

**IDAHO  
COMMERCIAL TRUCK REGISTRATION  
STUDY**

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**FINAL REPORT**

**MARCH 2004**

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Prepared for

**IDAHO TRANSPORTATION DEPARTMENT**

Prepared by

**NIATT**

**NATIONAL INSTITUTE FOR ADVANCED TRANSPORTATION  
TECHNOLOGY  
UNIVERSITY OF IDAHO**

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# Idaho Commercial Truck Registration Study

## Final Report

Prepared for the

**National Institute for Advanced Transportation  
Technology (NIATT)  
University of Idaho  
Moscow, ID 83844-0901**



By

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## **EXECUTIVE SUMMARY**

The state of Idaho has experienced significant structural changes in both process and implementation of the commercial truck registration system as a result of the case settlement between the American Trucking Association and the state in 1999. The overall purpose of this report is to extend and finalize the evaluation in the Idaho Weight Distance Conversion Study, initiated by Dr. James Jones for the National Institute for Advanced Transportation Technology (NIATT), and to undertake the following:

- Analyze and compare Idaho Transportation Department's former and current truck tax system;
- Examine and analyze the impacts of the new truck tax structure on intra-and inter-state truck operations;
- Document and analyze the economic and administrative impacts of the new tax system on affected taxpayers;
- Recommend appropriate tax structure options and directions for Idaho;
- Summarize findings in a report to the NIATT; and
- Deliver verbal reports to the Idaho Transportation Board and the Idaho State Legislature.

## **STUDY FINDINGS**

Total registration revenues collected from commercial vehicles over 60 thousand pounds has fluctuated in recent years due to legislative changes in the registration system.

Changing the registration process from a post year to a pre year payment caused revenue to the state to increase to \$64.5 million in FY 2001, decreasing to \$38.8 in FY 2003.

Non-Idaho based firms experienced a decline of \$8.2 million in payments compared to an increase of \$3.6 million for Idaho based firms. This change suggests that the goal of the ATA lawsuit and the subsequent negotiations has been achieved.

This decline in revenue does not seem to be driven by the state's economy since that economy, based on the latest available figures, does not appear to be decreasing, though it has slowed. Some sectors in the economy that are strong users of truck transportation have decreased and other truck using sectors have increased in level of activity.

There was a significant increase between FY 1999 and 2003 in revenue collected from Idaho truckers, both in absolute value and in proportion of Idaho based registration revenues to non-Idaho based revenue due to changes in the registration system.

Registration revenues from Idaho increased 25.2 percent during the time period from \$14.3 million in FY 1999 to \$17.8 million in FY 2003. The distribution over weight classes remained fairly constant, with the largest increase being seen at the 90,001 GVW vehicles and above, with 33.1 percent, followed by the 80,001 to 90,000 GVW vehicles category experiencing a 17.5 percent increase.

It is interesting that, even as revenue collected from the Idaho truckers increased over this time period, the number of vehicles registered by Idaho based firms (above 60,000 lbs.) declined by 18 percent, reaching 18,915 vehicles in FY 2003. Most of this decline occurred in the 70,001 to 80,000 GVW category. At the same time, the growth in vehicle miles traveled annually by commercial freight traffic continued, though it slowed to about a 1 percent growth in the last four years, significantly less than the almost 5 percent annual growth over the past twenty years.



The changes to the Idaho commercial vehicle registration system not only impacted state revenues, but also the operating costs of the firms competing for freight shipments. Firms with lower annual miles and higher apportioned percentages in Idaho experienced a disparate increase in cost per ton-mile, compared to high mileage firms with low Idaho apportionment. The new system increased registration costs per ton-mile 120-135 percent depending on weight of vehicle, while high mileage firms experienced a decrease of 33-37 percent on a ton-mile basis.

Analysis done on a percent of total cost of operation confirmed similar relationships. Examining both special fuel tax and registration fees indicated the firms with higher Idaho apportioned percentages again experience increases in costs, though to a smaller degree, and at the lower Idaho apportioned percentage, the new registration structure has no noticeable positive or negative effect.

Curious cost disparities exist in the current registration system, disparities that may be an encouragement for firms to under report mileage. For example, at 7,500 miles the cost per mile is 6.4 cents while at 7,501 miles it jumps to 14.7 cents; similarly, at 50,000 miles the cost is 4.6 cents while at 50,001 miles it increases to 6.7 cents. This phenomenon is a result of the new registration system with five tiers of weight as contrasted to the previous weight and distance tax structure with a continuous per mile payment.

The economic impact of the new registration was evaluated as to impact on competition, both modal and industry. A case study, using a spatial equilibrium model, done by Hu and Jones, found that there was no change in modal competition for the wheat movements out of Idaho. Further, no change in the competitiveness of the wheat industry of Idaho relative to its competitors was identified.

An accepted goal of revenue neutrality for the new system was set at \$41.3 million in the negotiation process. The final quarterly weight/distance amount combined with up front registration fees resulted in revenue being greater than that goal for the two years of FY 2001 and 2002. There now appears to be a revenue shortfall of \$2.5 million which, when inflated for only two years to FY 2003, increases to \$4.1 million. If the \$41.3 million goal

were inflated from the time period when it had first been achieved, FY 1997, the goal increases to slightly over \$47 million and the potential annual shortfall then appears to be around \$8 million.

Other related issues developed in the course of the study involved evasion concerns, use of temporary permits, and restructuring of the registration system. Incentives exist to underreport and the slight decrease in enforcement efforts may condone such underreporting. The cost disparities on the current system as contrasted to the previous weight and distance system are the source of some incentives.

The use of temporary trip permits has increased in FY 2003, after declining the previous two years. New legislation made the permits applicable to more hours at a small increase in cost. Thus, the use of the temporary permit has found favor with the trucking firms. Such usage, while having undetermined implications for revenue for the state, does appear to be an efficient and low cost way for the seasonal needs of the industry and the varying economic conditions in the Idaho economy to be served, without creating excess capacity in the trucking sector.

Restructuring in registrations fee process and structure itself may be useful due to the following three issues. Data compilation under this system does not provide the detailed information that the earlier system did to the policymakers in the state. Firms utilizing the IRP registrations have a competitive cost advantage over the local full fee paying Idaho trucker. As indicated in several analyses, the low mileage (high apportionment) truck firm experiences significant increases in registration costs per ton mile relative to the high mileage (low apportionment) firm.

Finally, the current system does not appear to incorporate accepted highway impact/damage relationships. The generally accepted damage relationship shows a third power exponential increase as load per truck configuration or per axle increases. The current system is fairly linear in response to weight increases, thus not reflecting the impact on roads as the weight increases.

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## RECOMMENDATIONS

This study compared the impacts of the new registration system on revenue to the state of Idaho, on intra- versus inter-state trucking, and the equity of treatment under the new system for differing weight and mileage experienced by the trucking firms. The following recommendations are the result of those analyses.

**1. Existing and increased data should be compiled into a data warehouse.**

Continued evaluation and modification of the registration system requires full and complete information, some of which is only partially available.

**2. The cost and benefits of increased enforcement should be evaluated relative to evasion of user fees.**

The current system can be encouraging some evasion by trucking firms. The cost and benefits of increasing enforcement efforts should be determined and adjustments made.

**3. The existing registration system should be examined relative to revenue generation and efficiency.**

It appears, though data are limited to one complete year, a \$2.5 -\$4.1 million shortfall below revenue neutrality may be occurring. A system restructuring towards a weight and distance system may be found appropriate.

**4. The existing registration system should be examined relative to equity between high and low apportionment firms.**

The existing rate structure, since it is no longer a direct distance fee, causes the lower annual mileage (higher apportionment) firms to pay more per mile than the higher annual mileage (lower apportionment) firms, overall and within each tier. A weight and distance system may eliminate this disparity.

**5. The use of temporary permits should be examined relative to revenue and use impacts.**

Temporary permits appear to be a good business tool, allowing the trucking firms to respond to seasonal needs by Idaho industries. However its usage may have implications for evasion and revenue neutrality.

