

Research Report
KTC -12-18/SPR434-12-1F

Motor Carrier Tax Consolidation Study

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Motor Carrier Tax Consolidation Study

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16. Abstract This study analyzed the tax and fee structure for Kentucky motor carriers and details a possible policy scenario for eliminating the weight-distance tax. The report starts out analyzing detailed revenue and rate information for the motor fuel tax, motor fuel surtax, weight distance tax, IRP registration fees, and intrastate registration fees. Consolidation policies in Idaho and Ohio were reviewed, as well as a previous consolidation proposal in Kentucky. A new consolidation framework was developed, where IRP and intrastate plate fees were increased by 129 percent and the weight-distance tax was eliminated. Projections for weight-distance tax and IRP fees (both current and proposed) were compared to assess the revenue impact on the Road Fund. In addition, the tax/fee burden for motor carriers was assessed to see whether the proposed changes would help or hurt firms of various sizes and operational tendencies. Interstate carriers that log a high percentage of miles in Kentucky, or interstate carriers that run a low number of overall miles per vehicle, would generally see an increased tax/fee burden. Interstate carriers that log a low percentage of miles on Kentucky roads or a high number of overall miles per vehicle would generally see a diminished tax/fee burden. Most intrastate carriers would have to pay more under the proposed policy alternative.			
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EXECUTIVE SUMMARY

Kentucky currently has a three-tiered tax structure for motor carriers based in the state: a fuel tax, fuel surtax, and weight-distance tax. Operators of all commercial vehicles pay a fuel tax at the pump on either gasoline or what is classified as a special fuel (e.g. diesel or biodiesel). Companies with vehicles over 26,000 lbs. complete quarterly tax returns to determine how much fuel surtax is owed after deducting credits for fuel purchased in the state. Interstate carriers file International Fuel Tax Agreement (IFTA) returns, and intrastate carriers file Kentucky Intrastate Tax (KIT) returns for intrastate companies. In addition to the fuel consumption taxes paid, companies with vehicles licensed for 60,000 lbs. or more file a separate tax return (KYU or weight-distance tax), which assesses 2.85 cents for each mile operated on Kentucky public highways by those specific vehicles. All interstate and intrastate carriers must also purchase license plates through Kentucky's International Registration Plan (IRP) or intrastate plate programs. Due to the complexities involved with these computations as well as questions concerning industry compliance, there is considerable concern for the accuracy of the filings and whether tax dollars are collected equitably.

Tax compliance under current law requires a substantial investment of time and money for motor carriers, the Kentucky Transportation Cabinet (KYTC) and the Kentucky Department of Revenue. This study is an examination of how Kentucky could eliminate the weight-distance tax, and replace the lost revenue by increasing the cost of the International Registration Plan (IRP) and intrastate registration fees associated with the license plates on trucks currently required to pay the weight-distance tax.

Weight-Distance Tax

The Kentucky Weight-Distance tax is a tax designed to generate revenue from heavy truck carriers whose vehicles create greater wear on public roads. All trucks with a combined licensed weight of 60,000 lbs. and up are subjected to this tax for every mile traveled within the state. KRS 138.660 states "every motor carrier shall pay for every motor vehicle operated upon the public highways of this state with a combined licensed weight in excess of fifty-nine thousand nine hundred and ninety-nine (59,999) pounds a weight distance tax computed at the rate of two and eighty-five hundredths cents (\$0.0285) per mile." Revenues steadily increased from FY 1996 to FY 2007, growing from \$59.7 million to \$85.4 million. However, these revenues have not fully recovered from the economic collapse of 2008. Revenues fell slightly in 2008 before declining sharply from \$84.3 million to \$75.4 million in 2009. Weight-distance tax receipts declined further to roughly \$70.5 million in 2010 before recovering slightly at nearly \$74 million in 2011. FY 2012 revenue figures show the revenue inching up to \$75.1 million. The future of the weight-distance tax program revenue will be largely dependent on the performance of the state's trucking industry, as well as the U.S. trucking industry in general, given that motor carriers from all states are required to pay the tax if operating in Kentucky.

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Weight-Distance Tax, IRP Fees Projections

This study projected the weight distance tax and IRP registration fees from FY 2012-2020. The revenues are projected using simple regression-based forecasting models. It should be noted that all forecasting models contain basic assumptions which may or may not play out. National and state economic conditions will greatly affect the actual revenue each program generates. If any of the basic assumptions detailed in these models is violated, the actual revenues could differ significantly from those projected.

Table 1. Weight-Distance Tax and IRP Projections, FY 2012-2020 (Millions)

Fiscal Year	Weight-Distance	IRP
2012	78.4	59.2
2013	79.9	60.5
2014	81.4	61.9
2015	83.0	63.2
2016	84.6	64.6
2017	86.4	65.9
2018	88.2	67.3
2019	90.1	68.6
2020	92.1	69.9

IRP/Intrastate Plate Policy Change and Projections

The next part of the process was to project the magnitude of increase necessary for IRP and intrastate plate fees revenue to replace the KYU, or weight-distance tax. Several factors had to be taken into consideration, including: which vehicles were going to be impacted, how the IRP/intrastate funds would be allocated under the new policy, historical IRP revenue, historical intrastate revenue, and the total difference between current weight-distance tax revenue and the future projected revenue for both IRP and intrastate truck registration under the proposed policy. The current IRP and intrastate plate fees would need to be increased by 129 percent to make up for lost weight-distance tax revenue.

Table 2. IRP and Intrastate Licenses by Weight Class

Licensed Weight	Current	Proposed
62,000	\$1,007.00	\$2,306.03
73,280	\$1,280.00	\$2,931.20
80,000	\$1,410.00	\$3,229.80

The tax increase would only apply to trucks with licensed weights of 62,000 lbs., 73,280 lbs. and 80,000 lbs. In 2011, those trucks accounted for 92.16 percent of all trucks registered with Kentucky's IRP program. The county share, while staying relatively constant in terms of actual revenue and projected growth, would become a smaller share of the overall program

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revenue. If the recommended increase were adopted, the allocation rates would need to be changed by statute. The county share of IRP and intrastate revenue on the three classes of affected plates would fall from 30 percent to 13.1 percent. The county share for trucks licensed at lower weights will continue to be 30 percent.

Figure 1. Weight-Distance Tax Revenue vs. Increased Plate Fees Revenue (FY 1996-2020)

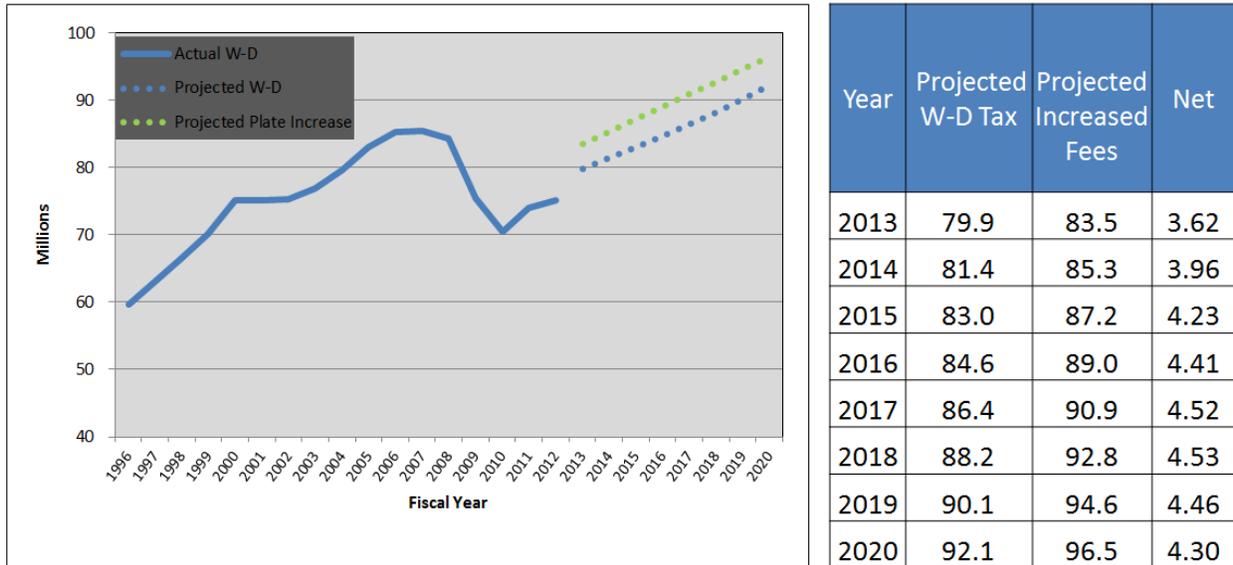


Figure 1 shows the projected revenues for the status quo policy (projected W-D Tax) and the policy alternative (Project Increased Fees). In order to determine whether the IRP and intrastate plate fee increases are sufficient to replace the lost revenue from the weight-distance tax, the status quo policy projection was subtracted from the alternative policy projection. The net difference reflects the estimated revenue difference for the two policies in terms of Road Fund revenue between FY 2013-2020. The plate increases were adjusted so the projections showed a slight net gain under the alternative policy in order to guard against unanticipated consequences, which could result in revenue losses. The policy change would increase IRP and intrastate plate revenue by more than \$83 million annually during the first fiscal year following implementation. The revenue tradeoff would net the state approximately \$4.25 million per year between FY 2013-2020, assuming the model assumptions hold and there are no other unintended or unanticipated consequences.

Policy Impact

Given revenue tradeoffs between the weight-distance tax and increased plate fees are roughly even, the other key policy question concerns the impact of the legislation. Motor carriers would not be affected uniformly by such measures, because the nature of individual carrier operations is different for each business. Depending on the number of affected vehicles a carrier registers, the number of miles logged by those vehicles, and the percentage of miles logged in Kentucky, some carriers would have lower tax/fee bills, while others would have higher tax/fee

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bills. In order to assess the impact on various carriers, information on IRP and intrastate carriers of various sizes and operating tendencies was gathered and analyzed. Current weight-distance tax bills were collected to assess whether the proposed change would be financially beneficial or detrimental for the typical carrier.

The policy change clearly creates winners and losers, but the patterns of impact suggest the following trends for interstate carriers: motor carriers with a high percentage of Kentucky miles, or that log a low number of miles per vehicle, will generally see an increased tax/fee burden, whereas motor carriers logging a low percentage of miles on Kentucky roads and a high number of miles per vehicle will generally see a diminished tax/fee burden. Carrier fleet size is not a significant predictor of the change. Almost uniformly, intrastate carriers will face a greater tax/fee burden under the proposed IRP increases than they currently do with the weight-distance tax. The burden for intrastate carriers appears to increase with fleet size. The impact is related to both plate apportionment and usage of the road. IRP carriers pay on average a 32 percent apportionment to Kentucky, meaning only 32 percent of the full plate cost is actually paid. Intrastate carriers must pay the entire cost of the plate, because all miles are logged in Kentucky. This is further complicated because intrastate carriers run lower mileage on the highway than most interstate carriers. An analysis of 753 intrastate carriers shows an increased tax burden on all but 28 of those carriers (assuming they have vehicles exclusively registered at 80,000 lbs.). This is due to the lofty number of miles a carrier would need to log in order to break even under the new IRP price structure. Each intrastate company truck would need to operate 63,856 miles per year for an intrastate carrier to break even under the new policy. The average intrastate truck logs 19,805 miles – well below the break-even point. Given the uniformity of impact, the proposed consolidation policy is unlikely to be popular with intrastate carriers.

