are managed by dispatchers who will work with drivers to coordinate routes. Dispatchers will schedule the initial route for a driver. When a driver nears the completion of this route, the driver will provide the dispatcher with an ETA (estimated time of availability) for their next load through an on-board computer. Based on this availability, dispatchers will schedule the next load with the goal of maximizing the number of deliveries while limiting the number of empty trailer miles (miles driven from one stop where a load is dropped to another stop where a load is picked up, but no delivery is to be made). In addition to a driver's ETA decision, schedulers are also constrained by the Department of Transportation (DOT) regulations on the number of hours a driver is authorized to work on a given day and within a given week.

## 8.2. Pricing of Intermodal Services

JBH uses a proprietary program to determine the price it charges for a particular load or intermodal delivery service. The program uses historical cost information, as well as current market data, to generate a price for a particular service or delivery based on a fixed set of parameters, "including the route or lane (origination and destination), the required

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equipment and level of service (e.g., a "live load" when a driver arrives and leaves with the same equipment, versus a "drop and hook" when a driver leaves with different equipment than he arrived with), the number of shipments being requested and the frequency of these shipments (Field Declaration, p.3)." According to JBH, driver costs and rail costs represent the two highest input costs for intermodal services. As a result, "overall increases in labor costs would necessitate either an increase in the price charged to the customer, or a discontinuation of some service offerings (Field Declaration, p. 3)."

### 8.3. Conversion of JBH Intermodal Drivers to Activity Based Pay

According to Darren Field, Senior Vice President of Intermodal Pricing, in 2001 driver efficiencies obtained by DCS's traditional trucking services led to a pilot conversion of Intermodal Services driver compensation from an hourly based system to an activity based system. The initial pilot was conducted in the Atlanta, Memphis, Fresno and Dallas facilities. In the pilot locations JBH found that the "mileage and activity-based pay system led to more efficient and productive services" and that "drivers were completing more routes and had reduced their time spent on a particular stop (Field Declaration, p. 5)." Based on the success of the program at the pilot locations, JBH decided to convert its other Intermodal locations to activity based pay. It is important to note that the improved efficiency resulting from the converting the drivers to an ABP system reached beyond the drivers themselves. Through the pilot program JBH found that the conversion "also could improve fleet management productivity by bringing to light any shortcomings they might have so it can be quickly corrected (Field Declaration, p. 5)."

Thus, the intermodal ramps in California began converting to an ABP system in January 2002. In order to avoid reductions in driver compensation during the initial stages of the conversion, drivers were paid the greater of their pay based on their previous hourly wage or the calculated ABP during the transition period. Based on a memo prepared for drivers by Dave Baxter and Nathan Smith at the time of the conversion, JBH offered the following

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reasons for the change in its compensation policy (Baxter and Smith memo, January 11, 2002):

1. ABP increases fleet productivity. Not only driver productivity but it also improves fleet management productivity by bringing to light any shortcomings they might have so it can be quickly corrected. These include heightened awareness of the location of containers, quick response time between dispatches, and efficient load assignment.
2. ABP ensures that local management does not utilize outside dray until JBI fleet resources are exhausted.
3. ABP aligns company and driver goals. Under an activity-based structure, if the driver is not making money, the company is not making money. Every person associated with JB Hunt Intermodal (drivers, fleet managers, salesmen, and account reps) would be pulling in the same direction to make sure everyone involved was making money. This would result in more revenue work and less non-revenue tasks.
4. ABP maximizes detention revenue.
5. ABP ensures proper fleet sizing. If there is not enough work to support all the drivers, immediate change is warranted. This might result in a change in scheduling or a reduction in staff.
6. ABP improves reliability of profitability reporting for evaluating our customers. By using an outside dray carrier, the company can know exactly (to the penny) what their dray cost are, and from this, changes in customer pricing can be made to help recuperate additional expenses. This is much more difficult on drays hauled by the internal fleet because driver pay cannot be determined at the load level.

A complete copy of the memo outlining the change appears in in Appendix B. As documented below, drivers at the San Bernardino ramp quickly adapted to the new compensation procedure. Similar experiences were reported at the South Gate terminal, where after the first three weeks on the ABP system "drivers were earning more money on average than under the previous pay system (Regalado Declaration, p. 10)."<sup>15</sup> At the same time the productivity of the typical driver increased as "drivers are far more engaged in an activity-based pay system because they are aware that they can receive more pay by being more efficient, handling more loads and selecting the most efficient routes and order of loads (Regalado Declaration, p. 10)." As a result, JBH Intermodal operations in California discontinued the hourly rate compensation alternative in April 2002, and compensated drivers based on the ABP system.

The benefits identified above enabled Intermodal to expand its service offerings by bidding services to customers who would have been marginally profitable under a less productive system. The Company could do so without detriment to its drivers or expanding its fleet size (Field Declaration, p. 7).

