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THE NATURE AND EXTENT OF PROBLEMS RELATED TO UNLOADING PRODUCE

by

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Introduction

Carriers generally bear the responsibility for loading and unloading their vehicles. Frequently this function is performed by casual laborers (i.e., laborers not under the regular employ of the carrier or the facility at which the loading/unloading occurs). There have been allegations that these casual laborers, known as lumpers, sometimes resort to coercion to force carriers to use their services or to pay exorbitant fees. Concerns regarding coercive tactics were sufficient for Congress to include provisions in the Motor Carrier Act of 1980 (Section 15) making such practices illegal, establishing penalties, and charging the Interstate Commerce Commission (ICC) with responsibility for enforcement.

In 1982, the ICC issued a report (Ex Parte No. 410) on the extent of the lumping problem after 1 1/2 years of the new law. Their findings indicated that any remaining problems were largely confined to the unloading of perishable commodities, primarily produce and meats. No final conclusions were reached in the report. However, the overall impression conveyed was that these incidents were sufficiently rare to be dealt with on a case-by-case manner, rather than requiring additional legislation.

Despite this relatively positive assessment, concerns persist in the produce industry of widespread unloading-related abuses. In this paper some of the major findings are reported of a study to gauge the severity of the problem. The specific objectives of the study were to:

1. determine average levels and frequencies of gate (i.e., entry) and unloading charges,
2. determine if these charges are borne by carriers or are passed on through the freight rate,
3. determine the perceived extent and nature of coercion related to unloading and changes since 1980,

4. determine if and to what extent unloading abuses influence carrier load acquisition decisions.

The focus of the study is on produce motor carriers serving the Florida fresh produce industry.

Background and Discussion

Much of the produce shipped from Florida goes to either supermarket warehouses or terminal markets like the Jessup Market in Maryland or Hunt's Point in New York. Access to the unloading docks is normally controlled by a gatekeeper. Drivers may be charged to enter the grounds[1] and an additional charge may be levied by lumpers if their services are employed.

When negotiating with lumpers, drivers are usually in a weak position. They are alone, fatigued, and under pressure to unload in a timely manner both to complete the current service obligation and to take on a new load. Lumpers, on the other hand, are usually organized[2] and enjoy the tacit or overt support of the facility.[3] They [the lumpers] normally have access to the facility's unloading equipment, which may be denied to the driver, and they may directly or indirectly control access to the loading docks. With such uneven negotiating positions, it seems reasonable that lumpers may be able to charge rates above competitive levels, particularly when drivers are prevented from bringing in their own unloaders.

From an efficiency standpoint, the existence of such monopoly power is of concern as it may result in nonoptimal amounts of unloading services being sought and/or nonoptimal amounts of resources devoted to the function. Congress' concern, however, focused on the equity and efficiency implications of enhancements of monopoly power by coercion. Coercion may either be by threat of violence to the driver or his/her vehicle or by threat of additional tasks[4] or delay to those refusing unloading services. In either case, coercion should enhance the level and reduce (absolutely) the elasticity of the demand for these services, ceteris

paribus, (Figure 1). This follows because by associating a negative event with nonacceptance, the desirability of acceptance is increased and the substitutability of the alternatives to acceptance is reduced.

Data and Methodology

The data for this study are from a survey of 1,694 drivers hauling produce from Florida. Interviews were conducted at the outbound Florida Agricultural Inspection Stations on US I-95, US I-75, and US I-10. All trucks must stop for inspection. Interviews were attempted with all drivers hauling produce. Cooperation by the respondents was excellent. At all stations, the refusal rate was about 3 percent, with tight schedules most frequently given as an excuse.[5] The interviews were conducted between 6:00 P.M. and 1:00 A.M. on November 15 and 16, 1985, January 17 and 18, 1986, March 21 and 22, 1986 and June 6 and 7, 1986. The distribution of the carriers across the three routes was as follows: I-95 (up the East Coast) 46 percent, I-75 (toward the Lake States) 36 percent, and I-10 (west) 18 percent.

On the premise that drivers would be most familiar with the destinations currently being served, the majority of the questions focused on the current load. Information sought included: commodities being hauled, loading method (i.e., hand stacked, pallets, slipsheets, or bulk), freight rate, destinations, and anticipated gate and unloading charges. Drivers were also questioned regarding unloading irregularities. A facsimile of the questionnaire is presented in Appendix 1.