The study demonstrates that it is possible to devise a revenue-neutral alternative to Kentucky's weight distance tax and replace it with registration fees for trucks 60,000 lbs. and above. KYTC and the motor carrier industry could both potentially benefit without any substantial impact on the state's Road Fund revenues. Other motorists would not see any detrimental effects as a result of the changed policy. Administrative costs for the Cabinet, as well as industry, would be reduced. Funds spent on mileage-tracking software, supporting documentation, return preparation, vehicle inventory maintenance, and audits related to weight-distance tax would be eliminated, although other mileage-based requirements would still exist (e.g. IFTA or KIT). KYTC would no longer have to process weight-distance tax returns, develop and manage information technology applications and databases related to the weight-distance tax, or deal with other associated administrative processes. The Kentucky State Police and Commercial Vehicle Enforcement would not have to contend with weight-distance tax screening and enforcement issues, allowing officials to focus on other registration, credentialing and safety violations. Fee-based programs may have lower evasion rates than mileage-based programs, and could simplify the auditing process. All of these outcomes could result in more streamlined enforcement and better compliance, which would level the playing field for all carriers.

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However, a few caveats should be noted. The forecasting models may have provided overly optimistic projections because the models do not account for the increase in IRP and intrastate plate fees that occurred in FY 2004, meaning the projected plate fee revenues are probably somewhat high. These fee-based sources of revenue are also subject to greater levels of variation from one year to the next, making it much more difficult to project revenues than it is for the weight-distance tax program. Behavioral changes in carrier operations caused by the new policy will be unknown until after implementation is complete. Carriers affected adversely should be expected to register fewer vehicles or find other loopholes in the policy. Intrastate carriers will generally see increased bills, so whatever savings they enjoy as a result of not having to comply with weight-distance tax requirements would have to outweigh the increased registration fees. New carriers would face an added challenge, because higher plate fees would require them to make a larger front-end investment. Registration fees are due at the time a vehicle is registered. IRP requirements do not allow a mechanism to space out registration payments. One advantage of the weight-distance tax is that it is not assessed until the next quarterly tax return is due. A revenue policy requiring a larger registration payment before operations can begin would put new trucking companies at a disadvantage. Perhaps most importantly, at least from the state's perspective, fee-based policies ignore the relationship between highway usage and pavement damage. A system where high-mileage carriers have a reduced financial burden and low-mileage carriers have an increased financial burden is not the most equitable policy solution. Eliminating the weight-distance tax therefore has the potential to yield a less equitable revenue system, and that revenue tends to be less reliable due to greater annual variation in collected plate fees.

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CHAPTER 1. MOTOR CARRIER TAX HISTORY AND APPORTIONMENT

Kentucky currently has a three-tiered tax structure for motor carriers based in the state. Operators of all commercial vehicles pay a fuel tax at the pump on either gasoline or what is classified as a special fuel (e.g. diesel or biodiesel). Companies with vehicles over 26,000 lbs. complete quarterly tax returns (International Fuel Tax Agreement returns for interstate companies and Kentucky Intrastate Tax returns for intrastate companies), which functionally credits their fuel tax purchases for the quarter, and then applies a consumption tax on the fuel they have consumed in each relevant jurisdiction during that period. The consumption tax for Kentucky is a combination of the fuel tax and the surtax rate for that quarter. The consumption rate is applied against the gallons consumed on Kentucky public highways, which are determined by dividing the Kentucky mileage for that quarter by the company’s miles per gallon (MPG) for that period. In addition to the fuel consumption taxes paid, companies with vehicles licensed for 60,000 lbs. or more file a separate tax return (KYU or weight-distance Tax), which assesses 2.85 cents for each mile operated on Kentucky public highways by those specific vehicles. Due to the complexities involved with these computations as well as questions concerning industry compliance, there is considerable concern for the accuracy of the filings and the tax dollars collected. Augmenting this problem is the requirement of quarterly returns for KIT, IFTA and KYU taxes. Tax compliance under current law requires a substantial investment of time and money for motor carriers, the Kentucky Transportation Cabinet (KYTC) and the Kentucky Department of Revenue. Table 3 reports the KRS statutes and regulations associated with these tax programs.

Table 3. Kentucky Motor Carrier Taxes and Fees Studied

Tax	KRS Statutes
Motor Fuels Tax	138.220; 138.210
Motor Fuels Surtax	138.660
Kentucky Intrastate Tax (KIT)	138.660
Kentucky Interstate Fuel Tax (IFTA)	138.227
Kentucky Weight-Distance Tax (KYU)	138.660
Kentucky Intrastate Registration	186.050
Kentucky Interstate Registration (IRP)	186.050; 601 KAR 9:135
Method of Allocation	177.320; 177.365; 234.320

Kentucky Motor Fuels Tax

Since 1980, state law has tied increases to the wholesale price of gasoline. All motorists, whether commercial motor carriers or individuals driving a personal vehicle, must pay the state gasoline and special fuel tax as specified in KRS 138.220. The tax is based on the average wholesale price of gasoline and special fuels (including diesel fuel), which is calculated by the Kentucky Department of Revenue. This rate is based on the formula contained in KRS 138.220(1)(a), which specifies that “an excise tax at the rate of nine percent (9%) of the average wholesale price rounded to the nearest one-tenth of one cent (\$0.001) shall be paid on all

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gasoline and special fuel received in this state. The tax shall be paid on a per gallon basis.” The average wholesale price of these fuels is determined quarterly by the Kentucky Department of Revenue based on reports furnished by licensed gasoline and diesel fuel dealers around the state, as well as independent statistical surveys of fuel prices. The wholesale price is determined exclusive of federal gasoline (of fuel) taxes or tariffs, and may not be upwardly adjusted for tax purposes by more than 10 percent per fiscal year per KRS 138.210(10)(a)(b). If there is an increase in the wholesale price of fuel, the tax increase is implemented three months later. The tax becomes a liability of the dealer when the gasoline is received or enters the dealer's storage facility. The special fuels tax, including the tax on diesel fuel, is also levied on the dealer at the point of receipt, and not the point of sale by the dealer. Although the gasoline and special fuel excise taxes are paid at the wholesale level, both are effectively passed onto consumers at the pump.

While the gasoline and diesel fuel taxes are not exclusive to motor carriers, it is a part of Kentucky's overall fuel tax revenue structure and is collected by the Kentucky Transportation Cabinet. Kentucky levies an excise tax of 26.4 cents per gallon of gasoline and 23.4 cents per gallon of special fuel (or diesel fuel). Changes to the motor fuel tax rates for gasoline and special fuels for 2006-2011 are displayed in Table 4. Quarters where the rate did not change (i.e. was the same as the previous quarter) are not listed. Kentucky's gasoline and special fuels taxes were increased eight times and decreased once (during Q4 2010). The gasoline tax increased from 17.1 cents per gallon in the first quarter of 2006 to 26.4 cents per gallon in the fourth quarter of 2011. The special fuels tax increased from 14.1 cents per gallon in the first quarter of 2006 to 23.4 cents per gallon in the last quarter of 2011. According to the Federation of Tax Administrators, the average state gasoline excise tax as of January 1, 2012 was 21.22 cents per gallon.

Table 4. Kentucky Motor Fuel Tax Rates (2006-2011) ¹

Quarter*	Gasoline (¢)	Special Fuels (¢)
Q1 (2006)	17.10	14.10
Q3 (2006)	18.30	15.30
Q3 (2007)	19.60	16.60
Q3 (2008)	21.10	18.10
Q4 (2009)	21.80	18.80
Q1 (2010)	22.70	19.70
Q3 (2010)	24.50	21.50
Q4 (2010)	24.20	21.20
Q1 (2011)	24.50	21.50
Q3 (2011)	26.40	23.40

*Quarters with tax increases are bold

¹ IFTA, Inc. "Tax Rates." Accessed 1 February 2012 at: http://www.iftach.org/taxmatrix3/choose_tableq2.php

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Kentucky's gasoline excise tax rate is roughly five cents per gallon higher than the national average, and ranks 13th-highest nationally.² Nationally, the average special fuels excise tax is 21.86 cents per gallon. Kentucky's special fuels tax is about 1.5 cents per gallon above the national average, and ranks 21st nationally.³

Many analyses of state fuel taxes also include related taxes or fees added to the overall motor fuel tax structure. Kentucky law prohibits other excise and license taxes on gasoline or special fuel by the state or any political subdivision of the state, except as provided by KRS Chapter 138 (see KRS 138.220). However, Kentucky does have a Petroleum Environmental Assurance Fee, which is set at \$0.004 per gallon of gasoline and special fuels received by dealers in the state. Several other states have similar types of fees. When taxes and fees in excess of the excise tax are taken into account, the average combined state tax on gasoline is 23.48 cents per gallon of gasoline and 24.51 cents per gallon for special fuels. Kentucky's current combined tax rate is 27.8 cents per gallon for gasoline and 24.8 cents per gallon for special fuels. Kentucky's ranking for combined state taxes on gasoline is 13th-highest nationally – the same ranking as the gasoline excise tax. Kentucky's current combined tax ranking for special fuels is 22nd-highest nationally. Therefore, Kentucky's motor fuel taxes are slightly above the national average and rank approximately the same whether an analyst uses the excise tax rate or the combined tax rate, which includes the excise tax as well as any taxes or fees related to the excise tax. However, these rankings do not take into account the fuel surtax, which is assessed on motor carriers logging miles on Kentucky roads.

Table 5. Fuel Tax Revenues (FY 2004-2011)⁴

Fiscal Year	Revenue	% Change from Previous Year
2004	\$441,382,996	--
2005	\$469,621,779	+6.4
2006	\$501,927,927	+6.9
2007	\$538,568,693	+7.3
2008	\$571,316,086	+6.1
2009	\$585,871,307	+2.5
2010	\$616,967,780	+5.3
2011	\$682,217,486	+10.6

Table 5 displays the tax revenue generated from Kentucky's motor fuel tax program. As aforementioned, gasoline and special fuels taxes are indexed to the wholesale price of gas. Steep

² Gasoline and special fuels tax rankings are based on the Federation of Tax Administrators' comparison of the 48 contiguous states and the District of Columbia.

³ This figure is exclusive of Kentucky's surtax.

⁴ FY 2004-2008 data comes from the Office of State Budget Director. Data for FY 2009-2011 was obtained from the Kentucky Department of Revenue.