**6. A comprehensive evaluation of surrounding states as to fee structure and implementation and impact on competition should be undertaken.**

The trucking industry and production industries in Idaho compete directly with the surrounding states. The competitive situation caused by differing registration rate structures should be determined.

**7. Consideration should be given to the relationship between weight per axle, and weight per truck configuration relative to the rate charged per weight category.**

## **INTRODUCTION/BACKGROUND**

The state of Idaho has experienced significant structural changes in both process and implementation of the commercial truck registration system as a result of the case settlement between the American Trucking Association and the state in 1999. Prior to this case, commercial trucks operating within or through the state were assessed registration fees of \$120 plus a weight distance tax that dates back to the early 1950s. Commercial operators were assessed rates ranging between 3 to 7.7 cents per mile, based on the registered gross vehicle weight. A separate rate structure (2.245 cents at 80,000GW) applied to vehicles hauling a limited set of commodities, primarily bulk forest products, gravel and farm products. This separate rate schedule was the primary impetus for the ATA lawsuit against the Idaho Transportation Department. The 4th Judicial District Court of Idaho ruled in favor of the ATA finding the separate rate structure an unconstitutional infringement on interstate commerce. As part of the negotiations with the ATA, the legislature passed legislation to end the existing weight distance system.

Effective October 1, 2000, a new registration schedule was initially established and implemented based upon the maximum registered vehicle weight and three mileage categories. Effective October 1, 2001, this registration schedule was modified to include five mileage categories including 1-7,500 miles, 7,501-20,000 miles, 20,001-35,000 miles, 35,001-50,000 miles and over 50,001 miles, as shown in Table 1.

## **SCOPE AND OBJECTIVES**

### **OBJECTIVES**

The overall purpose of the project is to extend and finalize the evaluation of the Idaho Weight Distance Conversion Study, initiated by Dr. James Jones for the National Institute for Advanced Transportation Technology, and to investigate the following;

Analyze and compare Idaho Transportation Department's former and current truck tax system;

- Examine and analyze the impacts of the new truck tax structure on intra- and inter-state truck operations;
- Document and analyze the economic and administrative impacts of the new tax system on affected taxpayers;
- Recommend appropriate truck tax structure options for Idaho;
- Summarize findings in a report to the NIATT;
- Deliver verbal reports to Idaho Transportation Board and Idaho State Legislature

**Table 1 Idaho Five-Tier Mileage Registration Schedule**

<b>Maximum Gross Vehicle Weight</b>	<b>Miles Driven 1 – 7,500*</b>	<b>Miles Driven 7,501 – 20,000</b>	<b>Miles Driven 20,001 – 35,000</b>	<b>Miles Driven 35,001 – 50,000</b>	<b>Miles Driven Over 50,000</b>
60,001-62,000	223	511	789	1,068	1,560
62,001-64,000	251	576	890	1,205	1,760
64,001-66,000	280	642	992	1,342	1,960
66,001-68,000	309	707	1,093	1,479	2,160
68,001-70,000	337	773	1,194	1,615	2,360
70,001-72,000	366	838	1,295	1,752	2,560
72,001-74,000	394	904	1,396	1,889	2,760
74,001-76,000	423	969	1,498	2,026	2,960
76,001-78,000	451	1,035	1,599	2,163	3,160
78,001-80,000	480	1,100	1,700	2,300	3,360
80,001-82,000	494	1,133	1,751	2,368	3,460
82,001-84,000	509	1,165	1,801	2,437	3,560
84,001-86,000	523	1,198	1,852	2,505	3,660
86,001-88,000	537	1,231	1,902	2,574	3,760
88,001-90,000	551	1,264	1,953	2,642	3,860
90,001-92,000	566	1,296	2,004	2,711	3,960
92,001-94,000	580	1,329	2,054	2,779	4,060
94,001-96,000	594	1,362	2,105	2,848	4,160
96,001-98,000	609	1,395	2,155	2,916	4,260
98,001-100,000	623	1,427	2,206	2,985	4,360
100,001-102,000	637	1,460	2,257	3,053	4,460
102,001-104,000	651	1,493	2,307	3,121	4,560
104,001-106,000	666	1,526	2,358	3,190	4,660
106,001-108,000	680	1,558	2,408	3,258	4,760
108,001-110,000	694	1,591	2,459	3,327	4,860
110,001-112,000	709	1,624	2,510	3,395	4,960
112,001-114,000	723	1,657	2,560	3,464	5,060
114,001-116,000	737	1,689	2,611	3,532	5,160
116,001-118,000	751	1,722	2,661	3,601	5,260
118,001-120,000	766	1,755	2,712	3,669	5,360
120,001-122,000	780	1,788	2,763	3,738	5,460
122,001-124,000	794	1,820	2,813	3,806	5,560
124,001-126,000	809	1,853	2,864	3,874	5,660
126,001-128,000	823	1,886	2,914	3,943	5,760
128,001-129,000	837	1,918	2,965	4,011	5,860

Source: Idaho Weight Distance Conversion Study 2004 Final Report, James R. Jones and House Bill 364 (See Appendix III)

## WORK TASKS

- 1) Analyze how Idaho's new truck registration system compares with the older weight distance system
  - a. Revenue comparisons from a "revenue-neutrality" point of view (actual vs. projected).
  - b. Relative to growth in truck miles
  - c. Impacts to different vehicle configuration from each system
  - d. Identify shifts in distribution of truck classifications / weight categories
  
- 2) Examine intra- and inter-state revenue distribution and implications from both systems
  - a. Relative to growth in truck miles
  - b. Impacts to different vehicle configuration from each system
  - c. Identify shifts in distribution of truck classifications / weight categories
  
- 3) Document and analyze expected economic and administrative impacts on taxpayers (Trucking Industry)
  - a. Revenue streams to operators
  - b. Staffing considerations to truck operations
  - c. Administrative burden
  - d. Positive and negative impacts on costs
  
- 4) Identify and make recommendations for an appropriate registration system for Idaho
  - a. Identify policy relevant options
  - b. Identify, compare and present impacts and distribution of impacts for each option, relative to state revenues, operator equity and administrative burden
  
- 5) Write report and present verbal presentations to Idaho Transportation Board and Idaho Legislative Committees



## **REVENUE IMPACTS**

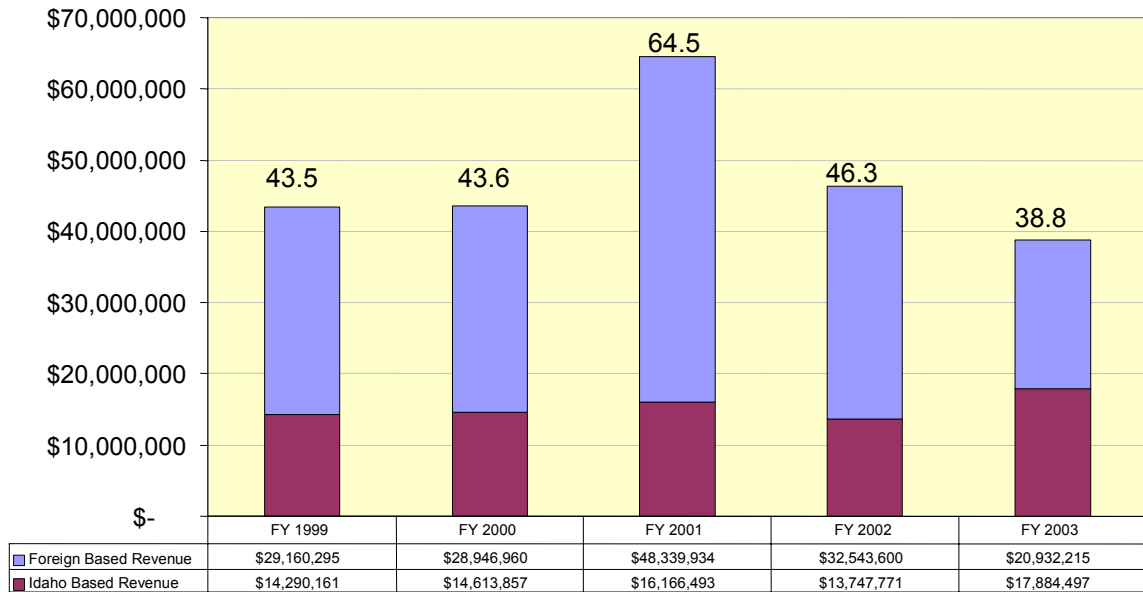
As a result of the ATA court settlement and the implemented changes to the Idaho state registration system, an evaluation of how these changes have impacted registration revenues is the first step towards evaluating and identifying any necessary adjustments or refinements. Registration revenues from commercial vehicles are necessary to provide for the common public good and infrastructure, supported by and for, sustained freight and economic development, in addition to that component shared with passenger vehicle registrations and gas-tax revenues.