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<sup>15</sup> Similar results were reported for other intermodal drivers in California with most drivers earning more under the ABP system as compared to an hourly based compensation system (Field Declaration, p. 7).

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Returning to an hourly based compensation system would negatively affect each of these groups. For JBH to provide the same level of service under an hourly compensation system it would need to increase the number of drivers and equipment, as well as take on more overhead. These changes could only be accomplished through either price increases to its existing customers or refusal to bid on some contracts that would no longer be profitable (Field Declaration, p. 7).

#### 8.4. Analysis of Intermodal Conversion

##### 8.4.1. Description of San Bernardino Conversion

As noted above, the decision to convert the compensation of Intermodal drivers from an hourly based system to an ABP system was motivated by the higher driver efficiency of DCS drivers, and the positive outcome of the pilot program on Intermodal drivers in Atlanta, Memphis, Fresno and Dallas. The transition from an hourly based pay system to an ABP system for the San Bernardino Office occurred during the first quarter of 2002. Over a 12 week period beginning January 19, 2002 and ending April 6, 2002, both compensation systems were used. A driver was paid under the compensation system that yielded the highest weekly wage for that driver. In this way, no driver was made any worse off by switching to ABP for at least 12 weeks. At the end of 12 weeks all employees would be paid according to the ABP system.

##### 8.4.2. Description of Available Data

The process of converting the Intermodal drivers to an ABP system was completed in 2002; as a result much of the detailed driver information is no longer available. However, an archived version of driver activity during the first few weeks of the transition period for the San Bernardino ramp was discovered on a single hard drive. These data contain detailed driver information on a weekly basis over the 12 week period excluding the week ending February 9, 2002. The data provided by JBH for the San Bernardino ramp included information on hourly pay rates, actual weekly hours worked, activity based pay rates, total activity based

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pay, number of different driver activities per week, and the tenure pay for each driver. In addition, the database included other variables that were created to identify various measures of costs, effective wage rates, and various productivity measures.

I added additional information on hires and terminations taken from the company's HR database which allowed me to identify the employees who were terminated during or shortly after the transition period. I separate all drivers into three categories. I call the first category "Stayers". These are individuals who were employed prior to the start of the transition period (January 19, 2002) and remained employed for at least 12 months following the end of the transition period. I call the second group "Initial Leavers". These are drivers who were terminated at some point during the transition period. I call the third group "Year 1 Leavers". This third group is comprised of drivers who were employed throughout the transition period, but their employment was terminated sometime during the 12 months immediately following the end of the transition period. Table 1 contains the number of drivers in each category for each week of the transition period.

There are two reasons for variation in the numbers. First, a driver may have been on leave or not shown up to work for some other reason (Vacation, Sick days) but he still remained employed, and second, a driver's employment may have been terminated. Due to the small number of Initial Leavers and Year 1 Leavers, I focus my analysis on the "Stayers" group.

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**Table 1 - Observations Per Week by Driver Category**

Week Ending Date	Stayers	Initial Leavers	Year 1 Leavers	Total
01/19/2002	84	8	12	104
01/26/2002	83	8	12	103
02/02/2002	84	7	12	103
02/16/2002	82	6	11	99
02/23/2002	84	6	12	102
03/02/2002	82	6	12	100
03/09/2002	80	5	13	98
03/16/2002	81	4	12	97
03/23/2002	80	5	13	98
03/30/2002	79	1	13	93
04/06/2002	80	0	13	93
<b>Total</b>	<b>899</b>	<b>56</b>	<b>135</b>	<b>1,090</b>

8.4.1. Analysis of Cost Per Stop and Effective Hourly Pay Rate

I calculate average weekly productivity and cost measures including average weekly total stops, average weekly hours worked, average wage cost per stop and the average effective hourly pay rate of drivers and graph the trends over the 12 week period in Figures 2 through 5 and the corresponding values are in Table 2. In the figures, each point represents the weekly average across all drivers and the line shows the linear trend over time.

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**Table 2 - Average Efficiency and Wage Measures per Week**

Week End- ing Date	Number of Employees	Average Driver Stops	Average Hours Worked per Driver	Average Wage Cost per Stop	Average Effective Hourly Rate
1/19/2002	84	18.27	44.83	41.53	16.93
1/26/2002	83	21.45	46.08	37.69	17.58
2/2/2002	84	21.20	46.59	38.59	17.58
2/16/2002	82	21.23	47.63	39.08	17.45
2/23/2002	84	21.65	45.71	38.70	18.32
3/2/2002	82	22.40	45.88	37.54	18.30
3/9/2002	80	22.90	44.97	36.88	18.76
3/16/2002	81	22.83	45.99	37.56	18.70
3/23/2002	80	21.83	44.32	37.55	18.69
3/30/2002	79	23.77	46.85	37.09	18.73
4/6/2002	80	22.70	45.69	37.48	18.68

\* Statistics are based on data for drivers who are classified as "Stayers"

I first look at average weekly stops per driver and average weekly hours worked per driver. The average number of stops per week increased from just over 18 per driver to nearly 24 stops per driver in the 11<sup>th</sup> week, with a clear upward trend throughout the transition period. At the same time, the average weekly hours worked per driver remained flat at about 46 hours. These two graphs together demonstrate that company efficiency increased substantively – more work was done without increasing the time taken to complete that work.