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risers in wholesale fuel costs have increased tax rates and boosted Kentucky's fuel tax revenues despite decreased consumption of special fuels and gasoline, as well as an economic recession during the late 2000s. Between FY 2004 and FY 2011, annual fuel tax revenue has increased by more than \$240 million. The smallest increase was 2.5 percent, which came between FY 2008 and 2009, amidst the recession. The increase of 10.6 percent between FY 2010 and 2011 translates to more than \$65 million in additional Road Fund revenues.

Kentucky Motor Carriers Surtax

In Kentucky, motor carriers are assessed a surtax based on the wholesale price of fuel in addition to the motor fuel tax.⁵ According to KRS 138.660, motor carriers "shall pay a surtax at the rate of two percent (2%) of the average wholesale price as provided in subsection (1) of this section, on the amount of gasoline and at the rate of four and seven-tenths percent (4.7%) on the amount of special fuels used in operations on public highways of this state." Whereas the motor fuel tax is paid by fuel dealerships and passed along to motorists at the pump, the surtax applies only to motor carriers and is paid after the fuel is consumed based on the number of miles logged on Kentucky roads. The determination process for the surtax is the same as that for the excise tax. The average wholesale price of fuel is determined on a quarterly basis. The wholesale price estimates compiled by the Kentucky Department of Revenue will be used to determine the surtax in the following quarter. The same overall restrictions apply to surtax increases as with the excise tax increases: the upward adjustment for the wholesale price of gas is capped at 10 percent annually. A motor carrier must file a quarterly tax return with the Division of Motor Carriers in the Kentucky Transportation Cabinet. The type of return filed depends on whether a motor carrier is an *intrastate* or *interstate* carrier. Intrastate carriers will apply for a KIT license and file the corresponding returns. Interstate carriers will apply for an IFTA license and file IFTA returns.

Motor carriers are charged based on the amount of fuel consumed on public highways in Kentucky. On the IFTA and KIT returns carriers are asked to report the total number of miles logged in each applicable jurisdiction and the number of gallons consumed in each quarter. For intrastate carriers, this process is rather simple, as all miles are logged and all fuel is purchased in Kentucky. Interstate carriers must enter miles logged in each jurisdiction as well as fuel purchases. Motor carriers that purchased more fuel than they consumed in Kentucky may use the fuel tax paid at the pump as credit toward their surtax bill when the IFTA return is filed.

The combined rows in Table 6 show the overall tax rate for motor carriers when combining the excise tax and surtax for gasoline and then special fuels. The two numbers are fairly close in 2006, but the more accelerated rate of increase for special fuels surtax has increased the difference in total tax burden for gasoline and special fuels. The result, as shown in the final column of Table 6, is a higher combined tax rate on special fuels than gasoline. The

⁵ Per KRS 138.665(5) a "motor carrier" means every person who operates or causes to be operated on any highway in this state, any bus engaged in hauling passengers for hire operating under a certificate of convenience and necessity and any commercial truck or commercial tractor-trailer combination having a total of two (2) or more axles and a declared gross weight above twenty-six thousand (26,000) pounds.

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higher combined tax rate for special fuels will apply to most motor carriers, as roughly 95 percent of commercial trucks operate on diesel-powered engines.⁶

Table 6. Fuel Surtax and Combined Excise, Surtax Rate (2006-2011)⁷

Quarter	Gasoline Surtax	Special Fuel Surtax	Gasoline Tax + Surtax	Special Fuel Tax + Surtax	Difference (Gas, SF)
Q1 (2006)	2.70	6.30	19.8	20.4	-0.6
Q3 (2006)	3.00	6.90	21.3	22.2	-0.9
Q3 (2007)	3.30	7.60	22.9	24.2	-1.3
Q3 (2008)	3.60	8.40	24.7	26.5	-1.8
Q4 (2009)	3.70	8.80	25.5	27.6	-2.1
Q2 (2010)	3.90	9.20	26.6	28.9	-2.3
Q3 (2010)	4.30	10.20	28.8	31.7	-2.9
Q4 (2010)	4.30	10.00	28.5	31.2	-2.7
Q1 (2011)	4.30	10.20	28.8	31.7	-2.9
Q3 (2011)	4.80	11.20	31.2	34.6	-3.4

*Surtax increases are marked in bold typeface.

Table 7 displays changes to gasoline and special fuel surtax rates from 1996 through 2011. The gasoline surtax has been increased seven times during this period. The special fuels surtax was increased eight times, with one temporary reduction during the fourth quarter of 2010. The special fuels surtax is increased at a higher rate than the gasoline surtax because KRS 138.660 dictates the surtax for gasoline is to be calculated as two percent and the surtax for special fuels at 4.7 percent. However, the fuel tax for gasoline has been higher given the higher wholesale price of gasoline relative to special fuels for most of the period. In a relatively short period of time, the annual surtax revenue has increased by a factor of 2.54. During the latter half of this time period, consumption of gasoline and special fuels in Kentucky has declined slightly. While there were some upward fluctuations, special fuel gallons consumed in the state has decreased overall from 1.14 billion in FY 2004 to 1.02 billion in FY 2011. Likewise, gasoline consumption decreased from 2.3 billion gallons in FY 2004 to 2.19 billion gallons in FY 2012. The dramatic increase in both fuel tax and surtax revenue is due to fuel price increases, which has induced some reduction in fuel consumption, but not enough to offset the additional revenue generated by tax increases.

⁶ Alaska Trucking Association. "Obama's Jobs Plan Will Require Clean Diesel, DTF Says." Accessed 3 February 2012 at: <http://www.aktrucks.org/servlet/content/news.html>

⁷ IFTA, Inc. "Tax Rates." Accessed 1 February 2012 at: http://www.iftach.org/taxmatrix3/choose_tableq2.php

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Table 7. Kentucky Surtax Revenues, FY 1996-2011

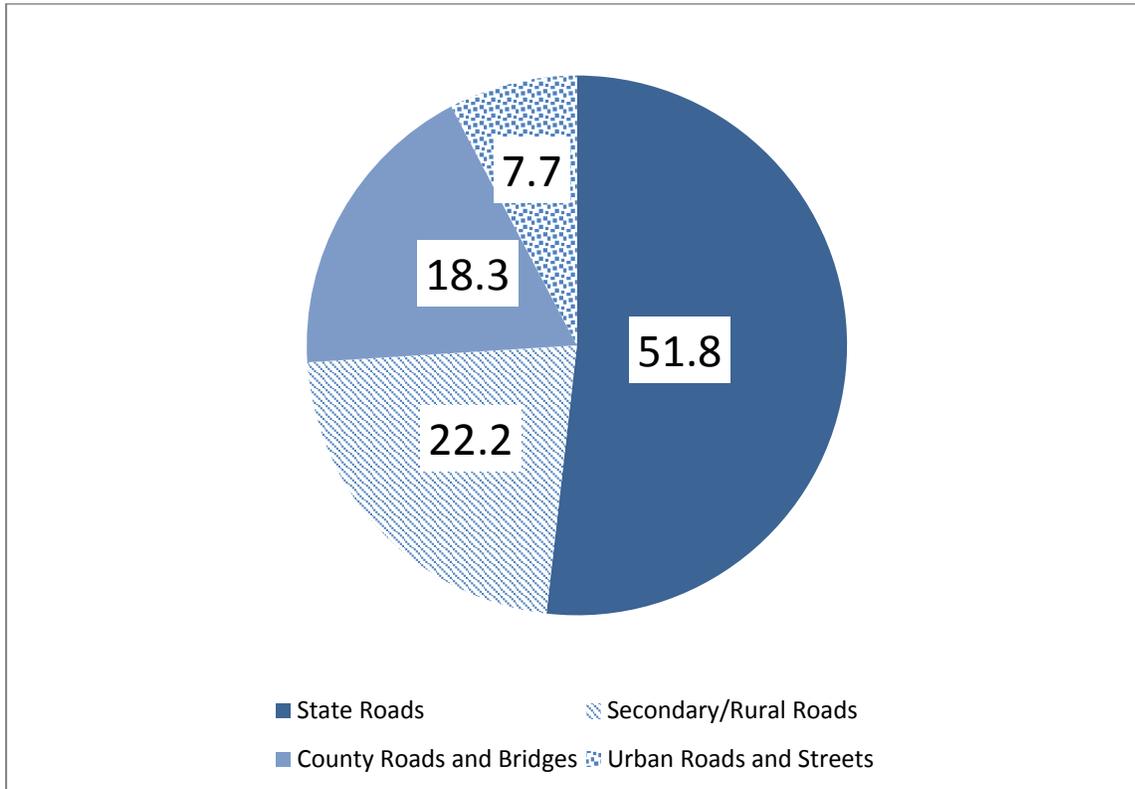
Fiscal Year	Revenue	% Change from Prior Year
1996	20,978,528	--
1997	19,511,819	-7.0
1998	24,378,278	24.9
1999	23,900,921	-2.0
2000	23,928,178	0.1
2001	26,097,159	9.1
2002	25,313,069	-3.0
2003	24,573,302	-2.9
2004	26,928,928	9.6
2005	30,757,772	14.2
2006	40,641,115	32.1
2007	32,401,205	-20.3
2008	45,748,926	41.2
2009	41,988,460	-8.2
2010	42,210,681	0.5
2011	53,338,740	26.4

Kentucky has statutory designations which determine how fuel tax and fuel surtax revenues are allocated. KRS 177.320 and KRS 177.365 dictate revenues be apportioned for state use, secondary/rural roads, country roads and bridges and urban roads and streets. Figure 2 demonstrates the values for each apportioned category. According to state law, 51.8 percent of the fuel tax and surtax goes toward the construction, reconstruction and maintenance of state highways; 22.2 percent goes toward construction, reconstruction and maintenance of secondary and rural roads; 18.3 percent goes toward the construction, reconstruction and maintenance of county roads and bridges; and 7.7 percent to the construction, reconstruction and maintenance of urban roads and streets. These funds are to be used for no other purpose than those defined, with two exceptions. KRS 138.220(3) exempts a small percentage of the motor fuel tax and surtax from the calculations and deposited into the state Road Fund. In FY 2011, this equated to \$373,685 for the surtax portion of the exempted funds. The second exception, found in KRS 177.320(4), sets aside 0.1 percent of all fuel tax, fuel surtax and tax on liquefied petroleum (KRS 234.320) to fund the Kentucky Transportation Center. This funding is capped at \$190,000 annually. These two exceptions constitute a small percentage of the overall revenue totals.

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Allocation of Fuel Tax and Surtax Revenue

Figure 2. Allocation of Motor Fuel Tax and Surtax



Kentucky Intrastate Tax (KIT)

A KIT license is required for intrastate carriers with a licensed weight exceeding 26,000 lbs., or vehicles with three or more axles, regardless of weight, to report fuel use tax. According to Transportation Cabinet records, there were 3,580 active KIT license holders in Kentucky as of February 2012. Motor carriers pay surtax on the amount of gasoline and special fuels used in operation on public highways throughout the state, which in the case of intrastate carriers is a relatively straightforward calculation. The carrier logs the number of miles logged by each power unit in its fleet and divides that number by its average miles per gallon in order to determine the amount of fuel consumed. The gallons of fuel are then multiplied by the surtax rate established by the Kentucky Department of Revenue based on the criteria set forth in KRS 138.660.