From these data, average gate and unloading fees, and the frequency of reporting lumping abuses could be determined in a straightforward manner. To ascertain if and to what extent gate/unloading fees are reflected in freight rates, the following model was estimated:

$$(1)\quad RATE = B_0 + B_1\,DIST + B_2\,DIST2\;B_3 + VOL + B_4\,PKUP + B_5\,DROP + B_6\,G\&U + B_7\,ALOS + B_8\,OWN + B_9\,PC + B_{10}\,NOV + B_{11}\,JAN + B_{12}\,MAR + B_{13}\,RT75 + B_{14}\,RT10$$

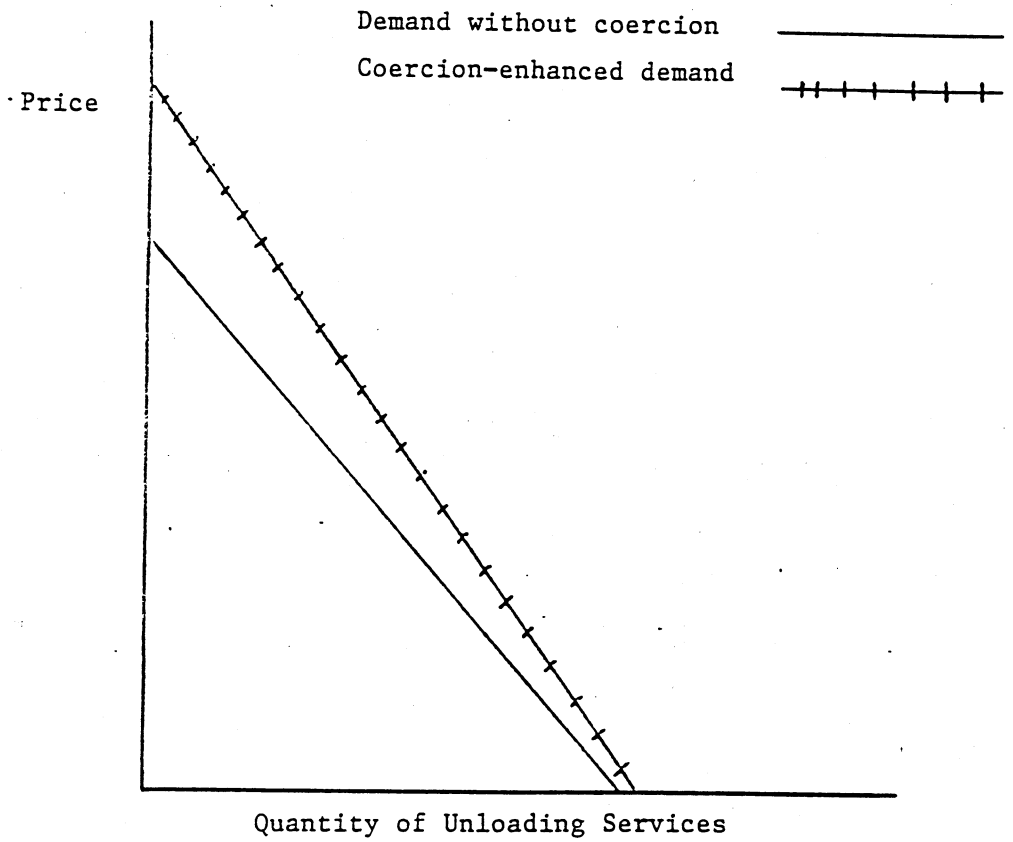


Figure 1. Impact of Coercion on Demand for Unloading Services, Rather than Self-Unloading

Where: RATE = freight rate per truckload ($)

DIST = distance to final destination (miles from Orlando, Florida)

DIST2 = DIST squared

VOL = capacity of the trailer (cu. ft.)

PKUP = number of pickups

DROP = number of drops (deliveries)

G&U = gate and unloading fees ($)

ALOS = average per day loss in the farm gate value of the commodity due to spoilage ($)

OWN = 1 if carrier is an owner-operator, 0 otherwise

PC = 1 if carrier is a private carrier, 0 otherwise

NOV = 1 if November, 0 otherwise

JAN = 1 if January, 0 otherwise

MAR = 1 if March, 0 otherwise

RT10 = 1 if US I-10, 0 otherwise

RT75 = 1 if US I-75, 0 otherwise

B_0---B_{14} = unknown parameters

G&U is the summation across all stops of anticipated gate and unloading fees. Those unloading themselves at any stops or uncertain regarding these fees were eliminated from the regression. If gate/unloading fees are absorbed completely by carriers, the parameter estimate associated with G&U (B_6) would be expected to be insignificantly different from zero. If there is partial absorbtion, the estimate should fall between zero and one. Finally, if these fees are fully reflected in freight rates, the estimate should be near one.

As the focus of this study is on the parameter associated with G&U, discussion of the rationale for the rest of the equation is relegated to Appendix 2.