Total registration revenues collected from commercial vehicles over 60 thousand pounds have fluctuated in recent years, as illustrated in Figure 1. A slight decrease in revenues occurred between fiscal year 1999 and 2000, when registration revenues dropped from \$43.6 to \$43.5 million. Beginning in fiscal year 2001, however, an evident increase in the amount of revenues collected occurs when registration revenues reach \$64.5 million. This increase coincided with the time period when both the registration fee schedule was changed from a weight-distance system to the tiered schedule and also a systematic change for how and when the fee was collected. Prior to 2001, carriers were assessed a quarterly weight/distance tax based on the actual miles traveled in the previous quarter. Additionally, carriers paid an apportionment of a \$120 annual registration fee. Beginning October 1, 2000, carriers were assessed apportioned registration fees using a three-tier, then ultimately a five-tier, system. Placement on the fee schedule was based on the apportioned miles traveled during the base period (July 1 through June 30 of the previous year). This change resulted in considerable revenue collection overlap for the fiscal years of 2001 and 2002, as carriers were paying both past weight distance tax and future registration fees within the same year.

It is also useful to notice that the increase in revenues collected was proportionately larger for non-Idaho based firms. This is primarily due to the operational differences that exist between Idaho and non-Idaho based freight firms. Non-Idaho based operations are generally large, higher-mileage operators and generally fall into the greater than 50,000

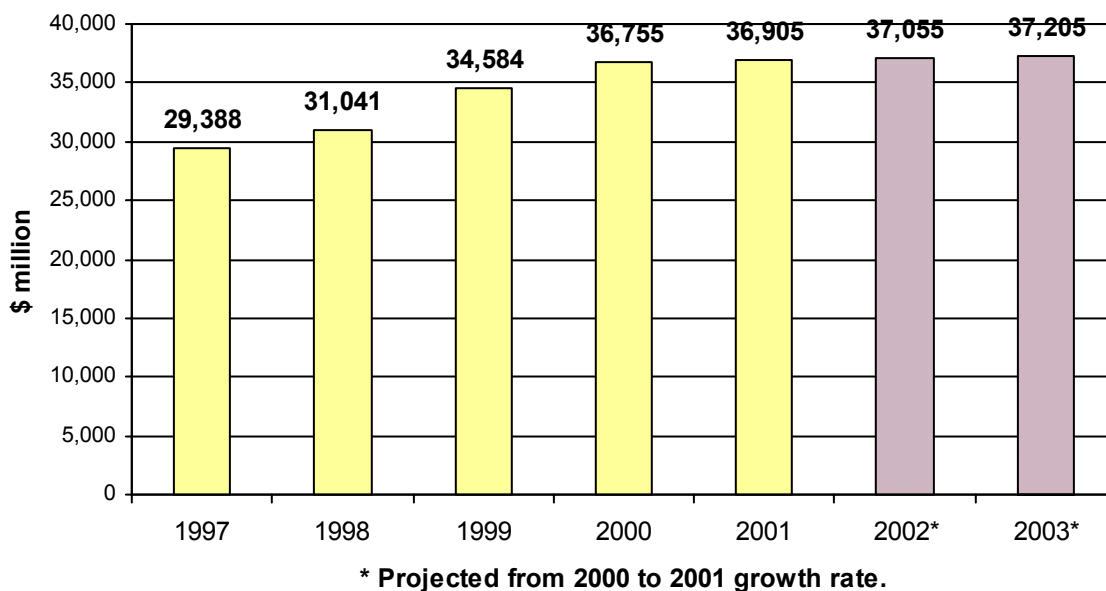
annual mileage category whereas Idaho based firms are more diverse, including many small, low-mileage operators. Thus, after the registration change many Idaho based firms could be more strategic about registering vehicles that would be utilized and registering other vehicles in lower mileage categories. Idaho based operators also have the flexibility of paying quarterly, which can alter the amount of Idaho based revenues collected in a given year. It is also likely that fewer Idaho based vehicles are being registered, as will be discussed later.

Comparison of the changes in collected registration revenues between fiscal year 1999 and 2003 reveals a decrease of \$4.7 million as revenues decrease from \$43.5 to \$38.8 million respectively. The proportion of revenues collected from non-Idaho based firms also decreases over this time horizon (\$8.2 million decrease) while Idaho based revenues increase (\$3.6 million increase). This result is consistent with one of the goals of the ATA case settlement.



**Figure 1 Comparison of revenue from trucks over 60,000 GVW.  
Source: Idaho Transportation Department, Economic Research**

It is useful to evaluate the decline in registration revenues between 1999 and 2003 to test for the reason for this decline. Use of other economic growth indicators provides that evaluation. The Idaho state economy, as measured by the annual Gross State Product, has steadily increased, rather than decreased since 1997, although at a much slower rate beginning in 2000, as illustrated in Fig. 2. This is consistent with the growth rate of the national U. S. economy and is indicative of the slower growth experienced at the end of the technology driven economy in the mid to late 1990s.



**Figure 2 Idaho gross state product.**

While the overall state economy has experienced steady growth, specific industries and sub-sectors within the state economy have experienced declines and increases over this time period, as highlighted in Table 1. Those sectors of the Idaho economy experiencing decreases between 1997 and 2001 include manufacturing durable goods, metal mining, electronic equipment, food and kindred products, and lumber/wood products. Most of these industry sectors experiencing declining gross state product comprise a significant demand for freight truck services. However, many other state industry sectors are experiencing substantial growth including agriculture, retail trade, real estate, health and financial services and trucking/warehousing services. These changes reflect the evolving

economic activities within and across the state and the forces contributing to the demand for freight services.

**Table 2: Gross State Product, by Industry**

Industry	1997	1998	1999	2000	2001	percent Change 1997-2001
Private industries	25,308	26,774	30,025	31,882	31,710	25.30 percent
Agriculture, forestry, and fishing	1,621	1,800	1,898	1,880	2,143	32.20 percent
Farms	1,309	1,420	1,496	1,454	1,691	29.18 percent
Ag. services, forestry, and fishing	313	380	402	426	452	44.41 percent
Mining	186	197	197	163	156	-16.13 percent
Metal mining	109	137	132	103	84	-22.94 percent
Coal mining	0	0	0	0	0	0.00 percent
Oil and gas extraction	2	2	2	2	2	-9.21 percent
Nonmetallic minerals, except fuels	76	59	63	57	69	34.36 percent
Construction	1,924	2,011	2,237	2,390	2,585	10.35 percent
Manufacturing	5,954	5,966	7,707	8,156	6,570	-0.98 percent
Durable goods	4,307	4,328	5,095	5,615	4,265	-38.18 percent
Lumber and wood products	833	708	915	634	515	22.50 percent
Furniture and fixtures	40	47	53	51	49	10.34 percent
Stone, clay, and glass products	58	47	68	52	64	50.00 percent
Primary metal industries	12	13	16	19	18	1.39 percent
Fabricated metal products	144	141	135	148	146	26.56 percent
Industrial machinery and equipment	930	1,089	1,076	1,233	1,177	-2.24 percent
Electronic and other electric equipment \1	2,097	2,046	2,589	3,199	2,050	51.52 percent
Motor vehicles and equipment	66	77	97	111	100	3.33 percent
Other transportation equipment	60	59	58	76	62	47.83 percent
Instruments and related products \1	23	35	35	34	34	11.11 percent
Miscellaneous manufacturing	45	65	52	58	50	39.89 percent
Non-durable goods	1,647	1,638	2,612	2,541	2,304	-10.85 percent
Food and kindred products	949	884	979	893	846	0.00 percent
Tobacco products	0	0	0	0	0	0.00 percent
Textile mill products	3	4	5	4	3	0.00 percent