IFTA Tax

Kentucky became a member of the International Fuel Tax Agreement (IFTA) on July 1, 1998. IFTA is an agreement made available to the 48 contiguous U.S. states and Canadian provinces to simplify fuel tax reporting for interstate carriers operating in more than one jurisdiction. Each jurisdiction (that is, state or province) sets its own fuel tax and/or surtax and applies it to the number of miles a carrier logs within that jurisdiction. KRS 138.227 authorizes entry into IFTA “in order to permit base state or base jurisdiction licensing of persons using

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motor fuel in this state.” IFTA taxes apply to all interstate carriers that log miles in Kentucky and whose vehicles have a gross weight of more than 26,000 lbs., or have three or more axles, regardless of the weight.

IFTA taxes have an added degree of complexity because taxes are apportioned based on the number of miles traveled by motor carriers in each jurisdiction. Essentially, this means Kentucky-based interstate carriers pay taxes to the KYTC for all miles traveled in each member jurisdiction. Kentucky retains its share of the applicable tax and apportions the remainder of the tax according to how many miles carriers logged in each other member jurisdiction. The surtax rate for IFTA license holders is the same rate charged to KIT license holders. The only difference concerns the manner in which miles traveled are calculated. As of February 8, 2012, there were 4,132 active IFTA licenses.

Weight-Distance Tax

The Kentucky Weight-Distance Tax is a tax designed to generate revenue from heavy truck carriers whose vehicles create greater wear on state and federal roads.⁸ All trucks with a combined licensed weight over 59,999 lbs. are subjected to this tax for every mile traveled within the state.

Table 8. KYU Revenue 1996-2012

Year	Revenue
1996	59,727,991
1997	63,024,330
1998	66,636,092
1999	70,161,607
2000	75,143,363
2001	75,170,124
2002	75,265,638
2003	76,851,210
2004	79,574,022
2005	83,069,295
2006	85,336,711
2007	85,435,610
2008	84,353,542
2009	75,444,283
2010	70,498,757
2011	73,983,781
2012	75,111,565

⁸ Federal Highway Administration, 1997 Federal Highway Cost Allocation Study, Washington, DC, 1997.

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KRS 138.660 states “every motor carrier shall pay for every motor vehicle operated upon the public highways of this state with a combined licensed weight in excess of fifty-nine thousand nine hundred and ninety-nine (59,999) pounds a weight distance tax computed at the rate of two and eighty-five hundredths cents (\$0.0285) per mile.” KIT initially resided under the Kentucky Weight-Distance Tax Program, but was made a standalone program in 1996 due to changes in federal law.

Table 8 displays the revenue generated by the weight-distance tax from FY 1996 to FY 2011. Revenues steadily increased from FY 1996 to FY 2007, growing from \$59.7 million to \$85.4 million. However, these revenues have not fully recovered from the economic collapse of 2008. Revenues fell slightly in 2008 before declining sharply from \$84.3 million to \$75.4 million in 2009. Weight-distance tax receipts declined further to roughly \$70.5 million in 2010 before recovering slightly at nearly \$74 million in 2011. FY 2012 revenue figures show the revenue inching up to \$75.1 million. The future of the weight-distance tax program revenue will be largely dependent on the performance of the state trucking industry, as well as the U.S. trucking industry in general, given that motor carriers from all states are required to pay the tax if operating in Kentucky. Unlike the surtax, all of the weight-distance tax proceeds go to the state’s Road Fund.

Table 9. New KYU Licenses Issued, FY 2007-2011

Year	KYU Licenses Issued
2007	13,440
2008	12,692
2009	11,096
2010	11,421
2011	12,174

Table 9 displays the number of new KYU licenses issued per year from FY 2007 to FY 2011. As of February 2012, there were 58,116 total active KYU licenses on record. Given the large number of active licenses and the quarterly filing requirement, administering the KYU is a very complex and difficult task for Kentucky’s Division of Motor Carriers. However, the new online tax filing wizard has significantly helped the state address these problems.

Weight-Distance Taxes in Other States

Currently, four states have a weight-distance tax: Kentucky, New York, Oregon and New Mexico. Kentucky’s weight-distance tax is, relatively speaking, a simple one. The rate is \$.0285 per mile for all commercial vehicles registered at 60,000 lbs. and over. New York, Oregon and New Mexico all have a tiered system where the tax rate varies by gross weight. In New York and Oregon, trucks weighing 18,001 lbs. and up are assessed a weight-distance tax, with the rate increasing gradually over 2,000-pound increments up to 80,001 lbs. In New Mexico, the weight-distance tax begins with trucks a gross vehicle weight of 26,001 lbs. and over, increasing with

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each 2,000-pound increment, with the highest rate set for vehicles registered at 78,001 lbs. and over.

Table 10. Weight-Distance Tax Rates by Licensed Weight (Cents Per Mile)

State/Weight	26,001-28,000	30,001-32,000	40,001-42,000	58,001-60,000	60,001-62,000	78,001-80,000
Kentucky	N/A	N/A	N/A	0.0285	0.0285	.0285
New Mexico	0.01101	0.01277	0.01805	0.02993	0.03124	.04378
New York#	0.0133	0.0147	0.0182	0.0308	0.0322	.0546
Oregon	0.0498	0.0552	0.0677	0.0941	0.099	.1638
# New York has two rate schedules, and tables for unloaded vehicles. The table above displays rates that apply to most commercial vehicles.						

Table 10 presents rate information for the weight-distance tax states in cents. Kentucky’s tax is smaller in scope and lower in terms of the rate. The weight-distance tax does not apply to lower-weight trucks in Kentucky, as in the other three states. As a result, fewer types of vehicles in Kentucky are subject to the weight-distance tax than in other states with the tax. Additionally, Kentucky’s rate for 60,000-pound vehicles is lower than every other state with the tax. New Mexico and New York have slightly higher but similar rates, although New York’s rates increase at a faster pace. Oregon has a significantly higher weight-distance tax rate than the other states.

Table 11. Weight-Distance Tax Revenue by State, FY 2007

State	Revenue (Millions)
Kentucky	\$85.4
New York ⁹	\$152.7
New Mexico ¹⁰	\$88.4
Oregon ¹¹	\$238.1*
*Based on Oregon’s biennial budget projections. Half of the forecasted two-year amount is used here.	

Table 11 provides a snapshot of tax revenue in the four weight-distance states for FY 2007. Kentucky’s tax generates the least revenue of the four, which is unsurprising given the

⁹ Iowa Transportation Department. 2011. “Summary of State Use of Weight-Distance Tax.” Accessed 3 March 2012 at:

<http://www.iowadot.gov/transportation2020/material/june27/Weight%20Distance%20and%20Electric%20Vehicle%20Fee%20Summary.pdf>

¹⁰ New York Division of the Budget. 2008. “2008-09 Executive Budget – Economic and Revenue Outlook.” Accessed 3 March 2012 at:

<http://www.budget.ny.gov/pubs/archive/fy0809archive/eBudget0809/economicRevenueOutlook/economicRevenueOutlook.pdf>

¹¹ Oregon Budget and Management Division. 2009. “2009-11 Governor’s Recommended Budget: Revenue Section.” Accessed 3 March 2012 at: <http://www.oregon.gov/DAS/BAM/GRB0911intro.shtml>

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lower mileage rate and comparatively limited scope of the tax. Oregon biennial projections for 2007-2009 include \$476.2 million in revenue from its weight-distance tax. As of 2000, roughly 30 percent of Oregon's Road Fund revenue was generated from the tax.¹² In contrast, Kentucky's weight-distance tax constitutes roughly 5.5 percent of total Road Fund revenue for FY 2011.

International Registration Plan (IRP)

IRP was created in 1973 by an Association of Motor Vehicle Administrators (AAMVA) subcommittee consisting of motor vehicle administrators and transportation industry representatives. The primary objective of the committee was to develop a registration plan that would effectively incorporate all of the contiguous American states and Canadian provinces, and specify an apportionment or reciprocity plan agreeable to both the trucking industry and participating jurisdictions. Currently, the 48 contiguous U.S. states, the District of Columbia and ten Canadian provinces comprise the 59 IRP member jurisdictions. More than two million commercial vehicles are registered with IRP – a number that may swell if Mexico decides to join the agreement. It should be noted that IRP is a fee-based plating program, and not a tax.

New motor carriers are registered with a base jurisdiction, paying all registration fees directly to that jurisdiction. The current plan allows new registrants to submit their own estimated distances for each jurisdiction or to adopt a basic estimate derived by IRP officials. Registration renewals are similar in that registrants declare jurisdictions in which they intend to travel, but the mileage estimates are based on miles logged by the registrant in that particular jurisdiction in the previous year, unless the renewing registrant has never declared that particular jurisdiction. These first-time registrants or first-year jurisdiction carriers make use of official IRP estimates, which generally overstate the amount of miles logged because the IRP system assumes a carrier will log the mean number of miles reported in each jurisdiction for carriers based in the same base jurisdiction.

Each month, Kentucky sends transmittals to other jurisdictions based on reported or estimated carrier mileage logged by Kentucky-based carriers. Carriers typically pay these fees annually, but can register at any point in time, making monthly transmittals necessary. In addition, Kentucky receives transmittals from other jurisdictions based on the percentage of miles renewing carriers logged in the state.

A registrant may incur fees in excess of the amount charged if registration fees were calculated based on miles logged in the previous year instead of mileage estimates for the forthcoming year. A trucking company may begin operating in a jurisdiction where it is not registered, and in order to legally operate, the company must either add that jurisdiction as a supplemental registration or purchase a trip permit. Given the variability in load routes from year to year, it is possible a company would have to purchase several trip permits in several jurisdictions. As a result, many trucking companies feel they are being penalized merely because they are unable to correctly forecast every jurisdiction in which they will operate, and that the

¹² Oregon Legislative Committee Services. 2000. "Weight-Mile Taxes in Oregon." Accessed 3 March 2012 at: <http://www.leg.state.or.us/comm/commsrvs/wtmile.pdf>

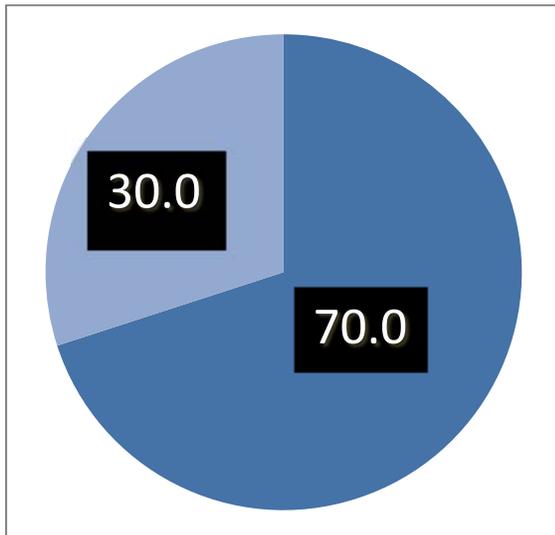
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process is flawed. According to a White Paper published by the IRP’s Full Reciprocity Task Force, many of these agencies are small carriers with irregular operating routes. From the trucking industry’s perspective, the current IRP policy results in some carriers paying more than 100 percent (of what would be charged based solely on logged miles) in the form of supplemental registration fees and trip permits.