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Figure 2

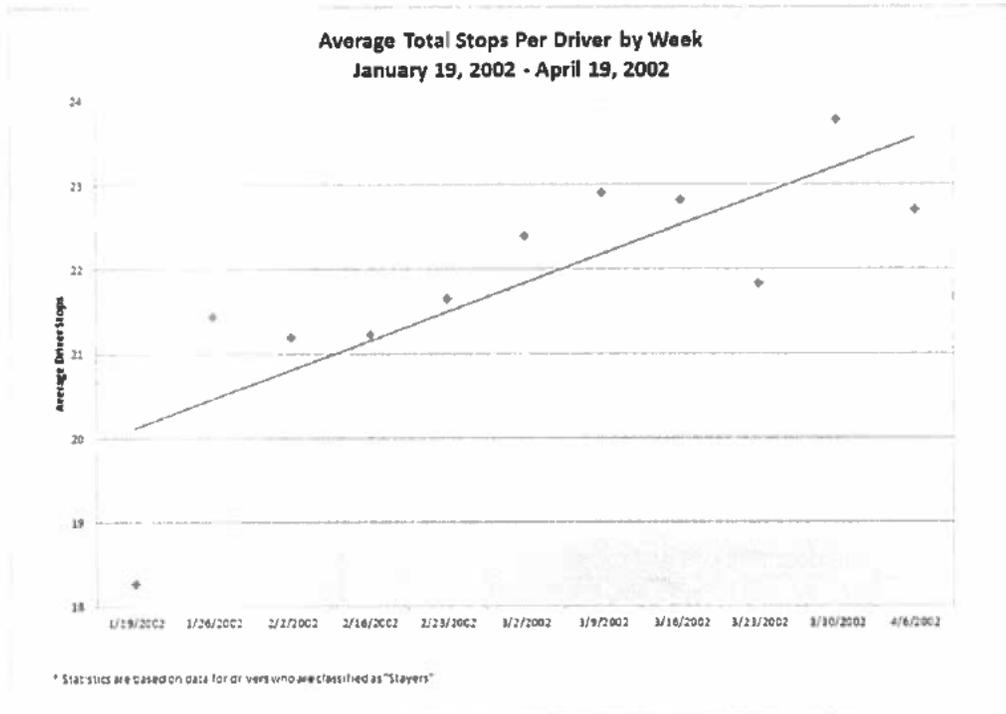
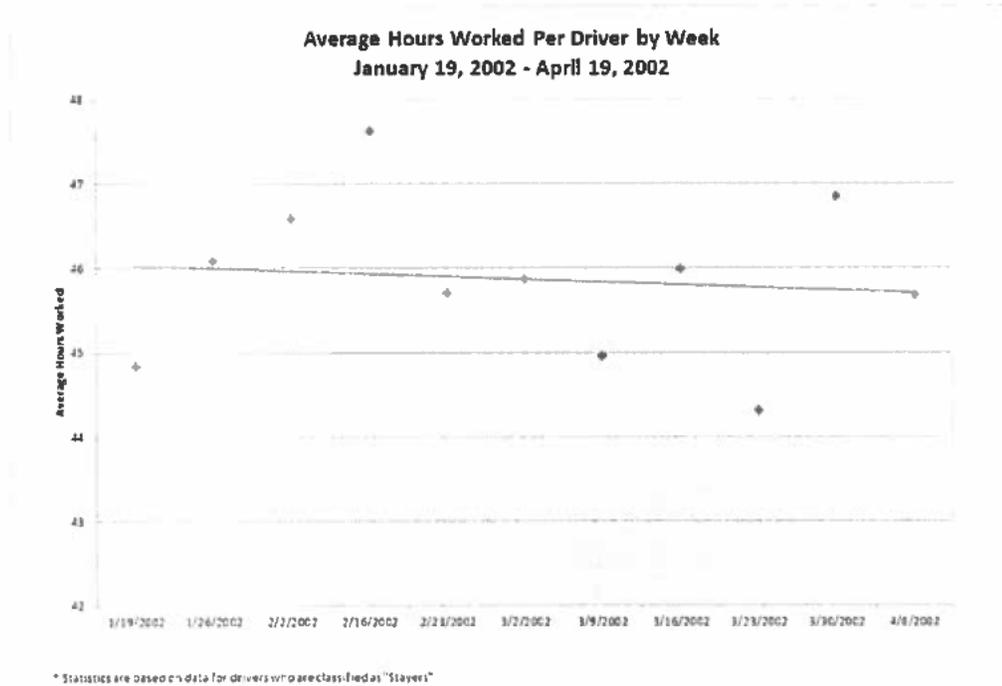