Results

Levels and Frequencies of Gate and Unloading Charges

One quarter of the 1,694 drivers responding to the questions regarding gate fees stated that they would be encountered. The large majority of the responses ranged between $5 and $20, averaging $13.11 (for a load with one drop). Average reported gate fees for sixteen cities are shown in Table 1.

Forty-eight percent of the drivers reported that they would use lumpers, 12 percent would unload themselves, and 40 percent anticipated being unloaded at no charge. (Figure 2) Loads unloaded at no charge tended to be palletized and arranged directly with the receiver (rather than with the shipper or through a broker).[6]

The average full load unloading charge was the highest for bulk loads ($93.64). These loads, such as watermelons, are usually unloaded by hand. The process is so time consuming that at many facilities they are unloaded at night by special crews. Hand stacked loads averaged $57.68 to unload. Pallets are usually brought to the load and the boxes or crates are piled onto them for movement by forklifts or mechanical hand trucks. Next in terms of average unloading cost are loads on slipsheets ($48.33). Slipsheets are an alternative to pallets. They are lighter, cheaper, and require less space. However, many facilities do not have equipment designed to off load slipsheeted cargo. In such instances the cargo must be unloaded like hand stacked loads. The lowest average unloading cost is for palletized loads ($40.33). Pallets are the standard in the industry. At the large majority of facilities, a palletized cargo can be off loaded in a few minutes.

Across all cities, the average full load unloading charge was $55.66 (i.e., the average of those charged). This compares to an average of $33.40 reported by Pavlovic et al. in 1980 (Table 1). The rise in unloading charges of 67 percent is roughly three times that for the Producer Price Index. This suggests that any corrective actions resulting from the Motor Carrier Act of 1980 have not been sufficient to prevent fee increases. Indeed, this may be

Table 1. Gate and Unloading Fees for Initial Stop: 1986

City	Gate Fees Average[1]	Gate Fees N[2]	Gate Fees Percent[3]	Unloading Fees Average[1]	Unloading Fees Full Loads[4] N[2]	Unloading Fees Full Loads[4] Percent[3]	Percent of[5] 1980
Atlanta	$ 8.24	22	46	$55.23	22	23	177
Boston	12.67	30	50	58.00	30	50	148
Chicago	13.00	7	20	62.77	17	32	183
Detroit	13.50	10	42	53.71	24	38	199
Jessup/Landover	12.17	6	29	58.57	21	58	NA
Los Angeles	30.00	1	14	60.18	14	71	NA
Louisville/Cinn.	29.75	4	18	53.59	16	44	206
Montreal	12.38	4	18	44.48	29	73	NA
Nashville	None	0	0	59.22	9	46	NA
New Jersey	15.00	1	0	69.47	19	69	NA
New York City	12.78	23	48	51.92	39	65	115
Norfolk	None	0	0	47.71	12	80	NA
Philadelphia	8.95	19	50	45.00	26	59	116
Pittsburgh	15.00	1	7	55.40	25	79	NA
Raleigh	7.00	1	10	70.56	9	50	NA
Toronto	16.74	19	73	49.45	35	42	NA
Load Stacking:							
Hand stacked	11.75	61	25	57.68	261	61	NA
Pallets	13.92	97	27	40.33	155	32	NA
Slipsheet	13.33	18	18	48.33	72	59	NA
Bulk	10.00	1	8	93.64	62	50	NA
All	13.09	177	25	55.66	554	45	217

NOTES:
1. Average fee reported of those encountering charges on first drop.
2. Number encountering charges.
3. Percent of all drivers with only drop in that location.
4. Carriers making only drop.
5. Comparison with average unloading charges reported by Pavlovic et al., p. 147.

Figure 2: Unloading for Current Trip

viewed as weak evidence that the degree market power enjoyed by lumpers may have increased.

Gate/Unloading Fees Reflected in Freight Rates

The results of the freight rate estimation are presented in Table 2. The equation explains 62 percent of the variation, and is highly significant. Moreover, the signs and magnitudes of all parameter estimates are in accord with expectations.

The parameter estimate associated with gate/unloading charges (1.389) is significantly different from zero at the .01 level. It is not significantly different from one at conventional levels. This suggests that carriers are reimbursed, at least in part, for gate/unloading charges. In fact, with a point estimate greater than and insignificantly different from one, it appears likely that, on average, carriers are compensated for all of these charges.[8] If the transportation markets are operating efficiently, this would be the expected result. Regardless of the equity or legality of these costs, they are costs and should be reflected in the rate structure.

This finding is not inconsistent with the widespread perception among carriers and drivers that unloading fees are unfair charges that they bear, rather than the shipper/receiver. A carrier is normally offered a rate to move a cargo from point A to point B. The rate is for the entire transport service, from pickup to unloading. That is, the rate usually is not broken down into a part for pickups, a part for the linehaul movement, and a part for drops. Therefore, the individual carrier has no practical way of discerning if a rate to B is higher than a rate to C because of higher unloading costs at the former.