The IRP Board of Directors created a task force to generate an alternative plan that would achieve the organization’s chief goal, which is to provide “a registration reciprocity agreement that would be fair to the motor transportation industry and provide a fair share of revenue to all jurisdictions.” Conceptually, the FRP is hardly new. The first plan calling for the elimination of registration fees based on estimated distance and the ability to operate in every participating jurisdiction was introduced at the Administrative Policy and Procedures Sub-Committee Meeting in Dallas, TX, in 1981. Several iterations have been proposed since, but such proposals have met stiff resistance due to concerns over financial impacts. The FRP Task Force was charged with gathering information about the policy and assessing the feasibility of alternatives “in order to resolve longstanding fairness and administrative complexities relating to estimating distance under the [current] plan.”

This plan has been tabled for the immediate future, but could be revisited at a later date. It merits mention here because it could make a significant financial impact on IRP revenues in Kentucky and other jurisdictions should such a plan take place. According to the IRP’s Full Reciprocity Task Force Study, Kentucky is projected to lose \$2.5 million annually in registration fees for new fleets under the FRP.

Figure 3. Distribution of IRP Revenue



Kentucky’s IRP revenue is also allocated differently than the surtax and weight-distance tax. Registration fees from both out-of-state and Kentucky-based interstate carriers are divided between the state and the counties. As Figure 3 shows, 70 percent of the money goes to the state Road Fund and 30 percent goes to the counties for road maintenance. Table 12 breaks down IRP

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revenues in several ways. The first two columns break down revenue by source. “In-State IRP” revenues are those derived from carriers based in Kentucky, while “Out-State IRP” is that which is derived from out-of-state carriers traveling to or through Kentucky. The second set of columns shows the division of the state share (for the Road Fund) and county share (for county roads). Two first pair of columns and second pair of columns both equal the IRP total on the right side of the chart, although it should be noted each figure is merely rounded to the nearest dollar. IRP revenue has fluctuated up and down more frequently than the weight-distance tax and fuel surtax. Although the overall revenue has slowly expanded for the entire period, there is no steady pattern of increased revenue or a decline. There are several explanations for these aberrant numbers. The funds netting process for an out-of-state carrier is quite complex and sometimes journal vouchers are entered to correct for problems with the accounting process. For example, ad valorem taxes for out-of-state companies are collected by motor carriers and transferred to an account managed by the Department of Revenue. Aside from the general strength of the economy and the growth in the trucking industry in particular, registration patterns and mileage ratios are constantly in flux. Changes in trucking routes, road construction or plate fees can also alter revenue collections. Kentucky’s IRP plate fees have not changed since 2007.

Table 12. IRP Revenue (FY 1996-2011)

Year	In-State IRP	Out-State IRP	State Share	County Share	IRP Total
1996	8,922,547	27,613,733	25,575,396	10,960,884	36,536,280
1997	11,042,986	26,976,685	26,613,770	11,405,901	38,019,671
1998	9,501,760	27,186,890	25,682,055	11,006,595	36,688,650
1999	10,252,294	31,942,047	29,536,039	12,658,302	42,194,341
2000	10,301,341	38,565,792	34,206,993	14,660,140	48,867,133
2001	10,003,794	30,713,075	28,501,808	12,215,061	40,716,869
2002	10,301,792	37,279,120	33,306,638	14,274,273	47,580,911
2003	11,587,404	23,345,993	24,453,378	10,480,019	34,933,397
2004	13,015,520	44,557,022	40,300,779	17,271,762	57,572,541
2005	12,976,721	40,759,510	37,615,362	16,120,869	53,736,231
2006	13,619,191	43,460,959	39,956,105	17,124,045	57,080,150
2007	16,142,324	45,151,883	42,684,710	18,609,497	61,294,207
2008	15,476,721	33,346,295	35,683,672	13,139,344	48,823,016
2009	15,269,851	39,062,619	38,026,916	16,305,554	54,332,470
2010	15,207,514	37,167,933	36,662,335	15,713,112	52,375,447
2011	14,816,919	38,556,041	37,360,963	16,011,998	53,372,961

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Intrastate Plates

Intrastate carriers must have intrastate plates, which are much simpler to purchase and use, because there is no jurisdiction apportionment, cab card or detailed filing requirements. These plates may be purchased at the same price as the corresponding IRP plates in the same registered weight class. However, carriers purchasing these plates must pay 100 percent of the full plate fee for the year of registration. These carriers will not have authority to operate in any jurisdiction other than Kentucky absent the purchase of trip permits for another jurisdiction. The majority of heavy trucks in Kentucky are registered under the IRP program, but there are at least 750 intrastate carriers with vehicles 60,000 lbs. and above as of August 2012. Revenues for FY 2009 and FY 2010 were \$8.2 million and \$7.8 million, respectively, for plates 60,000 lbs. and above. Reliable data for other years was not available.

Road Fund Revenue

Kentucky's Road Fund revenue picture provides important context for decisions about the weight-distance tax program, or any program whose revenue is deposited in the Road Fund. Sources of Road Fund revenue include the motor fuel tax, motor fuel surtax, motor vehicle usage tax, motor vehicle licenses, driver licenses, weight-distance tax, truck decals, special fees, departmental fees, fees in lieu of traffic fines, investment income, tolls (discontinued in 2006), and redeposit of state funds. Table 13 compares fund revenues in FY 2004 and 2011. The first column lists the revenue category, and the second and third columns fiscal years 2004 and 2011, respectively. The percentage change between 2004 and 2011 is in the fourth column, and the percentage of the overall Road Fund revenues for each category is in the fifth column. Overall, Road Fund revenues have increased from roughly \$1.12 to \$1.34 billion during this time period. The primary driver of this increase has been the motor fuel tax, which has increased 55 percent from \$441.4 to \$682.2 million. Conversely, motor vehicle usage tax revenues, which constitute the second largest revenue source for the Road Fund, have dropped about 11 percent from \$429.2 to roughly \$381.8 million. Motor fuel taxes and motor vehicle usage taxes comprise nearly 80 percent of all Road Fund revenues. Motor vehicle licenses (registrations) are the next-largest revenue source, with 7.3 percent of all FY 2011 Road Fund revenue. Next is the weight-distance tax, which accounts for 5.5 percent of the Road Fund revenue. These four taxes and fees alone comprise more than 90 percent of all revenue. Other notable fees are the motor fuels surtax, which has increased dramatically due to high fuel costs, and driver license fees, which owes mostly to an increase from \$8 to \$20 in July 2005. Road Fund receipts show the weight-distance tax has actually declined slightly between FY 2004 and 2011, likely due to recessionary effects, higher gas prices and reduced consumption of gasoline. Still, the weight-distance tax generated an average of \$77.94 million over the last five years.

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Table 13. Road Fund Revenue Comparison, FY 2004 & 2011

Revenue Category	2004	2011	Change	% of Fund (FY 2011)
Motor Fuels Taxes	441,382,996	682,217,486	55%	50.96%
Motor Fuels Surtax	18,185,947	50,608,626	178%	3.78%
Motor Vehicle Usage	429,242,527	381,767,869	-11%	28.52%
Motor Vehicle Licenses	93,388,573	97,812,587	5%	7.31%
Driver Licenses	5,623,874	15,736,805	180%	1.18%
Weight-Distance	79,574,022	73,983,781	-7%	5.53%
Truck Decals	725,403	793,715	9%	0.06%
Other Special Fees	13,626,402	12,209,142	-10%	0.91%
Departmental Fees	15,258,391	18,167,778	19%	1.36%
In Lieu of Traffic Fines	1,521,583	779,828	-49%	0.06%
Investment Income	7,507,462	1,995,228	-73%	0.15%
Miscellaneous	686,121	989,197	44%	0.07%
Highway Tolls	7,958,452	\$0	-100%	0.00%
Redeposit of State Funds	1,612,799	1,749,883	8%	0.13%
Sum	1,116,294,552	1,338,811,925	20%	100%

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CHAPTER 2. CONSOLIDATION IN OTHER STATES

Idaho

Background

From the early 1950s until 1999, Idaho had a weight-distance tax. In its last iteration, this tax applied to all motor carriers operating vehicles over 60,000 lbs., included a \$120 registration fee and a mileage tax based on the table provided in Table 14. The mileage rate varied by weight class; the rate increased for every 2,000-pound increase in gross vehicle weight.¹³ The policy change was part of a settlement with the American Trucking Association (ATA) over a lawsuit it filed in 1999 against the Idaho Transportation Department (ITD).¹⁴ At issue was a feature of the weight-distance tax, which provided a special rate for vehicles hauling particular commodities, primarily farm products, bulk forest products and gravel.¹⁵ In effect this rate generally applied to in-state carriers, and the ATA argued it constituted an unfair competitive advantage for Idaho carriers vis-à-vis out-of state carriers. The 4th District Judicial Court of Idaho ruled in favor of the ATA on the grounds that a separate rate structure was an unconstitutional infringement on interstate commerce.¹⁶ The ITD entered into negotiations with the ATA, created a \$27 million settlement pool and agreed to scrap the existing tax; the settlement was approved by the court.¹⁷

In response to the settlement, the ITD decided to implement a fee-based system to replace the weight-distance tax.¹⁸ Essentially, the lost weight-distance tax revenue would be recovered by increasing the plate fee (or vehicle registration fee) on commercial trucks. The original plan, which went into effect in October 2000, kept the same 2,000-pound increment weight classifications and provided three mileage categories with variable fees. A year later, the registration scheme was modified to allow for five mileage categories: 1-7,500 miles, 7,501-20,000 miles, 20,001-35,000 miles, 35,001-50,000 miles and over 50,001 miles. This plan has been in effect since 2001. Table 14 shows the rates under the weight-distance tax as well as the rates under the current system. The interim system during the transitional phase is not included.

¹³ The rate is reported in the table as mills per mile; in order to derive the cent amount one must take the decimal three places to the left.