Figure 3

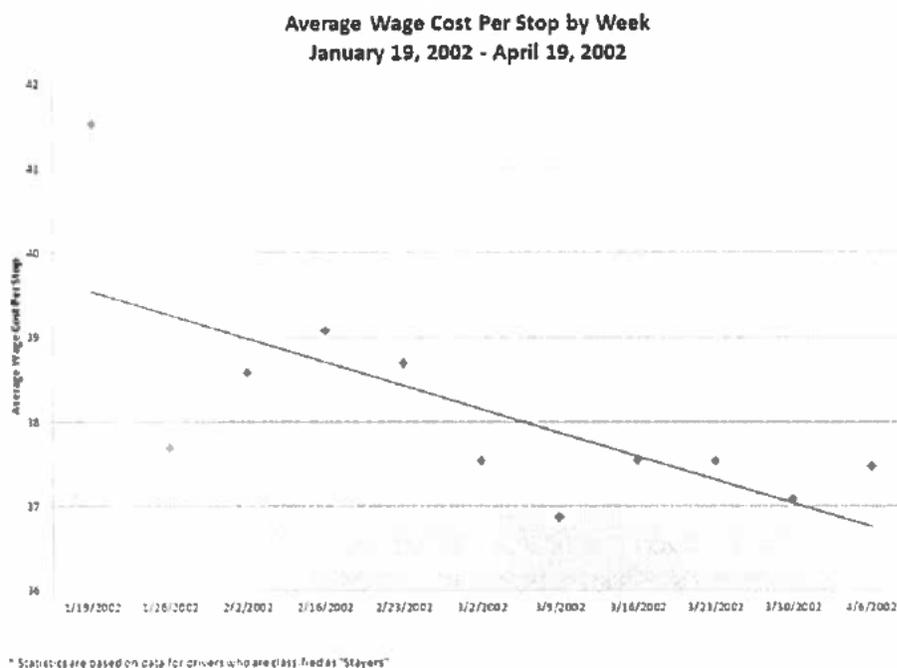


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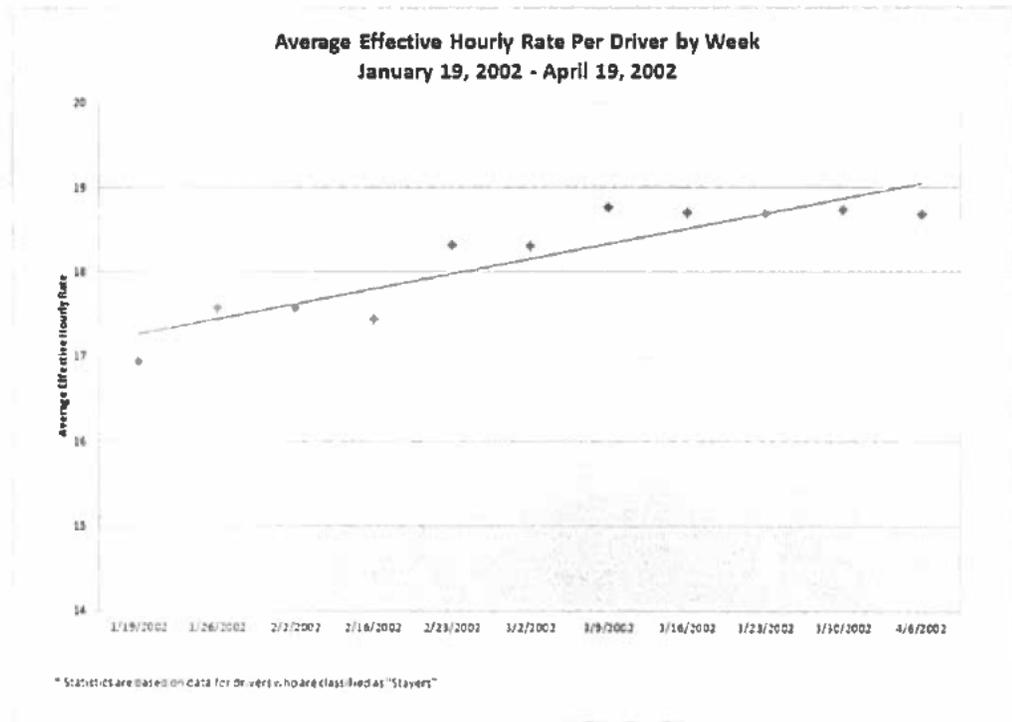
Second, I look at payroll costs for the location. I calculate the actual pay that a driver received as the greater amount of hourly based or activity based compensation. I total that across all drivers to obtain the total payroll bill per week for the San Bernardino location. I then total the number of stops made per week across all drivers and divide to obtain the average wage cost per stop for each week. The average wage cost per stop for each week fell from over \$41.53 per stop in the first week to approximately \$37.50 per stop for the final four weeks.