The same may be said for receivers. They are not likely to know or even to suspect that they may actually be paying the unloading cost via the freight rate. Unless a system using lumpers is more efficient, the receiver may actually have higher logistics costs by overtly avoiding unloading charges than they would have if they assumed the function of unloading.

Table 2. Freight Rate Estimation

Variable	Parameter Estimate[2]	Standard Error
Intercept	-151.5	204.0
Distance (DIST)	1.054*	.08857
Distance squared (DIST2)	-.00004167	.00002756
Cubic capacity (VOL)	1.865*	.06354
Number of pickups (PKUP)	45.09*	6.343
Number of drops (DROP)	6.403	9.154
Gate/Unloading fees (G&U)	1.389*	.3272
Average daily loss (ALOS)	.09681*	.01230
Owner-operator (OWN)	22.44	26.50
Private carrier (PC)	15.43	46.97
November survey (NOV)	-229.9*	35.44
January survey (JAN)	-212.0*	32.61
March survey (MAR)	-200.1*	33.15
Route US I-75 (RT75)	-78.97*	25.93
Route US I-10 (RT10)	-177.0*	38.28
F	104.1*	
R^2	.62	
Number of observations[1]	912	

NOTE: * Significantly different from zero at the .01 level.

1. Carriers unsure of gate/unloading charges and those unloading themselves at any drop were eliminated. Also eliminated were respondents unsure regarding any of the other variables. Those eliminated included a disproportionate number for-hire fleet drivers, primarily due to their ignorance of the freight rate.
2. Significantly different from zero at the .05 level.

Extent and Nature of Coercion

Sixty percent of the 1,615 responding carriers indicated that since 1980 they had been coerced by threats of delay or inconvenience (i.e., additional tasks) to use lumpers. Seventeen percent reported other instances in which threats of violence had been resorted to. Those responding in the affirmative were asked to list up to four destinations where these problems have been encountered. The five most frequently mentioned destinations at each survey site[7] are presented in Table 3. For both instances of delay/inconvenience and violence New York City looms as the most prominent problem area for carriers serving Florida. The large majority of those listing New York City made specific reference to the Hunts Point Market. It should be borne in mind, however, that part of the reason for New York City's strong showing is that the Northeast is Florida's principal consumer market. The second most common response with regard to delay/inconvenience was "Everywhere." One driver in fourteen perceives that this type of coercion is the standard practice.

Forty-two percent of the carriers feel that problems related to lumping have worsened since 1980, while only 3 percent see improvement and 15 percent view the problem as being of little importance. Moreover, only 6 percent feel that law enforcement efforts against coercion have increased since 1980, while 62 percent view enforcement efforts as insignificant or nonexistent (Figure 3). These results are disturbing considering that in 1980 these abuses were labelled by Congress as illegal and a federal agency, the ICC, was charged with policing duties. The ICC, however, probably does not have the manpower necessary for the task. Moreover, in conversations between the authors and ICC officials, they have indicated that the agency views this enforcement effort as having a low priority.

Carrier Load Acquisition Decisions

In the January, March, and June surveys, drivers were asked if they had ever refused a load due to anticipated problems related to unloading. Surprisingly, over a quarter (27

Table 3. Coercion Related to Unloading

Coercion by threats of delay or inconvenience since 1980	NUMBER	PERCENT
Yes	964	60
No	644	40
No Response	86	

Five most frequently mentioned destinations at each survey location

US I-95			US I-75			US I-10		
Destination	Number	Percent[1]	Destination	Number	Percent[1]	Destination	Number	Percent[1]
New York City	128	17	New York City	75	13	New York City	29	10
Everywhere	66	9	Chicago	75	13	Miami	28	10
Miami	29	4	Miami	61	10	Los Angeles	27	10
Boston	24	3	Detroit	54	9	California	24	8
Philadelphia	23	3	Everywhere	40	7	San Francisco	21	7