**Table 2: Gross State Product, by Industry**

Apparel and other textile products	10	9	9	9	8	-20.00 percent
Paper and allied products	194	219	227	235	219	12.89 percent
Printing and publishing	177	179	212	205	211	19.21 percent
Chemicals and allied products	264	295	1,129	1,125	957	262.50 percent
Petroleum and coal products	3	3	3	7	5	66.67 percent
Rubber and misc. plastics products	40	40	45	57	48	20.00 percent
Leather and leather products	7	6	5	6	5	-28.57 percent
Transportation and public utilities	2,391	2,548	2,659	2,781	2,919	22.08 percent
Transportation	962	1,033	1,072	1,100	1,112	15.59 percent
Railroad transportation	224	207	207	216	221	-1.34 percent
Local and interurban passenger transit	27	31	31	34	37	37.04 percent
Trucking and warehousing	497	567	598	603	625	25.75 percent
Water transportation	7	7	8	11	12	71.43 percent
Transportation by air	140	152	160	162	138	-1.43 percent
Pipelines, except natural gas	20	21	21	20	21	5.00 percent
Transportation services	48	47	48	54	58	20.83 percent
Communications	450	545	601	675	746	65.78 percent
Electric, gas, and sanitary services	980	970	986	1,006	1,061	8.27 percent
Wholesale trade	1,888	1,996	2,158	2,320	2,312	22.46 percent
Retail trade	2,979	3,194	3,387	3,609	3,877	30.14 percent
Finance, insurance, and real estate	3,557	3,854	4,092	4,400	4,515	26.93 percent
Depository institutions \2	627	660	685	719	661	5.42 percent
Nondepository institutions \2	105	119	111	127	160	52.38 percent
Security and commodity brokers	86	113	101	128	120	39.53 percent
Insurance carriers	265	288	295	334	333	25.66 percent
Insurance agents, brokers, and services	159	176	190	192	201	26.42 percent
Real estate	2,311	2,476	2,682	2,865	2,986	29.21 percent
						<b>percent</b>
						<b>Change</b>
						<b>1997-2001</b>
						1000.00
Holding and other investment offices	5	22	28	36	55	percent
Services	4,807	5,209	5,690	6,182	6,635	38.03 percent

**Table 2: Gross State Product, by Industry**

Hotels and other lodging places	213	219	235	250	254	percent 19.25
Personal services	161	179	189	190	203	percent 26.09
Business services \3	710	776	943	1,051	1,114	percent 56.90
Auto repair, services, and parking	292	331	392	412	437	percent 49.66
Miscellaneous repair services	87	96	96	114	118	percent 35.63
Motion pictures	27	33	30	28	32	percent 18.52
Amusement and recreation services	184	178	200	219	234	percent 27.17
Health services	1,501	1,616	1,707	1,861	2,036	percent 35.64
Legal services	200	214	229	247	266	percent 33.00
Educational services	116	125	136	150	167	percent 43.97
Social services	183	212	225	248	275	percent 50.27
Membership organizations	143	154	167	179	149	percent 4.20
Other services \3	959	1,039	1,109	1,198	1,320	percent 37.64
Private households	31	36	33	36	31	percent 0.00
Government	4,080	4,266	4,559	4,873	5,195	percent 27.33
Federal, civilian	831	840	870	938	958	percent 15.28
Federal military	343	359	374	388	407	percent 18.66
State and local	2,906	3,067	3,315	3,547	3,830	percent 31.80
Electronic equip. and instr. \4	2,121	2,081	2,624	3,233	2,084	percent -1.74
Depository and nondepository institutions \5	732	780	796	846	821	percent 12.16
Business serv. and other serv. \6	1,669	1,815	2,051	2,249	2,433	percent 45.78
<b>Total Gross State Product</b>	<b>29,388</b>	<b>31,041</b>	<b>34,584</b>	<b>36,755</b>	<b>36,905</b>	<b>25.58</b> <b>percent</b>

Source: Bureau of Economic Analysis

**Figure 3. Idaho State Industry Sectors Experiencing GSP Growth and Decline**

**GDP Growth**

- ↑ Agriculture
- ↑ Retail Trade
- ↑ Real Estate
- ↑ Health Services
- ↑ Transportation and Warehousing



**GDP Decline**

- ↓ Manufacturing
- ↓ Durable Goods
- ↓ Electronic equipment
- ↓ Food and Kindred Products
- ↓ Lumber / Wood Products

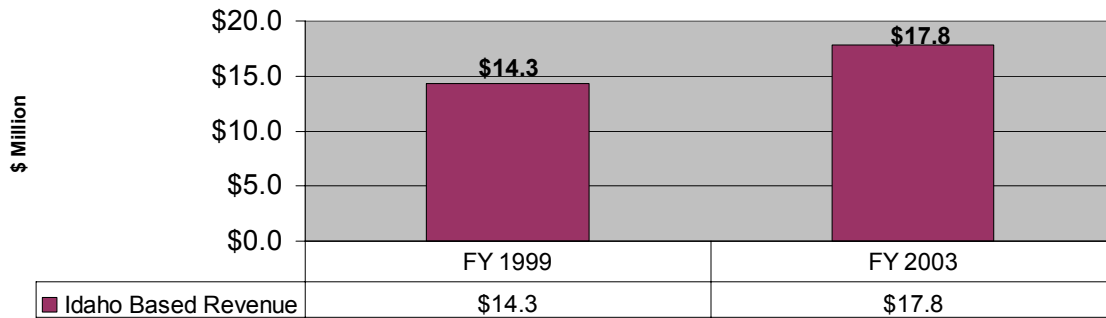
**IDAHO BASED TRUCKERS**

Focusing more closely at the registration revenues collected from Idaho based firms reveals a significant increase between fiscal years 1999 and 2003, both in absolute value and proportion of Idaho based registration revenues to non-Idaho based revenue.

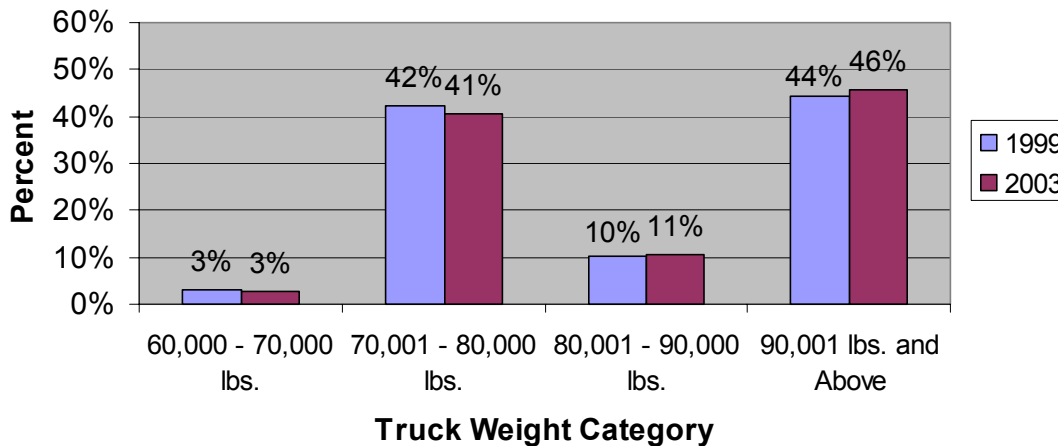
Registration revenues from all commercial Idaho based firms increased 24 percent within this time period from \$14.3 million in fiscal year 1999 to \$17.8 million in fiscal year 2003, as illustrated in Fig. 3. While the collection of revenues increased, the distribution of from whom those revenues are collected remained relatively constant among different weight categories, as illustrated in Fig. 4. Commercial vehicles over 90,000 GVW represent the category from which the largest revenue amounts are collected, 46 percent in 2003, up from 44 percent in 1999. Seventy to 80,000 GVW is the second largest category, 42 percent and 41 percent for both time periods, respectively. But while the distribution of revenues collected remained relatively constant between the two time periods, there were more revenues collected in 2003 and all weight categories did experience increases in absolute values relative to 1999. The weight category with the

largest increase in registration revenues was the 90,001 GVW vehicles and above at 33.1 percent followed by the 80,001 to 90,000 GVW vehicles which experienced a 17.5 percent increase, as illustrated in Fig. 5. The weight category with the smallest increase in registration revenues was the 70,001 to 80,000 vehicle at 5.7 percent.