Figure 4



Finally, I look at how driver pay is affected by the conversion. I calculate the effective hourly wage for each driver by dividing the actual wage a driver was paid by the actual hours that driver worked for each week. I then average the effective wage across all drivers for each week. The average effective hourly wage increases from just under \$17.00 per hour worked to approximately \$18.70 per hour worked. This increase is precisely consistent with the 10% increase in wage gains estimated by the academic studies previously mentioned.

Figure 5



Based on these analyses, I find that the switch from an hourly based pay system to an ABP system increased the location's efficiency as it was able to make more stops per week without increasing the average hours worked by the drivers. I find that costs for the location decreased based on the decrease in wage costs per stop. I also find that drivers on average are better off. The hours worked remained stable while the average effective wage per hour increased by about 10%.

## 9. Concluding Remarks

Consistent with the economic theory and previous empirical research, my analysis of the efficiency gains experienced in JBH driver productivity as a result of moving to an activity based compensation system would be negated if JBH is required to return to an hourly based compensation system. JBH and its customers benefited from the efficiency gains that were experienced when JBH moved to an ABP system. More efficient drivers resulted in

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expanded service to existing customers, and new service to customers who benefited from the lower prices that could be offered as a result of the efficiency gains. Reverting to an hourly based compensation system would "generate increased, unstable, and fluctuating labor costs" that would likely lead to the reduction of drivers and services, as well as an increase in rates charged to customers (Regalado Declaration, p. 9).

Customers are not the only group that would be worse off as a result of moving away from an activity based compensation system. The ABP systems developed by JBH were designed to ensure that driver earnings were similar to those under the hourly based pay system, but had the opportunity to earn much more with increased efficiency (Regalado Declaration, p. 7, Field Declaration, p. 6, and Ashmore Declaration, p. 6). As a result of productivity gains drivers were able to earn more under an ABP system than an hourly based pay system while reporting similar work activities.<sup>16</sup> One driver goes on to state that he "wouldn't want to go back to hourly pay because I know that what I average now by the hour is more than I would make under the hourly system (Couch Declaration, p. 1)."

These findings are consistent with the existing research on performance-based pay (activity-based pay). Based on these studies, I would expect the return to an hourly based compensation system to have an adverse impact on prices and services offered to JBH's customers. In addition to the negative impact on prices and services, this change would not benefit drivers as it is likely to result in lower overall compensation paid to individual California drivers currently employed by JBH.

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<sup>16</sup> Declarations by Moreno (p.2-3), Ferguson (p.2-3), Luevano (p.2), O'Connor Declaration (p.2), Escobedo (p.2), Dazzi Declaration (p.1) and Couch (p.1) all report increases in compensation after Intermodal converted to an ABP system.

# APPENDIX A

## **Robert H. Topel**

### **CURRICULUM VITAE**

**July, 2012**

#### **CURRENT POSITIONS**

*Isidore Brown and Gladys J. Brown Distinguished Service Professor of Economics,*  
Booth School of Business, University of Chicago  
*Director, George J. Stigler Center for the Study of the Economy and the State*  
*Director, University of Chicago Energy Initiative*  
*Research Associate, National Bureau of Economic Research*

#### **EDUCATION**

B.A. (with High Honors), University of California, Santa Barbara, 1974  
Ph.D., University of California, Los Angeles, 1980

#### **FIELDS OF SPECIALIZATION**

Microeconomics, Labor Economics, Industrial Organization, Health Economics,  
Economic Policy, Energy Economics, National Security Economics

#### **PREVIOUS POSITIONS**

*Professor of Economics, Graduate School of Business, University of Chicago, 1986-*  
*1993*  
*Professor of Economics, Department of Economics, University of California, Los*  
*Angeles, 1986*  
*Associate Professor of Economics, Department of Economics, University of California,*  
*Los Angeles, 1985-86*  
*Associate Professor of Economics, Graduate School of Business, University of Chicago,*  
*1983-85*  
*Assistant Professor of Economics, Department of Economics, University of Chicago,*  
*1980-83*