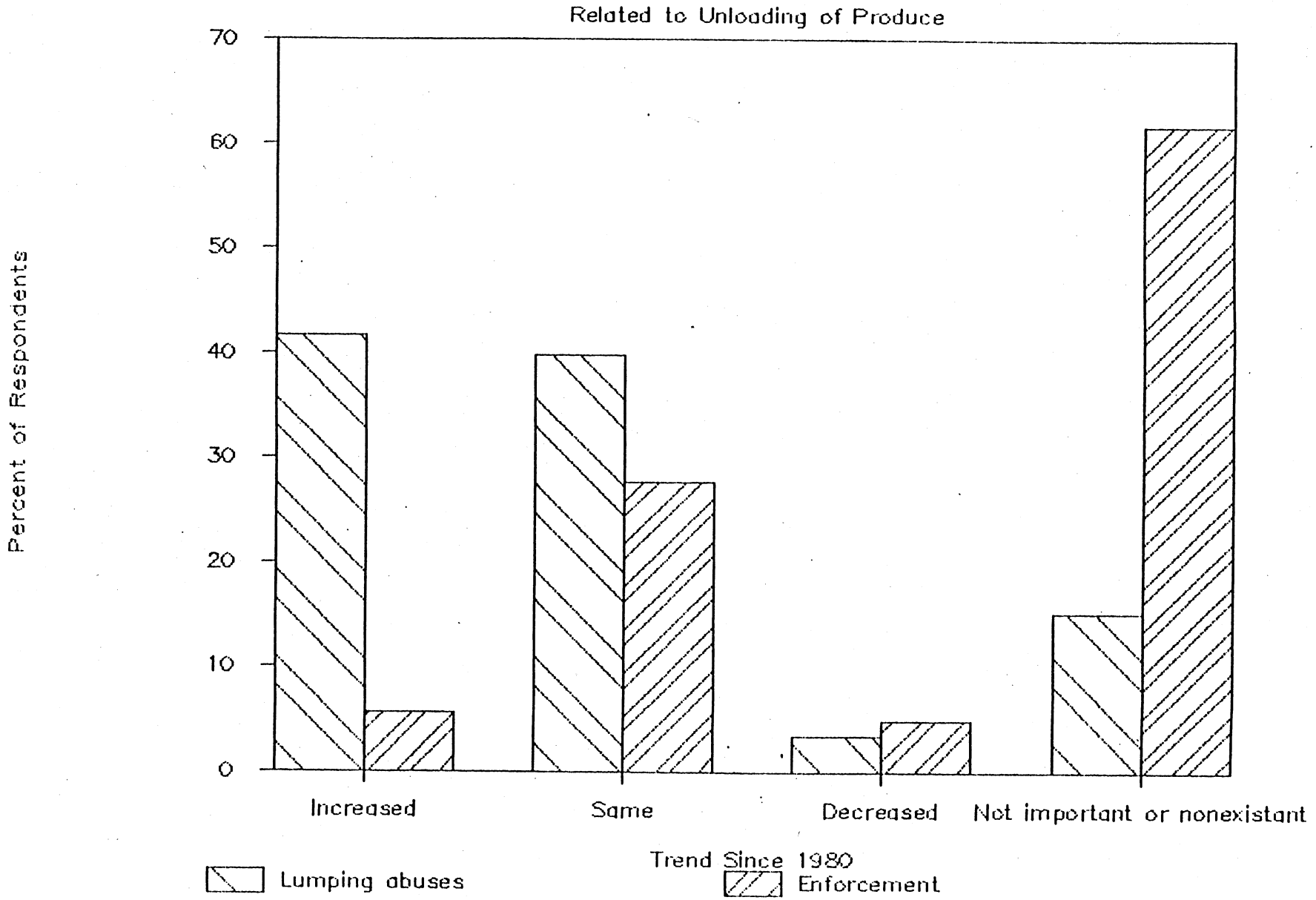
Coercion by threats of violence since 1980	NUMBER	PERCENT
Yes	281	17
No	1,327	83
No Response	86	

Five most frequently mentioned destinations at each survey location

US I-95			US I-75			US I-10		
Destination	Number	Percent[1]	Destination	Number	Percent[1]	Destination	Number	Percent[1]
New York City	56	8	New York City	28	5	Los Angeles	8	3
Philadelphia	13	2	Miami	22	4	San Francisco	8	3
Miami	12	2	Chicago	19	3	New York City	6	2
Boston	9	1	Detroit	17	3	Chicago	6	2
Chicago	7	1	Los Angeles	11	2	Miami	5	2

[1]Percent of carriers interviewed at that survey location.

Figure 3: Abuses and Enforcement



percent) responded in the affirmative. Owner-operators were twice as likely as either for-hire or private fleet drivers to have refused loads (36 percent for owner-operators versus 18 percent for for-hire and private fleet drivers). To determine if such refusals are largely a phenomenon of the pre-Motor Carrier Act of 1980 period, drivers were asked for the year in which they last refused a load. Less than one percent of those who have ever refused a load, last refused a load prior to 1980. Moreover, 83 percent of the most recent refusals were in 1985 or 1986 (Figure 4).