**Figure 4. Idaho Based Truck Registration Revenues, Above 60,000 lb. Vehicles**



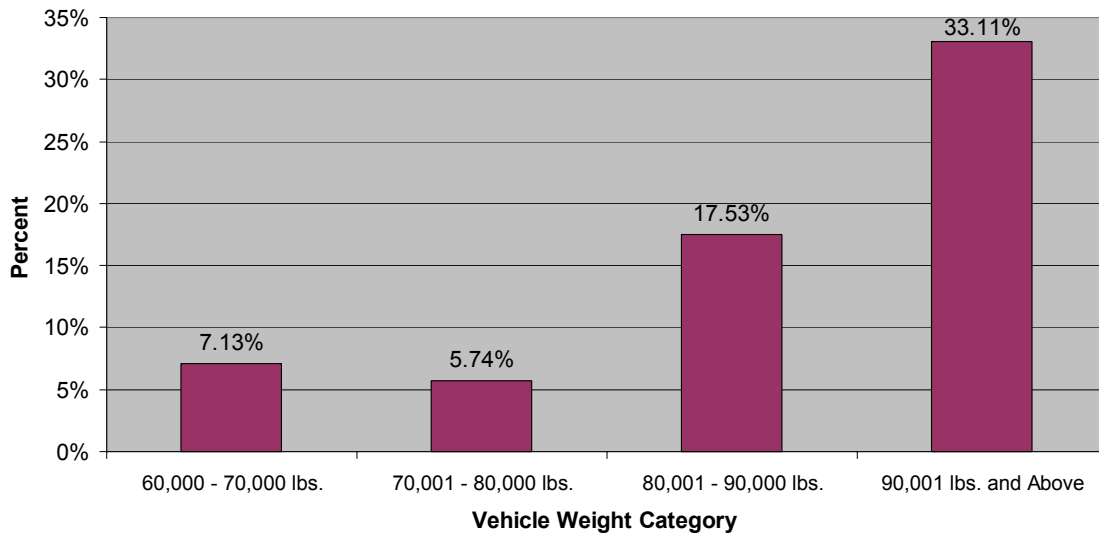
**Figure 5. Distribution of Idaho Based Revenue, by Weight Category**





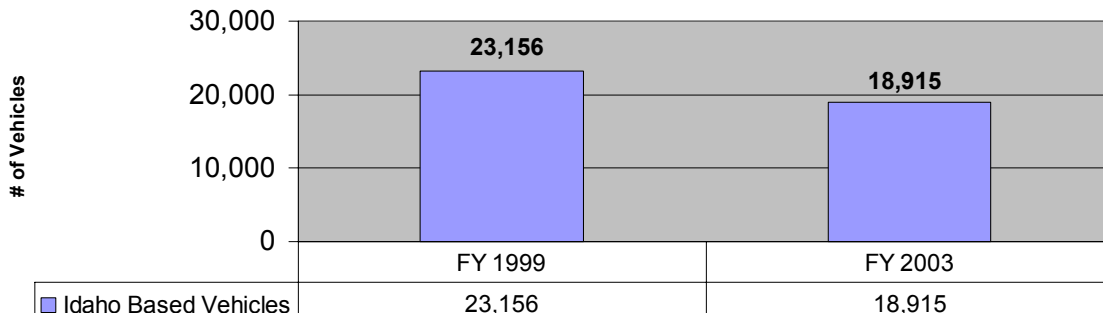
It is also interesting that while the registration revenues collected from Idaho-based firms was increasing between 1999 and 2003 (24 percent), the number of vehicles registered by Idaho based firms declined significantly by nearly 18.3 percent. In fiscal year 1999 there were 23,156 Idaho based vehicles of 60,000 lbs or greater registered weight, dropping to 18,915 vehicles in fiscal year 2003, as highlighted in Figure 6.

**Figure 6. Idaho Based Revenue Increase, by Weight Category**



These results suggest that the registration fee burden to Idaho based firms is increased significantly, especially for those firms with vehicles registered above 70,001 GVW. The number of vehicles registered in this category decreased substantially between these two time periods, as depicted in Fig. 7. This weight category represents both the largest

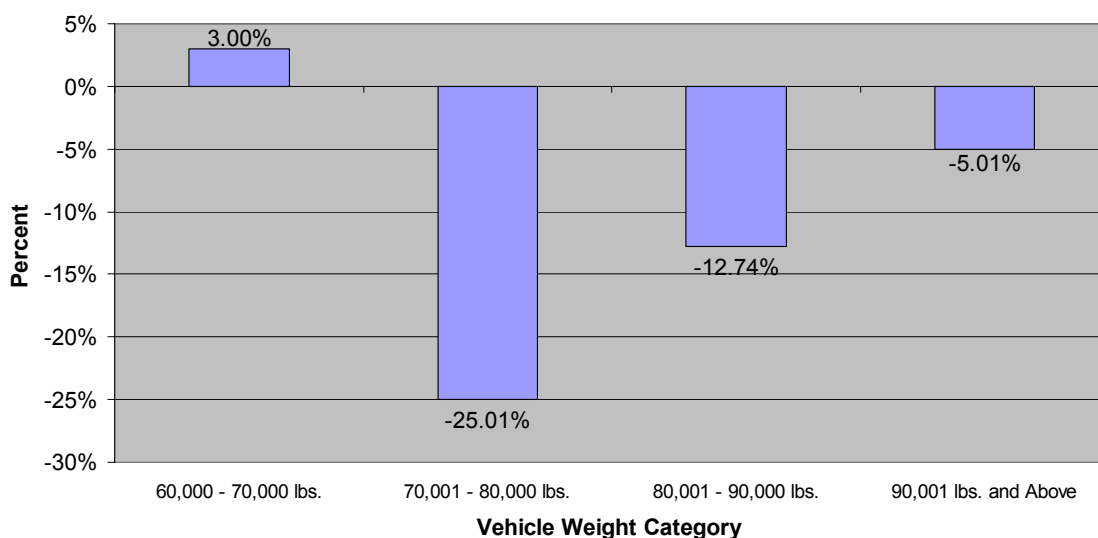
**Figure 7. Number of Registered Idaho Based Vehicles, Above 60,000 lbs.**