#### **OTHER AFFILIATIONS**

*Research Associate, National Bureau of Economic Research, 1984—present*  
*Senior Fellow, the Milken Institute, 1999—present*  
*Fellow, Center for the Study of Poverty and Inequality, Stanford University, 2006-present*  
*Member, Brookings Panel on Economic Activity, various years.*  
*Visiting Scholar, Board of Governors of the Federal Reserve, 1990*  
*Research Associate, Economics Research Center, NORC, 1980—1990*

*Consulting Economist*, The Rand Corporation, 1982—1989  
*Research Associate*, Center for the Study of the Economy and the State, 1980—present  
*Faculty Research Fellow*, National Bureau of Economic Research, 1981-83  
*Research Economist*, Unicon Corporation, 1981-88  
*Consultant*, U.S. Department of Labor, 1985-90  
*Partner*, Chicago Partners LLC 1994-present

## **EDITORIAL POSITIONS**

Editor, *Journal of Political Economy*, 1993-2003  
Board of Editors, *American Economic Review*, 1992-94  
Associate Editor, *Journal of Labor Economics*, 1982-92  
Editorial Board, *International Journal of the Economics of Business*, 1993-  
Member of the Advisory Board, ERN Labor Journals

## **HONORS & AWARDS**

*Kenneth J. Arrow Award*, International Health Economics Association, 2007  
*Kirby Distinguished Visiting Professor*, Texas A&M University, 2006  
*Elected Fellow*, Society of Labor Economists, 2004  
*Research America Eugene Garfield Prize for Medical and Health Research*, 2005  
*Elected Member*, Conference on Research in Income and Wealth  
*Elected Founding Member*, National Academy of Social Insurance  
*William Ladany Research Scholar*, University of Chicago, 1989-91  
*William Fishman Research Scholar*, University of Chicago, 1986-87  
*Smith Richardson Dissertation Fellowship in Political Economy*, 1978-79  
*Foundation for Research in Economics and Education Fellowships*, 1975-79  
*Chancellor's Intern Fellow*, University of California, Los Angeles, 1975-79  
*University Fellow*, Northwestern University, 1975  
*General Electric Dissertation Fellowship*, 1978

## **TEACHING EXPERIENCE**

Graduate Economic Theory I, II, III  
Law, Economics and Business  
Competitive Strategy  
Advanced Topics in Labor Economics  
Advanced Topics in Microeconomics  
Managing the Workplace  
Industrial Organization/Antitrust  
Price Theory

## **OTHER PROFESSIONAL ACTIVITIES**

*Thompson Lecture* (Keynote Address), Midwest Economic Association, 2000  
*Nominating Committee*, American Economic Association, 1996, 1997  
*Program Committee*, American Economic Association, 2006-2007.  
*Organizer*, Universities-NBER Research Conference: "Labor Markets in the 1990s," Cambridge, December 1989.  
*Program Chair*, Labor Economics, Econometric Society Meetings, December 1989.  
National Science Foundation Review Panel in Economics, 1998, 1999  
*Pihl Lecturer*, Wayne State University, November, 2004  
*Keynote Address*, Federal Reserve Bank of Cleveland Conference on Education and Economic Development, November, 2004  
*Kirby Lecturer*, Texas A&M University, 2006  
*Huggins Lecturer* (Keynote Address), Department of Surgery Huggins Conference, University of Chicago, May, 2007  
*Keynote Address*, Conference Board of Canada Meetings on Medical Research, Montreal, January 2009  
*Keynote Address*, Council on Competitiveness Conference on Energy Policy, Argonne National Laboratory, May 2009  
*Keynote Address*, University of Chicago/RFF/University of Illinois Conference on *Energy Policy and the Economy*, Washington, D.C., January 2010

#### **UNIVERSITY SERVICE**

Director, Undergraduate Program in Economics, 1980-83  
Chairman, Graduate School of Business Curriculum Review, 1990-91  
Committee on Graduate Education, 1992-94  
Committee on Undergraduate Education, 1993-94  
Council of the University Senate, 1992-94, 1995-97, 1999-2002, 2004-2007  
Committee of the Council of the University Senate, 2000-2002, 2006-2007  
Graduate School of Business Policy Committee, 1995-97, 1999-2001  
Member, Presidential Search Committee, 1999-2000  
Board of Directors, University of Chicago Laboratory Schools, 1986-92, 1998-2007  
Chairman, Director Search Committee, U of C Laboratory Schools, 2002-2003  
Area Coordinator, PhD Program in Economics, 2002-2008  
Director, George J. Stigler Center, 2007-present  
Director, University of Chicago Energy Initiative, 2008-present

#### **BIBLIOGRAPHY**

##### ***Books:***

*The Welfare State in Transition*, with Richard Freeman and Birgitta Swedenborg.  
Chicago: University of Chicago Press for NBER, 1997.