To identify areas in which problems related to unloading are severe, respondents were also asked for the destination city of the last load that was refused (Table 4). Nearly three times more respondents indicated New York City than any other destination. As would be expected, a larger percentage of those interviewed along US I-95 than along either US I-75 or US I-10 mentioned New York City as their last refused destination (47, 18, and 25 percent, respectively). However, at all three survey sites, New York City was the most frequently mentioned refused destination. Miami was second in importance, accounting for 10 percent of the refused destinations. Third and fourth were Chicago and Boston. Together, these four cities accounted for over half of the refused destinations, and the top 10 accounted for three quarters.

Some destinations were mentioned with surprising infrequency. For example, only one respondent identified Philadelphia as the last refused destination. Other destinations with low refusal rates were Pittsburgh, Baltimore, Jessup-Landover, Dallas-Fort Worth, and Montreal, each mentioned by only two respondents. This suggests that conditions regarding unloading may be better regarding unloading at these destinations. Further study would be necessary, however, before this conclusion could be drawn with confidence.

Figure 4: Year Last Load Refused

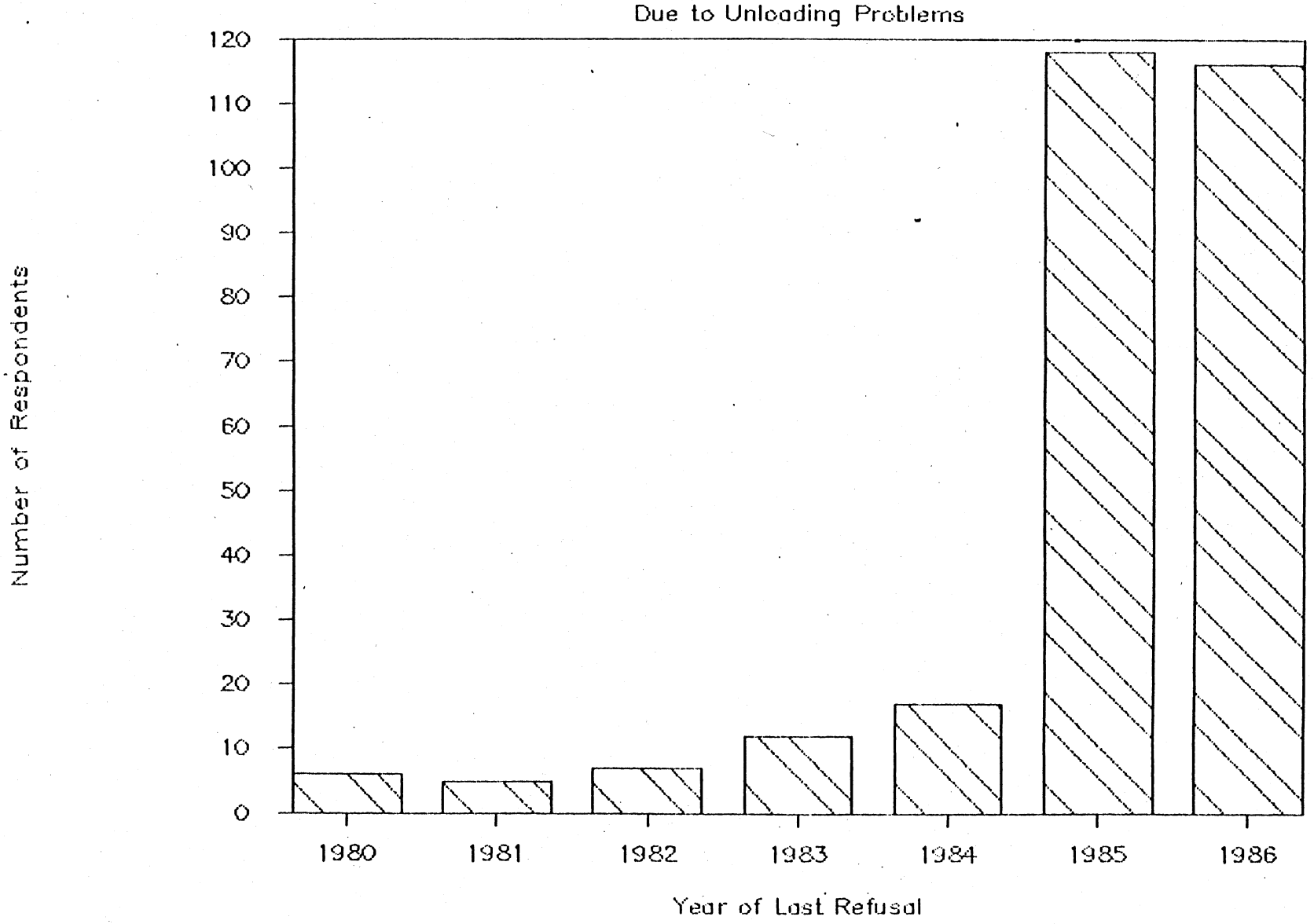


Table 4. Ten Most Important Destination Cities (States) of Last Loads Refused Due to Anticipated Problems Related to Unloading