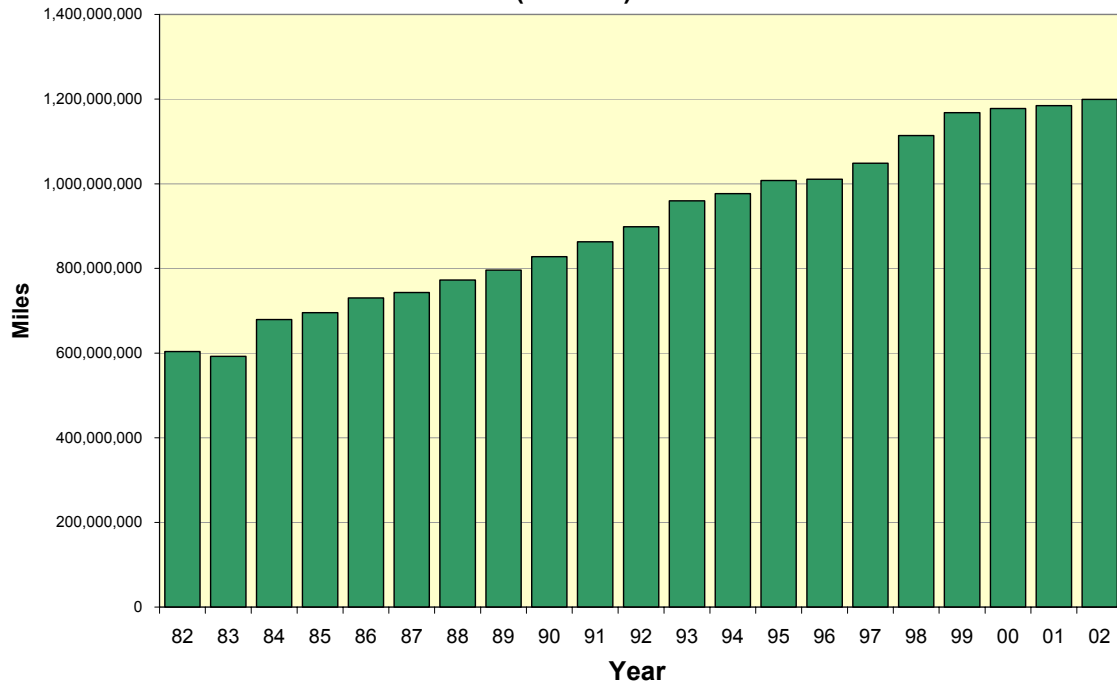
increase in registration revenues and the category with the largest decline in number of registered vehicles. In addition, the growth in vehicle miles traveled by commercial freight traffic continues, as illustrated in Fig. 8.

While the growth in Annual Commercial Vehicle Miles Traveled (AVMT) on the Idaho State Highway System over the last two or three years was not as large as that experienced between 1980 and the late 1990s, the continued growth is indicative of the continued utilization of the state’s highway infrastructure by freight truck and production of the associated economic activity. Hence, there are 18.3 percent fewer Idaho based vehicles registered within the state of Idaho, the state is collecting 27.6 percent more revenue from these Idaho based firms and the ACVMT continues to increase, suggesting that trucking firms are registering fewer vehicles but utilizing those which are registered to a greater degree by accumulating more annual mileage. This indicates that truck and freight forwarding firms are making rational economic decisions that improve the operating efficiency of their operations while adjusting to the evolving economic and state policy situation.

**Figure 8. Decrease in Idaho Registered Vehicles, by Weight Category**



**Figure 9. Annual Commercial Vehicle Miles Traveled on Idaho State Highway System (ACVMT)**



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## ECONOMIC AND ADMINISTRATIVE IMPACTS

The changes to the Idaho commercial vehicle registration system not only impacted state revenues, but also the operating cost of firms competing for freight shipments and trucking services. The legislative change away from the weight-distance tax system to a five tier mileage registration system can be expected to impact different types of truck operations by differing degrees, depending on many factors including Idaho apportionment, annual mileage, size of operation and types of shipments.

Close inspection of the cost per ton mile impacts between the old and new registration system reveals the incentive for truck operators to lower their per unit registration cost by spreading that cost across additional miles and the impact of the new system if they are not able to accomplish that goal. Comparing two different weight vehicles across two different mileage categories, as depicted in Table 3, the registration cost per ton mile increases considerably at the low end of the mileage spectrum, 120 percent for 80,000 GVW vehicles and 135 percent for 106,000 GVW vehicles. However, if those same weight vehicles are driven 120,000 miles per year, the registration cost per ton mile decreases by 37 percent for the 80,000 GVW vehicle and 33 percent for the 106,000 GVW vehicles. Thus, the incentive exists for truck owners and operators to register fewer vehicles and accumulate more annual miles per year on the remaining registered vehicles. And, this relationship exists for both weight categories, although slightly more pronounced at the 80,000 GVW category. It is interesting that the cost per ton mile comparison between the old and new registration system is relatively consistent across weight categories for comparable mileages. An 80,000 GVW vehicle under the old registration system experiences .0022 cents/ton-mile at the 12,000 mileage category while the 106,000 GVW vehicle experience .0023 cents/ton-mile. Under the new registration system these same two vehicle weight categories experience .0048 cents/ton-mile and .0054 cents/ton-mile, respectively at 12,000 annual miles.

**Table 3. Cost Per Ton Mile for Old and New Registration System**

	80,000 GVW		106,000 GVW	
	12,000 Miles <sup>1</sup> (cents/tonmile)	120,000 Miles (cents/tonmile)	12,000 Miles (cents/tonmile)	120,000 Miles (cents/tonmile)
Old System	.0022	.0020	.0023	.0018
New System	.0048	.0013	.0054	.0012
Percent Change	+ 120 percent	- 37 percent	+ 135 percent	- 33 percent

Evaluating the economic impact to truckers from a slightly different perspective confirms these general relationships exist, although to a different degree. The registration fee as a percent of total cost of operations ranged from 4.8 percent to 6.0 percent for an 80,000 GVW vehicle traveling either 12,000 or 120,000 miles respectively under the old system. Under the new registration system, registration fees range from 11.5 percent and 3.52 percent for the same 80,000 GVW vehicle traveling 12,000 or 120,000 annual miles respectively, as depicted in Table 4. This represents an increase of 139 percent for the lower mileage category (12,000 miles) and a decrease of 41 percent at the higher mileage category (120,000 miles). A very similar relationship exists for heavier vehicles. Vehicles weighing 106,000 GVW and traveling 12,000 miles increased from 4.85 percent under the old registration system to 12.20 percent under the new system, an increase of 151 percent. Vehicles weighing 106,000 GVW and traveling 120,000 annual miles decreased from 6.94 percent under the old registration system to 3.5 percent with the new registration system, a decrease of 50 percent. By adding fuel tax cost to registration fees and evaluating the composite costs as a percent of total cost of operation, the directional changes are the same but the proportional magnitudes are considerable smaller, as provided in Table 5.

<sup>1</sup> The .0022 cost per ton-mile should not be confused with the earlier limited rate charged with the weight mile tax.

**Table 4. Registration Fees Only as a Percent of Total Cost of Operation**

	80,000 GVW		106,000 GVW	
	12,000 Miles ( percent)	120,000 Miles ( percent)	12,000 Miles ( percent)	120,000 Miles ( percent)
Old System	4.81	6.01	4.85	6.94
New System	11.50	3.52	12.20	3.50
Percent Change	+ 139 percent	- 41 percent	+ 151 percent	- 50 percent

Incorporating both fuel tax and registration fees as a percent of total cost of operation increases the absolute percentage amount, but the relative change between the old and new registration system is much smaller. Now vehicles registered at 80,000 GVW and traveling 12,000 will experience an increase of only 22 percent moving from the old to new registration system and those traveling 120,000 miles will experience a decrease of only 1 percent. Those vehicles registered at 106,000 GVW and traveling 12,000 miles will experience a 25 percent increase in costs as a percent of total cost of operation while those traveling 120,000 miles will experience a one percent decline.

**Table 5. Registration Fees and Gas Tax as a Percent of Total Cost of Operation**

	80,000 GVW		106,000 GVW	
	12,000 Miles ( percent)	120,000 Miles ( percent)	12,000 Miles ( percent)	120,000 Miles ( percent)
Old System	29.81	31.01	29.85	31.94
New System	36.50	28.52	37.20	28.50
Percent Change	+ 22 percent	- 1 percent	+ 25 percent	- 1 percent

Thus, truck operators at the low end of the mileage spectrum bear the majority impact from the registration system change while those at the high end of the mileage spectrum receive a benefit. At some point along this continuum and between the two mileage

extremes, there exists a break-even point where truck owners/operators are neither adversely nor advantageously impacted. This point occurs at around 75,000 miles for 80,000 GVW vehicles, as provided in Table 5. Vehicles of this weight category which travel fewer annual miles will experience an increased registration cost per mile and those above 75,000 miles a decrease registration cost per mile. At 12,000 miles per year the cost per mile goes from 4.49 cents per mile to 9.17 cents per mile, an increase of 104 percent, while at 120,000 miles per year the registration cost per mile decreased from 4.49 cents per mile to 2.80 cents per mile. But at 75,000 miles per year there is almost no change in registration cost per mile from the new system.