¹⁴ *American Trucking Associations, Inc. v. Idaho Transportation Department*, CV OC 9700724D

¹⁵ Casavant, Ken and Eric Jessup. 2004. "Idaho Commercial Truck Registration Study." National Institute for the Advancement of Transportation Technology. University of Idaho. Accessed 7 February 2012 at: http://www.webs1.uidaho.edu/niatt/research/Final_Reports/CLK480_N04-05.pdf

¹⁶ *Ibid.*

¹⁷ ATA Litigation Center. "Victory List." 2011. Accessed 14 February 2012 at:

<http://www.truckline.com/AdvIssues/Litigation/Documents/2011%20Victory%20List%202011-22-11.pdf>

¹⁸ ID Code § 49-434

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Table 14. Truck Fees in Idaho (Old Weight Distance Tax and New Fee-Based System)

		Idaho Law to 1999			Idaho Code 2002 to present				
		Mills per mile							
Weight Group Beginning	Weight Group Ending	Regular Weight-distance Rate	Limited Weight-distance Rate	1 to 7,500 miles	7,501 to 20,000 miles	20,001 to 35,000 miles	35,001 to 50,000 miles	over 50,000 miles	
60,001	to 62,000	30.05	22.45	\$223	\$650	\$813	\$938	\$1,560	
62,001	to 64,000	31.35	22.45	\$251	\$733	\$917	\$1,058	\$1,760	
64,001	to 66,000	32.60	22.45	\$280	\$817	\$1,021	\$1,178	\$1,960	
66,001	to 68,000	33.90	22.45	\$309	\$900	\$1,125	\$1,299	\$2,160	
68,001	to 70,000	35.15	22.45	\$337	\$983	\$1,229	\$1,419	\$2,360	
70,001	to 72,000	36.40	22.45	\$366	\$1,067	\$1,333	\$1,539	\$2,560	
72,001	to 74,000	38.55	22.45	\$394	\$1,150	\$1,438	\$1,659	\$2,760	
74,001	to 76,000	40.65	22.45	\$423	\$1,233	\$1,542	\$1,780	\$2,960	
76,001	to 78,000	42.75	22.45	\$451	\$1,317	\$1,646	\$1,900	\$3,160	
78,001	to 80,000	44.90	22.45	\$480	\$1,400	\$1,750	\$2,020	\$3,360	
80,001	to 82,000	47.00	24.55	\$494	\$1,442	\$1,802	\$2,080	\$3,460	
82,001	to 84,000	49.10	26.65	\$509	\$1,483	\$1,854	\$2,140	\$3,560	
84,001	to 86,000	51.20	28.75	\$523	\$1,525	\$1,906	\$2,200	\$3,660	
86,001	to 88,000	53.30	30.85	\$537	\$1,567	\$1,958	\$2,260	\$3,760	
88,001	to 90,000	55.40	32.95	\$551	\$1,608	\$2,010	\$2,321	\$3,860	
90,001	to 92,000	57.50	35.05	\$566	\$1,650	\$2,063	\$2,381	\$3,960	
92,001	to 94,000	59.60	37.15	\$580	\$1,692	\$2,115	\$2,441	\$4,060	
94,001	to 96,000	61.70	39.25	\$594	\$1,733	\$2,167	\$2,501	\$4,160	
96,001	to 98,000	63.80	41.35	\$609	\$1,775	\$2,219	\$2,561	\$4,260	
98,001	to 100,000	65.90	43.45	\$623	\$1,817	\$2,271	\$2,621	\$4,360	
100,001	to 102,000	68.00	45.55	\$637	\$1,858	\$2,323	\$2,681	\$4,460	
102,001	to 104,000	70.10	47.65	\$651	\$1,900	\$2,375	\$2,741	\$4,560	
104,001	to 106,000	72.20	49.75	\$666	\$1,942	\$2,427	\$2,802	\$4,660	
106,001	to 108,000	74.30	51.85	\$680	\$1,983	\$2,479	\$2,862	\$4,760	
108,001	to 110,000	76.40	53.95	\$694	\$2,025	\$2,531	\$2,922	\$4,860	
110,001	to 112,000	78.50	56.05	\$709	\$2,067	\$2,583	\$2,982	\$4,960	
112,001	to 114,000	80.60	58.15	\$723	\$2,108	\$2,635	\$3,042	\$5,060	
114,001	to 116,000	82.70	60.25	\$737	\$2,150	\$2,688	\$3,102	\$5,160	
116,001	to 118,000	84.80	62.35	\$751	\$2,192	\$2,740	\$3,162	\$5,260	
118,001	to 120,000	86.90	64.45	\$766	\$2,233	\$2,792	\$3,222	\$5,360	
120,001	to 122,000	89.00	66.55	\$780	\$2,275	\$2,844	\$3,283	\$5,460	
122,001	to 124,000	91.10	68.65	\$794	\$2,317	\$2,896	\$3,343	\$5,560	
124,001	to 126,000	93.20	70.75	\$809	\$2,358	\$2,948	\$3,403	\$5,660	
126,001	to 128,000	95.30	72.85	\$823	\$2,400	\$3,000	\$3,463	\$5,760	
128,001	to 129,000	97.40	74.95	\$837	\$2,442	\$3,052	\$3,523	\$5,860	

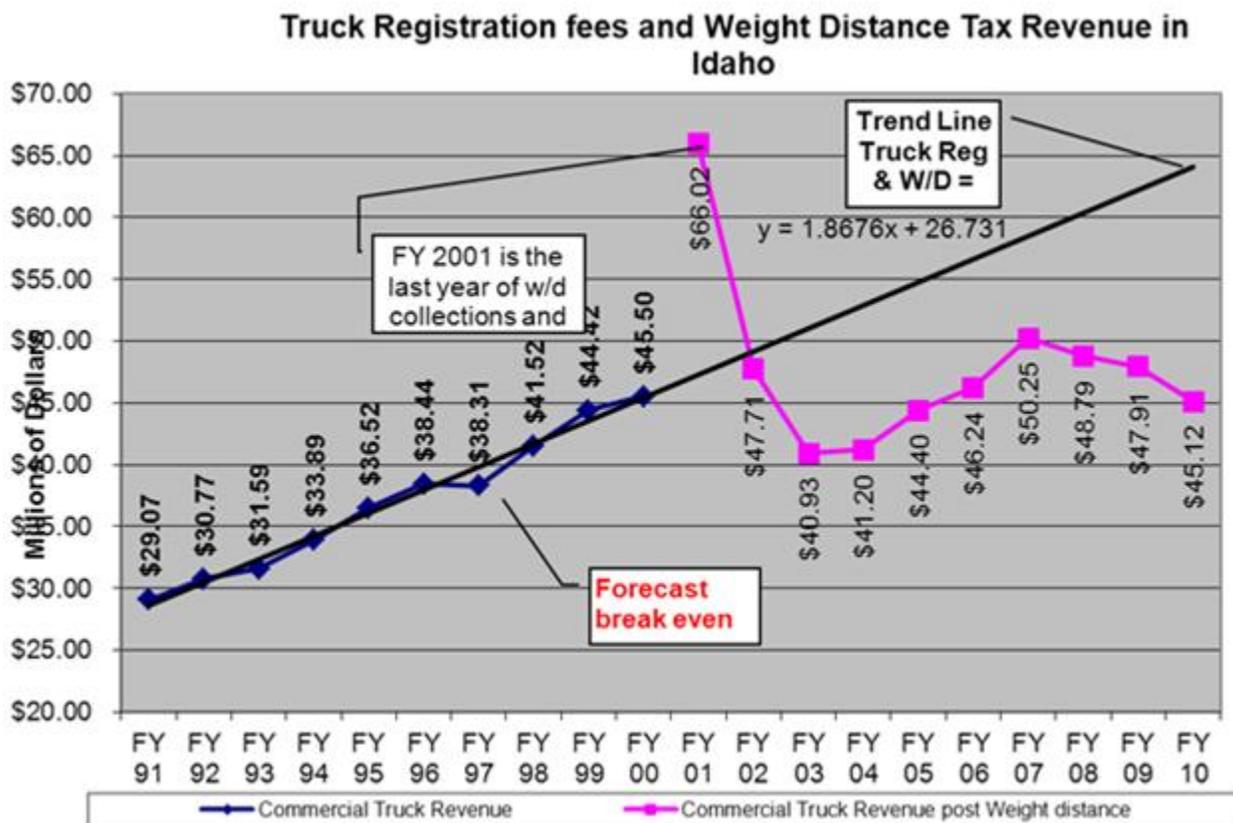
Figure 4 shows an economic forecast model comparing revenue under Idaho’s weight-distance tax and the registration-based system currently in place.¹⁹ The black trend line and equation represent the economic forecast, which used Idaho’s gross state product to predict the

¹⁹ Benzon, Doug. 2011. “Truck Registration Fees and Weight-Distance Tax in Idaho.” IDT.

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weight-distance tax revenue. Actual revenue is plotted using blue diamonds for the weight-distance tax and pink squares for the registration-based system currently in place. Weight-distance tax revenue steadily increased from FY 1991 to FY 2000, when the program was ended. The spike in FY 2001 to \$66.02 million is due to the simultaneous collection of the last weight-distance tax dues and the beginning of the fee-based system. Shortly after its implementation, revenue declined sharply from \$47.71 in FY 2002 to \$40.93 million in FY 2003. The revenue increased steadily through FY 2007, but began decreasing again in FY 2008.

Figure 4. Economic Forecast Model for Weight-Distance Tax and Truck Registration Fees



The model does a good job of predicting weight-distance tax revenues, as the data points closely hug the trend line. The estimates are generally within one to two percent of the actual revenues. Given the accuracy of the model with respect to the weight-distance tax, it is a safe surmise that the trend line closely represents state revenue had the weight-distance tax program been allowed to continue. As such, the elimination of the tax and the implementation of the new, fee-based system cost the ITD roughly \$10 million in lost revenue per year since FY 2003. As of FY 2010, this figure appears to be approaching \$20 million per year. Given the policy was intended to be a revenue-neutral solution to the weight-distance tax issue, this has been considered a disappointing result by ITD officials.

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In 2004, the National Institute for Advanced Transportation Technology at the University of Idaho (NIATT) completed a study of the new fee-based system. The study provided an in-depth look at the impact of Idaho's fee-based system for commercial carriers.²⁰ The study found the switch to the new system caused a steep revenue decline – a decline that cannot be explained by fluctuations in the state economy. Overall, local motor carriers paying the full apportionment were disproportionately burdened relative to carriers utilizing IRP registrations. Despite the general revenue decline, the amount of money collected from in-state carriers actually increased. Between FY 1999 and FY 2003, Idaho-based revenue increased from \$14.3 to \$17.9 million (a 25.2 percent increase), while out-of-state carrier revenue decreased from \$29.2 to \$20.9 million (a 28.2 percent decrease). Despite an increase in overall revenue from Idaho-based carriers, in-state registrations of vehicles 60,000 lbs. and up actually declined by 18 percent. The change also impacted certain interstate carriers more than others. The cost to firms with low mileage and high apportionment were disproportionately greater than firms with high mileage and low apportionment (see Table 15). As trucks in both weight classes are driven more miles, the per-mile cost decreases. This explains the reduction in the number of registrations and the increased mileage on registered vehicles.

Table 15. Cost Per Ton Mile for Old and New Registration System²¹

Weight Class	80,000 GVW		106,000 GVW	
	12,000 Miles (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

Evasion

According to the NIATT study, the new fee system provides structural incentives for evasion as well. Consider the decision of a motor carrier filing a return on a truck with a GVW of 80,001 and 7,501 logged miles. A fraudulent tax return of 7,500 miles means a bill of \$494, which comes to roughly 6.59 cents per mile; however, a report of 7,501 yields a bill of \$1,442, or

²⁰ Casavant and Jessup, 2004.

²¹ Ibid. The methodology is not exactly the same as that used in the mileage table reported in Table 15.