*Labor Market Data and Measurement*, with John Haltiwanger and Marilyn Manser.  
Chicago: University of Chicago Press for NBER, 1998.

*Välfärdsstat i omvandling: Amerikanskt Perspektiv på den Svenska Modelten*, with Richard Freeman and Birgitta Swedenborg. Författarna och SNS Förlag, 1995.

*Measuring the Gains from Medical Research: An Economic Approach*, with Kevin M. Murphy. Chicago: University of Chicago Press (2003).

*Reforming the Welfare State: Recovery and Beyond in Sweden*, with Richard Freeman and Birgitta Swedenborg, Chicago, University of Chicago Press for NBER, 2009

*Att Reformera Välfärdsstaten*, with Richard Freeman and Birgitta Swedenborg, SNS Förlag, Stockholm, 2006

*Energy Policy and the Economy*, with Mark Cohen and Don Fullerton, Special Issue of the BE Journal of Economic Analysis and Policy, Spring 2010

**Articles and Monographs:**

“Layoffs, Inventories, and the Demand for Labor,” Ph.D. Dissertation, University of California, Los Angeles, December 1980.

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## APPENDIX B

**Memo to: Dallas Local Intermodal Drivers**

**From: Dave Baxter and Nathan Smith**

**Date: Friday, Jan 11, 2002**

It is the intention of JB Hunt Transport to change the method of payment for the San Bernardino local intermodal fleet from hourly to activity-based pay.

### **Why?**

1. ABP increases fleet productivity. Not only driver productivity but it also improves fleet management productivity by bringing to light any shortcomings they might have so it can be quickly corrected. These include heightened awareness of the location of containers, quick response time between dispatches, and efficient load assignment.
2. ABP ensures that local management does not utilize outside dray until JBI fleet resources are exhausted.
3. ABP aligns company and driver goals. Under an activity-based structure, if the driver is not making money, the company is not making money. Every person associated with JB Hunt Intermodal (drivers, fleet managers, salesmen, and account reps) would be pulling in the same direction to make sure everyone involved was making money. This would result in more revenue work and less non-revenue tasks.
4. ABP maximizes detention revenue.
5. ABP ensures proper fleet sizing. If there is not enough work to support all the drivers, immediate change is warranted. This might result in a change in scheduling or a reduction in staff.
6. ABP improves reliability of profitability reporting for evaluating our customers. By using an outside dray carrier, the company can know exactly (to the penny) what their dray cost are, and from this, changes in customer pricing can be made to help recuperate additional expenses. This is much more difficult on drays hauled by the internal fleet because driver pay cannot be determined at the load level.

Take note that reducing driver pay is not listed as one of the benefits. It is not the intention of JB Hunt Intermodal to use a change in the way a driver is paid to decrease the amount he is paid. It is the opinion of many that the JB Hunt intermodal driving job is one of the best truckload driving jobs found in the country, and it is our intention to keep it that way.

### **How?**

Drivers will receive pay from Basic Activity Pay, Tenure Pay, and Exception Pay. Additionally, drivers will continue to receive Basic PTO (holiday, sick, and personal) and Seniority PTO (vacation).

#### **Basic Activity Pay**

- Stop pay - \$23. Stop pay is paid for every loaded and unloaded call.
- Live pay - \$10. Paid in addition to stop pay when driver leaves customer with the same container in which he arrived.
- Mileage pay - \$.28 for the Day Shifts (Start times between 0231 and 1659) and \$0.27 for Night Shifts (Start Times between 1700 and 0230). The mileage pay will be applied to every *hub* mile.

Where did we get the numbers? Josh Loar, Dave Baxter, and Darren Field analyzed driver activity sheets for several weeks. The goal was to develop activity payments that mirrored the hourly pay each driver would have received if he were at the lowest hourly pay scale. The Basic Activity Pay amounts shown here resulted in the fairest distribution of pay.

**Tenure Pay**

The Basic Activity Pay items are designed to adequately compensate a driver at the bottom of the current hourly scale. This pay reflects the intermodal driving job market. Current San Bernardino intermodal drivers have been rewarded for their years of service by pay that increases each year up to eleven pay levels. JB Hunt will not change this policy even though it is not widely used within the market. The following table illustrates how years of service, or tenure, pay will affect earnings.

Current Pay Rate	Daily Tenure Pay	Weekly Maximum
\$ 13.50	\$ -	\$ -
\$ 14.00	\$ 4.50	\$ 22.50
\$ 14.50	\$ 9.00	\$ 45.00
\$ 15.00	\$ 13.50	\$ 67.50
\$ 15.50	\$ 18.00	\$ 90.00
\$ 16.00	\$ 22.50	\$ 112.50
\$ 16.50	\$ 27.00	\$ 135.00
\$ 17.00	\$ 31.50	\$ 157.50
\$ 17.50	\$ 36.00	\$ 180.00
\$ 18.00	\$ 40.50	\$ 202.50
\$ 18.50	\$ 45.00	\$ 225.00

The table above shows the daily tenure pay earned by each driver based on his current hourly pay. Here, the most senior driver will receive \$45.00 merely for showing up for a full day of work. Tenure pay has a weekly cap that is equal to five work days multiplied by the tenure pay amount. Therefore, if a driver works a sixth day, he will not receive tenure pay.