City or State	Number	Percent[1]	Percent by Survey Site[2]		
			US I-95	US I-75	US I-10
New York	94	30	47	18	25
Miami	32	10	8	10	13
Chicago	27	8	5	13	5
Boston	16	5	12	1	2
San Francisco	13	4	2	5	7
Los Angeles	13	4	3	1	7
Atlanta	12	4	2	5	3
California	11	3	1	2	11
Detroit	11	3	0	6	3
Florida	10	3	2	3	5
Total	239	75	80	69	80

[1]Percent of the 318 respondents who indicated the destination city of last refusal

[2]Percent of those surveyed at each site who indicated the destination

Summary and Conclusions

The major findings of the study are:

1. The use of lumpers is widespread in the produce industry.
2. The majority of drivers perceive that they have been subjected to coercion by lumpers since 1980.
3. Carriers generally view the situation as being unchanged or worse since 1980.
4. It is not uncommon for loads to be declined due to anticipated problems related to lumping.
5. Gate and unloading fees are normally reflected in freight rates.

What does all this mean, regarding the equity and efficiency of the system? Clearly, a large proportion of drivers feel that they are being taking advantage of and that corrective measures legislated in the Motor Carrier Act of 1980 have been insufficient, at least as enforced. It seems likely, however, that some drivers would exaggerate in their minds the extent of these abuses, and that in reality the problem is not as severe as the results indicate. On the other hand, it seems highly unlikely that there is not a problem given the large numbers who perceive a problem. Over 60 percent stated that they had been subjected to coercion since 1980 and over ten times as many expressed the view that the situation has deteriorated since 1980 rather than improved. In addition, 27 percent reported refusing loads due to anticipated problems unloading. Evidently many carriers are willing to accept nonoptimal routings or, at least, extended search efforts to avoid problems related to lumping. Even if these problems only exist in carriers' minds (which is doubtful), the perception results in inefficiencies.

The results indicate that drivers are wrong regarding who pays for gate and unloading charges. The common belief among drivers is that these charges are borne by the carrier. Our data strongly indicate to the contrary, that the charges are normally passed on to the shipper/receiver through the freight rate. There are two main implications of this finding.

First, localities with high gate and unloading charges may be at a competitive disadvantage to those with lower charges. That is, excessive lumping charges impact, ultimately, upon wholesale and retail produce prices. From an efficiency standpoint this may be more serious than if the charges were borne by the carriers. The reason for suspecting this is that carriers may have fewer alternatives than purchasers of produce (i.e., carriers may have lower elasticities of supply for their services than the absolute elasticities of demand of produce buyers for produce from a specific location). For any given load, a carrier may tolerate a higher lumping charge, while a produce buyer may go elsewhere rather than deal with a location that consistently has noncompetitive produce prices.

Second, despite appearances, receivers usually cannot escape the costs of unloading by allowing lumpers to operate on their docks, rather than maintaining the personnel to perform this function. Indeed, unless lumpers charge less than the costs receivers would incur from unloading the trucks themselves, receivers may actually pay more for unloading when lumpers are employed. Realization of this fact might facilitate the elimination of the lumping issue by receivers willingly assuming responsibility for unloading.

FOOTNOTES

[1]Gate or entrance fees may be charged by facility owners (often municipalities) to defray the costs of upkeep. However, there have been indications that at some privately owned loading docks, gate fees are linked with unloading or lumping fees (U.S. Congress, 1978).

[2]The lumpers at each facility are usually organized under a hierarchy of foremen or crew chiefs. Frequently, the lumpers and the crew chiefs are associated with the Teamsters Union, which further serves to preserve organizational discipline.

[3]There are several reasons why casual workers may be allowed to operate from a facility's loading docks. First, the facility avoids the direct costs of hiring workers to assist with unloading. Second, if none of the facility's official workers need to enter vehicles, insurance costs may be lower. Third, as a crew of lumpers can unload a vehicle faster than a single driver, use of dock space is minimized as is the time that produce is without refrigeration. Finally, as lumpers are frequently associated with the Teamsters, refusal to allow lumpers may result in union action against the facility (U.S. Congress, pp. 4-13).

[4]In conversations with the authors, drivers have indicated two principal types of additional tasks: restacking onto other pallets (known as "fingerprinting"), and being forced to unload some distance from the loading dock.

[5]The interviews were conducted in a nonthreatening manner. Enumerators dressed casually, identified themselves as students at the University of Florida, and assured the respondents of anonymity.