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19.22 cents a mile. Therefore, the incentive for carriers to file fraudulent tax returns as their vehicles approach mileage category thresholds is quite significant.²²

The change in the registration system has also spurred an increase in the number of trip permits in FY 2003 after a two-year decline. Recent legislation has made permits more attractive due to an increase in hours (96 to 120) and only a modest increase in price (an increase from \$25 to \$30 for a single truck and from \$50 to \$60 for a combination unit). This approach will save some motor carriers lots of money, particularly those whose business is only occasional or seasonal. The study also noted a slight decrease in enforcement effort around the state, which potentially compounds the incentives for motor carriers to be non-compliant, particularly for those carriers that were disparately affected by the changing rate structure. If these adversely affected carriers realize the chances of getting cited are decreasing, more of them may decide evasion is worth the risk. This would theoretically lead to an increased evasion rate, although the study provided no specific estimates.

Other Issues

The NIATT study included an economic impact model by other researchers which examined whether the new registration system impacted competition, both modally and industrially. The study, which examined modal competition for wheat movements out of Idaho, found no change in competition. No change in the competitiveness of Idaho's wheat industry relative to its competitors was identified, either. Analysis by the authors of particular Idaho industries and their economic fortunes was inconclusive.²³

There are issues with data collection under the new system. The NIATT study found the new system of registration did not provide policymakers with as much detail about the commercial vehicles moving about the state as the weight-distance tax system.

Another problem documented in the study is that the new registration system does not incorporate any measure of highway impact/damage relationships. Most assessments of highway damage use the equivalent standard axle load, or ESAL, to determine the amount of damage done by an axle load. Typically the ESAL or load equivalency factor is calculated to relate various axle combinations to a standard single axle load, which is 18,000 lbs. The equation is as follows:

$$ESAL = \left(\frac{AXLE}{18,000} \right)^4$$

This equation makes several assumptions. The calculation may need to be adjusted based on the pavement type (flexible or rigid) and the pavement structure (there are assigned structural numbers for flexible pavements and slab depth is used for rigid pavement types), but the fourth power generalization emphasizes an important reality: the relationship between vehicle axle load

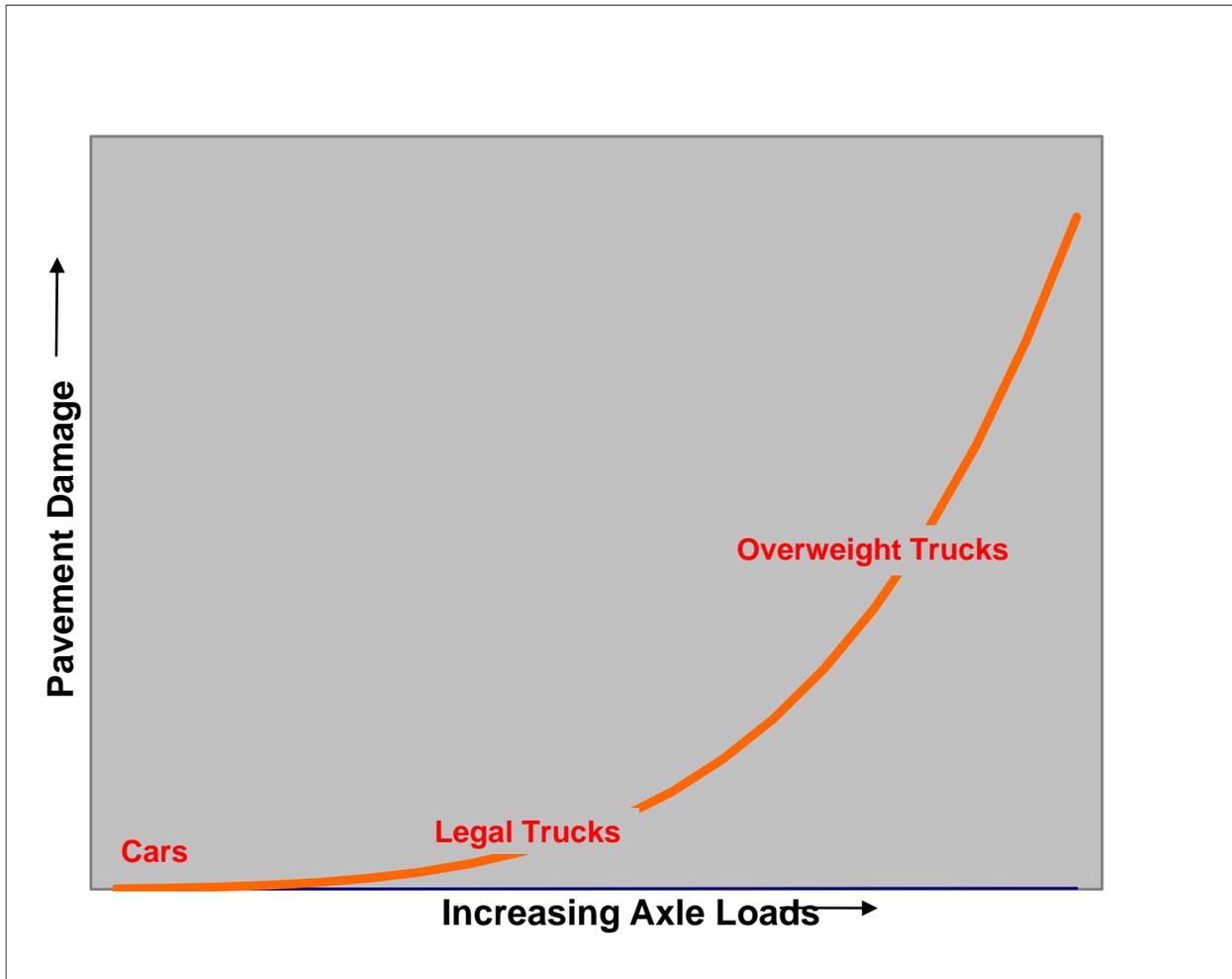
²² Ibid.

²³ Ibid.

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and road damage is exponential, and not linear, in nature.²⁴ The NIATT study of the Idaho truck registration system notes the fee table increases for trucks with heavier gross vehicle weights are linear when they should be exponential.

Figure 5. Relationship Between Axle Loads and Pavement Damage



Summary Findings

In sum, the NIATT encourages the ITD and the Idaho Legislature to re-evaluate the fee-based system for commercial vehicles in Idaho on the grounds that it competitively disadvantages local, full-fee paying carriers in relation to IRP registrants, advantages high-mileage carriers, provides incentives for evasion and does not take the pavement impact (or damage) relationship into consideration.²⁵

²⁴ Pavement Interactive. 15 August 2007. "Equivalent Single Axle Load." Accessed 15 February 2012 at: <http://www.pavementinteractive.org/article/equivalent-single-axle-load/>

²⁵ Casavant and Jessup, 2004.

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Kentucky

Background

In 1999, the Kentucky Motor Transport Association (KMTA) began lobbying the Kentucky General Assembly to make changes to the motor carrier revenue structure in the state. The original version of the bill (HCR8), which was written by KMTA lobbyists and sponsored by various members in the Kentucky House and Senate, contained the following provisions:

Section 1: Exempt from use taxes all motor vehicles having declared gross weight greater than 55,000 lbs.

Section 2: Require use tax to be paid on such vehicles if registration is changed to a lesser weight classification.

Section 3: Eliminate weight-distance tax.

Section 4: Increase pump tax \$0.03 on special fuels by eliminating the difference between gasoline and special fuel in the supplemental highway user tax.

Section 5: Increase by 126 percent registration fees on trucks weighing over 55,000 lbs.

Section 1 refers to the vehicle annualized sales or usage tax, which is assessed on the sale of motor vehicles in Kentucky. KRS 138.460 levies a vehicle usage tax of 6 percent on all motor vehicles except those exempted by KRS 138.470. This tax is collected by the county clerk for initial titling and registration, and upon transfer of title or registration of a vehicle previously titled or registered in the state. A tax is also assessed on the sale of parts. As of 1997, Kentucky had a higher usage tax than any bordering state. In fact, all states bordering Kentucky exempted motor carriers from this tax at the time except Virginia, and Virginia's tax rate was lower than Kentucky's. As a result, many carriers were registering vehicles in other states. According to data provided by the KMTA at the time, 5,816 truck units owned by Kentucky companies were registered in other states in order to avoid the usage tax. The KMTA proposal dubbed the tax a "self-repealing tax," asserting that motor carriers would eventually transfer enough vehicle registrations to render the tax ineffective, and the tax would provide a disincentive for motor carriers to set up operations in Kentucky. Ultimately, this would cost Kentucky lost tax revenue that could be garnered from sources other than the vehicle usage tax, and prevent those jobs from coming to the state.

In 2001, the KMTA found a sponsor for a bill to repeal the usage tax. However, the General Assembly decided to table the issue until the Interim Joint Committee on Appropriations and Revenue "could conduct a study of the weight-distance tax and the usage tax on motor carriers, and options for replacing lost revenue if the taxes are eliminated or modified." After a couple of years, the General Assembly took action. In the 2003 general session, the legislature passed HB 293, which authorized changes in the existing tax code. Commercial motor vehicles "owned by nonresident owners and used primarily in interstate commerce and based in a state

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other than Kentucky which are required to be registered in Kentucky by reason of operational requirements or fleet proration agreements and are registered pursuant to KRS 186.145” were exempt from the usage tax.

Section 2 suggested the usage tax be required in instances where trucks initially register at a gross vehicle weight and subsequently change the registration to a lower gross vehicle rate. This requirement was kept, but the law was expanded to include all vehicles initially registered at 44,001 lbs. or greater and the usage tax requirement applies to those vehicles subsequently registered at 44,000 lbs. or less per KRS 138.470.

Section 3 called for the elimination of the weight-distance tax, which assesses a tax of \$0.0285 per mile on motor vehicles with a combined license weight in excess of 59,999 lbs. per KRS 138.660. At the time of the proposal, this program brought in about \$70 million per year. During the last five fiscal years, the KYU program’s mean revenue totaled \$77.94 million. Revenue was approximately \$85 million for 2007 and 2008, but declined starting in 2009, likely due to recessionary effects. This tax was subject to the review ordered by the Interim Joint Committee on Appropriations and Revenue review, but there were difficulties formulating a policy that could effectively recover the lost revenue. Furthermore, any change in tax policy, even if revenue-neutral in nature, will create sets of winners and losers. Some groups (especially high mileage, low apportionment carriers) will pay fewer taxes, and other groups will pay more taxes. See Chapter 3.

Section 4 suggested the first component for recovering the lost revenue be an increase in the special fuels, or diesel, tax. There was and is a three-cent difference in the fuel tax for gasoline and special fuels. As noted earlier, the tax on the wholesale price of gasoline is 26.4 cents per gallon for gasoline and 23.4 cents per gallon for special fuels. If the same proposal were enacted today, it would increase the special fuels tax to 26.4 cents per gallon to match the gasoline tax. In the initial lobbying materials provided by KMTA, the higher special fuels tax rate was projected to increase fuel tax revenues by approximately \$21 million annually.