**Exception Pay:**

Unlike most intermodal companies, JB Hunt will continue to compensate local drivers for excessive delays and certain non-revenue related work. Hourly exceptions will be paid at the base hourly rate of \$13.50/hour. "Why is hourly pay only \$13.50 when I make \$17.00 per hour today? Sounds like a pay cut to me." It is important to remember that exception pay is related to the base pay, which attempts to emulate the driver's wage at the bottom of the current scale. Each driver will also receive his tenure pay. For example, if the most senior driver was brought in for nine hours of training, he would receive hourly Exception Pay of  $(9 * \$13.50 = \$121.50) + \text{Tenure Pay } (\$31.50) = \$153.00$  which happens to equal \$17.00/hour.

Here are some situations where drivers would receive exception pay:

- Detention. Driver to be paid hourly two hours following his arrival or customer appointment time, whichever comes last. Driver becomes ineligible if JBHT is unable to charge the customer detention due to a driver related service failure.
- Breakdowns – after one hour, driver will be paid hourly.
- Rail Delays – similar to breakdowns, driver will be paid hourly after one hour of delay.
- Waiting on tractor – paid hourly for entire delay.
- Safety training/meetings. Driver paid hourly for the duration of any training or meeting. He is guaranteed four hours if called in for training. If training is tagged to the beginning or end of shift, driver will be paid hourly for only those hours associated with the training.
- Truck ordered not used (TONU). Driver will be paid \$15 in addition to his mileage pay.

- Empty work. Drivers will not receive additional pay for spotting of empty equipment that is associated with a load (picking up an empty to make pickup, spotting empty at another customer following a delivery). If empty work is not associated with a load, he will receive \$10 plus mileage.
- Shuttling tractors to shop. Like empty work, drivers will receive \$10 plus mileage.
- Driver unloads. In the event that a lumper is not available, drivers will be paid for unloading product consistent with the OTR scale which is \$45.

#### **Paid Time Off (PTO)**

Paid time off will continue just as it is today with one exception; a PTO day will be paid based on the average trailing 12 month's wage. Therefore, a year from ABP implementation most drivers will be paid more for their PTO than they are today. Drivers will continue to earn seniority (vacation) PTO upon their anniversary date. Since there will not be any more hours on which to accrue basic PTO (sick, personal, holiday), each driver will receive one basic PTO day per month.

#### **Additional Changes – Taking the Bad with the Good**

On a normal day's intermodal work, the activity pay should pay the driver more than he is paid via hourly wage. There are some instances where this is not the case.

- Pay guarantees will be suspended. Intermodal local drivers today are guaranteed 45 hours of work if the driver is available to work his entire weekly shift. The forty-five hour guarantee was implemented at a time when JB Hunt outsourced no freight. Consequently, local fleets were sized to handle an average day's total volume, which resulted in times when there simply wasn't enough freight for the fleet. The guaranteed 45-week was implemented as protection for the driver. Today, most local fleets are sized for the slowest time of year. Therefore, the need for this guaranteed protection is not as prevalent as it was in the past. While pay is no longer guaranteed, JBH is confident that enough work will be made available for every driver to meet its former hourly minimum. JBH management does possess discretionary powers to grant additional pay in extremely unusual circumstances, i.e. massive train derailments that shut down intermodal freight flows for more than one day.
- Drivers will not be compensated for unproductive time between loads. Every once in a while, the timing of pickup and delivery appointments will require the driver to wait for his subsequent load. JBH will do everything in its power to prevent this from happening during the process of assigning freight, but this is reality in truckload transportation.
- Drivers will be paid for drop and hook even though load may take as long as a live load. Sometimes, drop and hook shippers and receivers can tie up a driver for as long as a live load/unload due to the product not being ready or empty unavailability.

#### **When?**

The test phase of activity based pay will begin Sunday, Jan 13. This test period will be used to answer any driver questions, tweak payroll systems, reevaluate exceptions, and make operational changes with people and processes. The test phase will run for at least two weeks (Atlanta ran for four weeks). After this date, hourly pay will be suspended.

CERTIFICATE OF SERVICE

I certify that on April 30, 2019, I caused a true and correct copy of the foregoing to be filed with the Washington Supreme Court and served upon counsel as indicated below:

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Dated this 30th day of April, 2019.

*/s/ Sarah Smith*  
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