One characteristic of changing from a continuous weight-distance registration system to the five tier system currently in place is the inconsistent disparities in cost that occur throughout the mileage categories.

**Table 6. Registration Fee Cost Per Mile, by Mileage Category**

	80,000 GVW		
	12,000 Miles	75,000 Miles	120,000 Miles
Old System	4.49	4.49	4.49
New System	9.17	4.50	2.80
Percent Change	+ 104 percent	0 percent	- 38 percent

An example is presented in Table 7 where mileage categories were selected randomly to illustrate this phenomenon. The registration cost per mile declines from 19.2 cents per mile at 2,500 annual miles to 6.4 cents per mile at 7,500 miles. But one mile above the 7,500 mile category and the truck owner / operator's cost jumps to 14.7 cents per mile. These same breaks occur at each of the five mileage tiers.

**Table 7. Registration Fee Cost Per Mile, by Miles Traveled  
(80,000 GVW)**

<b>Miles</b>	<b>Rate / Mile</b>
<i>2,500</i>	19.2 cents
<i>7,500</i>	6.4 cents
<i>7,501</i>	14.7 cents
<i>50,000</i>	4.6 cents
<i>50,001</i>	6.7 cents

The economic impact of the new registration system is also of concern when it comes to potential impacts on competition. This competition can take the form of competition among modes of transportation or competition among states or other producing areas for industries in the state of Idaho. Preliminary analyses done by Ying Hu, in a thesis project under the direction of Dr. James Jones, provide a look at these issues, using Idaho wheat shipments as the case study.

The increased registration fees under the new system were incorporated into the cost of truck transportation. These costs were assumed to be reflected in increased transportation rates paid by shippers in the industry. Changes in these rates were tested to determine any change in wheat industry competitiveness, prices and modal shipments. A spatial equilibrium model used six districts of Idaho, in wheat production regions, to test the impact.

There was not any change in modal competition with barge or rail, due probably to the small size of the increased cost and therefore rates. The truck industry moved the same amounts in the same directions as before the rate change. Similarly, the Idaho wheat industry did not suffer any decrease in demand or decreased price as a result of the changes. The author did caution that the analysis results could have arisen due to model imperfections and insensitivity as well as the small magnitude of the rate changes.



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## REVENUE NEUTRALITY

Designing a new registration and tax system requires an understanding of the underlying goals of that system. Alternative goals, depending on the perspective of the viewer, could be equity amongst payers, user fees that reflect consumption of the infrastructure or value of the highway to the user, or revenue for provision of the infrastructure and the administration necessary to produce that system.

During the period of interaction with the American Trucking Association and the courts, an accepted revenue goal for any new registration system was negotiated by participants. This figure was determined to be \$41.3 million and reflected both the actual revenue produced in FY 1997 and the revenue from the existing system in expected in FY 2001. As indicated earlier in this report, the revenue in FY 1999 and FY 2000 was \$43.5 million and \$43.6 million, so the negotiated goal was, in fact, \$2.25 million less than the average realized revenue in the preceding two years. Reasons for the acceptance of the revenue neutrality goal of \$41.3 are not available to this research effort because of the confidentiality of the negotiations.

The specific revenue neutrality goal was specified in the *Settlement Agreement* of April 2000:

***The \$41.3 million equals the approximate amount of use fee revenue anticipated to be collected by the State in Fiscal Year 2001.***

The information provided in Table 7 allows a comparison of the actual revenue generated to the goal of revenue neutrality. The first column identifies the revenue neutrality goal of \$41.3 million; the next column indicates the actual revenue received by the state of Idaho for the three fiscal years under the new system, followed by a column depicting the resulting revenue shortfall or surplus each year. The last two columns present the same analysis if the revenue neutrality goal is increased by the Consumer Price Index (CPI) over the last two years to reflect the amount necessary to have the same purchasing power as the original revenue neutrality goal.

**Table 8. Registration Revenue Analysis and Comparison to Revenue Neutrality**

Fiscal Year	Revenue Neutral (\$ million)	Actual Revenue (\$ million)	Revenue Shortfall (\$ million)	CPI Revenue Growth (\$ million)	Revenue Shortfall to CPI (\$ million)
2001	41.3	64.5	23.2 above	41.3	23.2 above
2002	41.3	46.3	5.0 above	42.0	4.3 above
2003	41.3	38.8	2.5 below	42.9	4.1 below

Noticeable, first, is the impact of the prepayment of the registrations fees at the time of registration, rather than at the end of the year as had been done before. This prepayment, when combined with the last of the payments made at the end of the year by the trucking firms, generated an accumulated amount over the revenue neutrality goal of \$25.7 million.

The real impact on the trucking firm is that, under this new system, they had to prepay for the coming year instead of the paying for past road usage. This causes lost of return on that capital over the year, or, if the amount was borrowed, an effective increase in interest costs for at least half of that year (payments can be made on a quarterly basis). Thus, if the revenue neutral amount, \$41.3 million, was paid, with an interest rate assumed to be 8 percent for this theoretical example, interest or forgone return would amount to about \$1.6 million per year for the trucking firms from the prepayment decision in the new registration system. Since there are approximately 59,000 vehicles registered with Idaho as their base state, the impact of the prepayment is about \$27 per vehicle, on average, in the state. Vehicles registered at higher mileage or weights would be above this average and the lighter, lower mileage would be below.

A second issue is the evident shortfall of \$2.5 million in FY 2003. Although there is only one year of data where the past and prepayments are not combined, FY 2003 does reveal that the goal of revenue neutrality was not reached.

Revenue neutrality is related to the revenue needed to provide infrastructure for the trucking and automobile sectors and the user payments required to provide those revenue needs. Given that the revenue is used to purchase and construct facilities, adjusting the revenue neutrality goal by the CPI for the two years will reflect the income needed to maintain the real purchasing power of the revenue neutrality goal. The adjusted goal becomes \$42.9 million and the associated revenue shortfall becomes \$4.1 million for FY 2003.

It should be noted that the above assumptions are quite conservative since the revenue neutrality goal is only inflated for two years. If the goal from FY 1997, the year that this actual amount was generated, was to be inflated, the revenue neutral goal would be increased to slightly over \$47 million with the shortfall then appearing to be around \$8 million.

Use of the CPI reflects the increasing real dollar value of construction and maintenance costs in providing like amounts and quality of infrastructure. Looking to the use or consumption of those roadways it is reasonable to also consider the increase in annual vehicle miles traveled, as presented earlier in this report. Given a desire is to provide infrastructure for the increasing use of the highways, inflating the revenue neutrality goal from FY 1997 to reflect that use and accompanying needs for investment, would require the goal to increase to around \$56 million, generating an annual shortfall of \$17 million in FY 2003. No analysis was made of the potential impact of utilizing both AVMT and CPI to reflect increasing demand for infrastructure and the increasing costs of providing that desired capacity.

In summary, it is evident that the policy change of collecting the fees at the beginning of the registration period rather than at the end had a positive, though short term, impact on revenue collected. It also appears that a \$2.5 to \$4.1 million shortfall may be occurring. Finally, the existing data, consisting of only one year of single payment results, do not allow for definitive answers about the existence of any revenue neutrality goal shortfall nor the magnitude of that shortfall.