[6]The percentages of free unloads for hand stacked, palletized, slip sheeted, and bulk loads were, respectively, 40, 68, 43, and 46. The percentages of free unloads for loads arranged through brokers, shippers, and receivers were, respectively, 33, 43, and 52. Employing contingency table analysis, these differences were significant at the .01 level.

[7]The division into survey sites is to account for the fact that carriers along the different routes tend to serve different areas of the country on a regular basis.

[8]If carriers are assumed to be risk averse and it is recognized that unloading charges may vary across location or time, then the point estimate greater than one may reflect a risk premium.

APPENDIX 1

Questionnaire

EXEMPT GOODS TRUCK

Your Initials	Trailer length	Trailer Width	Number of Drivers	Refrigerated? Yes No

1. How long have you been a driver? _____
2. Which best describes your operation? (a) owner-operator (b) fleet operation (c) private operation (d) agricultural cooperative (e) other _____
3. Do you have ICC authority? YES NO
4. Out of what state do you operate? _____(Base plate state)
5. About what percentage of time do you haul Produce or Ornamentals _____%
   Under a Lease _____%
6. What are you hauling?

Major Commodity (List 2)	Number of pickups	Number of Drops	Final Destination (city, state)
_____	_____	_____	CITY _____
_____			STATE _____

7. How did you get this load? (a) broker (b) direct contact with shipper (c) direct contact with receiver (d) other _____
8. Did you have this load arranged by the time you entered Florida? YES NO
9. What are you getting for the load you are now carrying? $ _____
10. What did you bring into Florida? _____
11. From what city and state? _____

    How did you get the load?

    REGULATED: ____used own authority
    ____lease
    ____own the load
    ____other

    EXEMPT: _____out-of-state broker
    _____Florida broker
    _____shipper
    _____receiver
    _____own the load
    _____other _____

12. What did you get on the load you brought into Florida? $ _____
13. This time of year how frequently do you get to Florida? _____

Lumping Survey

Only ask if load is NOT ORNAMENTALS

1. Is the load you're hauling tonight

a. hand stacked? b. on pallets?

c. on slipsheets? d. bulk loaded?

2. For EACH DROP you will be making, please tell me the city, how much will be unloaded, and the gate fees and unloading fees you expect.

(NOTE: Remember to get all of the drops)

	DROP 1	DROP 2
City	_____	_____
Amount	_____ crate/cart pallet	_____ crate/cart pallet
Gate fee	$ _____	$ _____
Unld fee	$ _____ or ---> Driver unload	$ _____ or ---> Driver unload

	DROP 3	DROP 4
City	_____	_____
Amount	_____ crate/cart pallet	_____ crate/cart pallet
Gate fee	$ _____	$ _____
Unld fee	$ _____ or ---> Driver unload	$ _____ or ---> Driver unload

3 Do you pay gate fees and unloading fees out of your own pocket or does your firm or the receiver normally pay you back?

1. Own pocket 2. Firm pays back 3. Receiver pays back

4. _____ pays back

4. Since 1980 have you been forced to use lumpers

1. by threats of violence against you or your equipment?

YES NO

------> If YES Where? (City) _____
_____
_____
_____

2. by having to wait unusually long to unload or to perform additional tasks such as restacking or carrying the load some distance to the loading dock?

YES NO

------> If YES Where? (City) _____
_____
_____
_____

5. Have you ever turned down a load because you expected problems or high unloading fees at the destination?

YES NO

------> If YES Where? (City) _____

Year? _____

6. Since 1980, which best describes:

1. problems with lumpers?

1. Increased
2. Stay the same
3. Decreased
4. Nonexistant or unimportant

2. enforcement against lumping abuses?

1. Increased
2. Stay the same
3. Decreased
4. Nonexistant or unimportant

APPENDIX 2

The Freight Rate Equation

The basic form of the reduced form rate equation is based on earlier work by Beilock. The freight rate (RATE) is assumed to be positively related to the distance of the haul, DIST. The squared term, DIST2, is included to capture possible tapering in the RATE-DISTANCE gradient. As larger vehicles can carry more produce, trailer capacity is included as an intercept shifter. The average daily loss in cargo value (ALOS) is included to capture value or urgency-related differences in service. The numbers of pickups (PKUP) and drops (DROP) are included on the assumption that associated costs are reflected in freight rates. However, as gate/unloading fees (G&U) are also included, the explanatory power of DROP will probably be compromised. The binary variables PC and OWN are included to capture rate differentials based on the carrier type. If this transport market operates with reasonable efficiency (as we believe it does), then these variables should not possess significant explanatory power. Finally, binary variables are included to capture differences across the survey periods (NOV, JAN and MAR) and the routes (RT 75 and RT 10).

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