## **RELATED ISSUES**

### **ENFORCEMENT/EVASION SITUATION**

The current system does have the result of encouraging potential under reporting of activity, particularly for annual registered mileage. As indicated in Table 7, a vehicle that is registered and travels only at the lower bound of a higher weight category pays a substantial penalty in terms of rate per mile. When a trucker registered at 7,500 miles per year, compared to registering at the next highest category of 7,501 miles, the cost per mile to the trucker increases from 6.4 cents to 14.7 cents per mile, or 121 percent. The relationship is also apparent when comparing 50,000 annual miles versus 50,001 miles, where the cost to the trucker increases from 4.6 cents to 6.7 cents per mile, or 46 percent, at the higher level of registration. Such significant cost inequalities mean that, unless the trucker will incur mileage far into the next category, the tendency will be to under report that mileage when registering.

This result from the current registration system, when compared to the per mile weight and distance tax system, is further conditioned by the fact that the general level of enforcement in Idaho may be down. Out of state trucking firms are no long audited by the state of Idaho, as they had been previously under the weight distance system. Fewer auditing positions currently exist in the Idaho Transportation Department than previously, possibly increasing the time between audits for the individual trucking firms. Each member jurisdiction of IRP is required to audit those carriers in that jurisdiction on behalf of the other member jurisdictions.

The recent combination of the registration auditing function with the tax function for the state may make it so that fewer auditors can do more audits, thus conditioning the loss of the ITD auditing positions. These are positive implications for increased efficiency for both the ITD and the taxpayer. Still, the number of auditors has to be of concern for the goal of compliance and minimizing evasion.

Tax avoidance, which is simply a legal reaction to the new laws, may be occurring as well. Though there may be implications for achieving the goal of revenue neutrality, it can be argued that trucking firms are simply making good, efficient business decisions as they watch carefully the mileage of their trucks, watch which trucks they register and evaluate whether the use of temporary permits might be cost saving. Again, the earlier weight and distance rate system did not have the lumps in mileage costs that might cause these reactions.

It should be noted that it appears overall the administration expenses by the ITD and audit expenses incurred by the taxpayer, the trucking firm, may have decreased over time. Both of these changes indicate an increase in efficiency in performing the regulatory and revenue collection function. The full experience in this area is not available because changes in the auditing function and administration have only recently been implemented.

### **TEMPORARY TRIP PERMITS**

An alternative that has been available to the trucking firms is to license any or all of their vehicles under the temporary trip permit system. The legislative action related to the weight and distance tax and the new registration system also resulted in some changes that made the use of these permits useful and easier to the truck owner, whether a trucking firm or an individual proprietor.

Under House Bill 270 the trip permit schedules length of time was increased from 96 hours per permit to 120 hours (+25 percent increase). The cost of these permits increased slightly, from \$25 and \$30 (+20 percent) for a single truck and from \$50 to \$60 (+20 percent) for a combination vehicle.

Trucking firms went into this system slowly, with trip permits being 37,700 in FY 2001, 30,000 in FY 2002 and 36,100 estimated by the ITD in FY 2003. This last year saw a major resurgence, a 20 percent increase in usage of temporary trip permits. While still below the average number in the late 1990s it appears that the use of the temporary

permit has found favor with the trucking firms. This could be partially the reason for the decrease in registrations in the state of Idaho since trucks can be registered and used strategically when they are needed to respond to seasonal demand by industry sectors in Idaho or outside of Idaho. Such usage appears an efficient and low cost way for the seasonal needs of industry and the varying economic conditions in the Idaho economy to be served without creating excess capacity in the trucking sector.

## **POTENTIAL RESTRUCTURING**

Inconsistencies or lost opportunities were identified in the course of this study, some relative to the process of collecting the revenue and some relative to the registration structure itself. These are noted below.

### *Data Compilation*

Determining the full impact and equity of the new registration system on revenue and the Idaho based and non-Idaho based trucking firm requires information that is not fully available. Current information is generated in various shapes and locations in the process of registering, auditing and regulating the trucking industry but it appears there is no data warehouse that is specifically constructed to compile and provide for those needs. The current data system and the personnel producing those analyses are very productive and responsive to public need, but simply do not have all the required data.

The varying revenue paid by Idaho full fee truckers versus Idaho International Registration Program (IRP) versus out-of-state (foreign) truckers would be a rich source of understanding on “who in” and “how” the different sectors are impacted. Current reporting requirements do produce some elements of the information (actual mileage is not even completely retained and compiled) but the full data set has not been constructed nor have new ways of generating needed data been investigated or at least put in near term ITD plans.

### *Registration Structure*

A point of potential inequity occurring as a result of the current implementation of the registration system has implications for the full fee paying Idaho trucker versus the IRP paying trucker, even if based in Idaho. Currently Idaho based trucks operating under the IRP are registered and pay fees based on the total miles in the year that vehicle travels, and then the firm only pays for the apportionment of miles driven in Idaho the previous year. Thus, a firm who travels 10,000 miles (100 percent apportioned in Idaho) in the state, and registers at that mileage, will pay a substantially higher per mile cost than will the firm that travels only 10,000 miles (10 percent apportioned in Idaho) in the state but is allowed to pay at the rate per mile of 100,000 miles, if that was the total mileage for the year in all states. Obviously the road wear and consumption is not decreased for Idaho just because a firm had a substantial amount of miles out of the state. (For a full quantitative description, see Jones, et al.)

This inequity is identifiable but may be counterbalanced somewhat by the gain in regulatory efficiency caused by the fact that under the IRP all states handle the fee payment in the same way. This allows for efficiency in collecting all fees, though the disparate impact on the lower mileage in state truck remains.

It is also apparent from several of the analyses above that low mileage (high apportionment) firms, irrespective of the IRP imbalance, absorb significant impacts from the new registration structure, as contrasted to the previous weight and distance tax system. The previous analyses in this report used several approaches to evaluate the magnitude of the cost per ton mile disparity between the high mileage, low apportionment versus low mileage, high apportionment firms. (It should be noted that, if as sometimes suggested, the lower mileage, high apportionment firms operate on rural, less well built and lower condition roads, the per mile impact on the roads might be proportionately higher than the mileage on the better conditioned roads.)

This disparity is of concern because these lower annual mileage (higher apportionment) firms may be providing a specific service, namely local trucks serving the peak and

seasonal needs of various resource based Idaho industries. Movement to a per mile rate would offer rates more directly related to consumer demand and road utilization while providing equity in weight and distance usage.



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## RECOMMENDATIONS

This study compared the impacts of the new registration system on revenue to the state of Idaho, on intra- versus inter-state trucking, and the equity of treatment under the new system for differing weight and mileage experienced by the trucking firms. The following recommendations are the result of those analyses.

**1. Existing and increased data should be compiled into a data warehouse.**

Continued evaluation and modification of the registration system requires full and complete information, some of which is only partially available.

**2. The cost and benefits of increased enforcement should be evaluated relative to evasion of user fees.**

The current system can be encouraging some evasion by trucking firms. The cost and benefits of increasing enforcement efforts should be determined and adjustments made.

**3. The existing registration system should be examined relative to revenue generation and efficiency.**

It appears, though data are limited to one complete year, a \$2.5 -\$4.1 million shortfall below revenue neutrality may be occurring. A system restructuring towards a weight and distance system may be found appropriate.

**4. The existing registration system should be examined relative to equity between high and low apportionment firms.**

The existing rate structure, since it is no longer a direct distance fee, causes the lower annual mileage (higher apportionment) firms to pay more per mile than the higher annual mileage (lower apportionment) firms,

overall and within each tier. A weight and distance system may eliminate this disparity.

**5. The use of temporary permits should be examined relative to revenue and use impacts.**

Temporary permits appear to be a good business tool, allowing the trucking firms to respond to seasonal needs by Idaho industries. However its usage may have implications for evasion and revenue neutrality.

**6. A comprehensive evaluation of surrounding states as to fee structure and implementation and impact on competition should be undertaken.**

The trucking industry and production industries in Idaho compete directly with the surrounding states. The competitive situation caused by differing registration rate structures should be determined.

**7. Consideration should be given to the relationship between weight per axle, and weight per truck configuration relative to the rate charged per weight category.**

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