Section 5 proposes an increase on registration fees for trucks weighing more than 55,000 lbs. This section specifically refers to the International Registration Plan (IRP) registration fees for large trucks. Kentucky offers three plates for trucks with a licensed weight of more than 55,000 lbs.: 62,000; 73,280; and 80,000. The KMTA proposal would have plate fees go up by 126 percent on those three plates to offset lost revenue from the elimination of the weight-distance tax. Table 16 demonstrates the difference between current plate fees and the proposed fees under the original KMTA proposal. The increase would significantly change Kentucky’s fee structure for trucks with high levels of gross weight, with the top plate going from just under \$1,500 to more than \$3,000. Carriers registered with IRP do not generally pay an entire plate fee for a given state, as the registration is apportioned based on the number of miles logged in a given state. For example, a motor carrier operating a truck with a licensed weight of 80,000 lbs. and logging 50 percent of its miles in Kentucky would pay \$705 under the current fee structure.

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Table 16. Kentucky IRP Plate Fees and Proposed KMTA Changes

Licensed Weight	Annual Plate Fee (Current)	Annual Plate Fee (Proposed)
62,000	\$1,007.00	\$2,275.82
73,280	\$1,250.00	\$2,825.00
80,000	\$1,410.00	\$3,186.60

The plate increases would bring in more revenue, but may also encourage underreporting of mileage for trucks registered in Kentucky or paying apportioned fees to Kentucky from other jurisdictions. Right now, Kentucky’s plate fee is the second-highest of the eight-state region that includes Kentucky and all of its bordering states. Illinois has the highest plate fee, and its fee is so high that it is effectively an outlier. The mean for the seven states other than Illinois is \$1,225.05, meaning Kentucky’s plate is already slightly above the region mean. Increasing the plate fee to \$3,186.60 would make Kentucky’s fee nearly as high as in Illinois.

Table 17. IRP Plate Fees in Kentucky and Surrounding States

State	Plate Fee (Weight 80,000 lbs.)
Kentucky	\$1,410.00
Missouri	\$1,050.50
Illinois	\$3,191.00
Indiana	\$956.00
Ohio	\$1,340.00
Virginia	\$1,321.60
West Virginia	\$1,131.25
Tennessee	\$1,366.00

According to the KMTA study, increasing the Kentucky plate fees (as of 1999) by 126 percent would have yielded an additional \$49 million in increased revenue. This, combined with the \$21 million gleaned from the increased special fuels tax is projected to make up for the lost weight-distance tax revenue. Increasing the plate fees may bring in more revenue, but a significant increase like the one proposed by the KMTA study also increases the incentives for motor carriers to underreport the number of miles logged in Kentucky, or discontinue registering trucks in this jurisdiction. Instead, these carriers may claim miles in other jurisdictions to avoid paying such a high plate fee. Increased rates could be offset by declining registration and claimed mileage. Ultimately, the rest of the proposed legislation never passed, in large part because Section 4’s increase on diesel fuel taxes would have hit local school districts especially hard, given the amount of fuel needed to run school buses.

Ohio

In 1990, Ohio’s state legislature repealed its 37-year-old weight-distance tax (referred to as the highway use tax) in House Bill 381, effective January 1, 1991. The bill replaced the

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weight-distance tax with a surtax of three cents per gallon. This surtax was in addition to the base motor vehicle fuel tax rate, which was 20 cents at the time of passage. The surtax applies “to fuel used on Ohio highways by tractor-trailer combinations, trucks with three axles or more, and two-axle trucks with a gross vehicle weight or a registered gross vehicle weight over 26,000 lbs. Taxpayers pay surtax on the amount by which the fuel consumed in Ohio exceeds the fuel purchased in Ohio.”²⁶ Vehicles owned and operated by the federal government, state government or any political subdivisions within the state were not technically subject to the surtax; there was a refund process for the surtax in place via a voucher system. The voucher program included school buses, which are the largest consumer of fuel among publicly owned vehicles. Eventually, the surtax was gradually phased out and the revenue replaced by increasing the motor fuel vehicle use tax. This was achieved via House Bill 87, passed in 2003 by Ohio’s state legislature. The bill increased the fuel use tax three times: from 22 to 24 cents per gallon in 2003, from 24 to 26 cents per gallon in 2004, and from 26 to 28 cents per gallon in 2005. Each time the fuel tax was increased two cents, the surtax was lowered by one cent until being eliminated entirely in 2005. Table 18 shows the revenue generated from the motor vehicle use tax. The revenue has dropped significantly since 2007, for reasons that are unknown. Certainly economic factors have played a role. It is unknown whether other causes played a part.

Table 18. Ohio Motor Vehicle Fuel Use Tax Revenue (2007-2011)

Fiscal Year	Total
2007	\$55.2
2008	\$34.8
2009	\$29.8
2010	\$38.1
2011	\$35.7

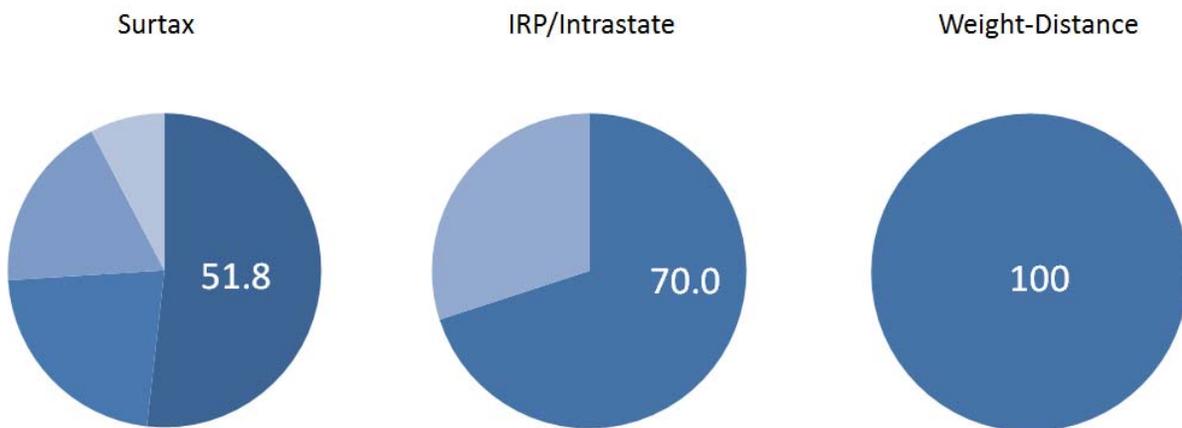
²⁶ Ohio Department of Taxation. 2011. “2011 Brief Summary of Ohio’s Taxes.” Accessed August 2012 at: <http://www.tax.ohio.gov/portals/0/communications/briefsummary.pdf>

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CHAPTER 3. TAX PROJECTIONS AND POLICY EFFECTS

This chapter will provide revenue projections for the weight-distance tax and IRP registration fees for FY 2012-2020. Intrastate estimations will be provided in some instances. The revenues are projected using simple regression-based forecasting models. It should be noted all forecasting models contain basic assumptions that may or may not play out. Economic performance in Kentucky and nationally will greatly affect the actual revenue each program generates. If any of the basic assumptions detailed in these models is violated, the actual revenues could differ significantly from those projected.

Figure 6. Percentage of Program Revenues to Road Fund and FY 2011 Revenues



Tax/Fee	Total Millions (\$)	Road Fund Millions (\$)	% of 4-program Road Fund deposits
Intrastate Plates	7.95	5.57	4
IRP Plates	53.37	34.37	26
Surtax	53.34	27.63	19
W-D	73.98	73.98	51
Total	188.64	144.54	100

Assumptions built into each model will be detailed in the analysis. One important point to keep in mind as one thinks about projections is the differential impact changes to each program has on Road Fund revenue. As noted in Figure 6, roughly 51.8 percent of fuel surtax revenue, exactly 70 percent of IRP/Intrastate truck registration revenue and 100 percent of the weight-distance tax revenue goes to the Road Fund. Therefore, eliminating the weight-distance tax will require statutory changes that modify the allocation formulas for these other taxes in order for all

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of the increased IRP/intrastate plate revenue to go to the Road Fund. Given the lack of interest in further increasing the surtax in the current political environment, as it is indexed to the wholesale price of gas, the IRP/intrastate plate registration is the best candidate to replace lost weight-distance tax revenue.

In FY 2011, a slight majority of Road Fund revenue from these four programs (51 percent) come from the weight-distance tax. This is down slightly from the FY 1996 share, which was nearly 60 percent. Weight-distance tax revenues actually dropped in three consecutive budget cycles from FY 2008-2010 before beginning to rebound. The rate of growth for weight-distance tax revenue was much higher during the 1990s and early 2000s than it has been during the last six fiscal years on record. The next-largest share comes from IRP registrations, which have remained somewhat steady between FY 1996 and FY 2011, partially due to the 2003 IRP rate increase for Kentucky. The fuel surtax comprised just 11 percent of this four-program total in FY 1996, but has increased significantly because the tax is indexed to changes in the wholesale price of gasoline and diesel fuels. It now provides about 19 percent of the total Road Fund revenue contributed by these tax and registration programs. Intrastate registration data records do not go back to 1996, but based on some simple extrapolation it is concluded that its share of the revenues have probably remained roughly proportional to its IRP, or interstate, counterpart. The FY 2011 figure is four percent.

Weight-Distance Tax Revenue Projections

There are several ways to think about how to estimate the revenues for the weight-distance tax program. At a most basic level, economic forecasting models take the revenue data and estimate an annual rate of revenue increase using a bivariate regression model (one independent variable, one dependent variable). The independent variable is the year or fiscal year, and the dependent variable is the amount of revenue generated from the analyzed program. This approach has some limitations. First, it does not take into account the full range of potential influences on revenue. State economic conditions, national economic conditions, policy changes, regulatory changes, enforcement changes and other gradual changes specific to a program could impact the amount of revenue collected. Second, these models generally assume that revenues will increase at a constant rate without accounting for the up-and-down increases and decreases which typically accompany economic cycles. Program managers know from experience that when the economy enters a recession tax revenues generally decline. As such, there is no way for one to adjust such forecasting predictions in a way that would make it possible to account for declining revenues. Therefore, an economic indicator will be added to the weight-distance tax model to allow for projections to change in response to changes in economic performance. For the weight-distance tax projection, the U.S. trucking industry's estimated gross domestic product (GDP) is used. This measure was used as an independent variable, along with the year, to model weight-distance tax revenues for FY 1997-2010; it comes from the Bureau of Economic Analysis.

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Table 19. Weight Distance Tax Regression Results

Variable	Coefficient	Std. Error	T Score	P Value	95% Confidence Interval	
Truck GDP	.683	.109	6.29	0.000	.444	.922
Year	-1082.312	383.345	-2.82	0.017	-1926.048	-238.576
Constant	2172044	757936.3	2.87	0.015	503837.2	3840250
<i>N=14</i>	F-Test=35.66		Prob > F = 0.000		R ² =.866	

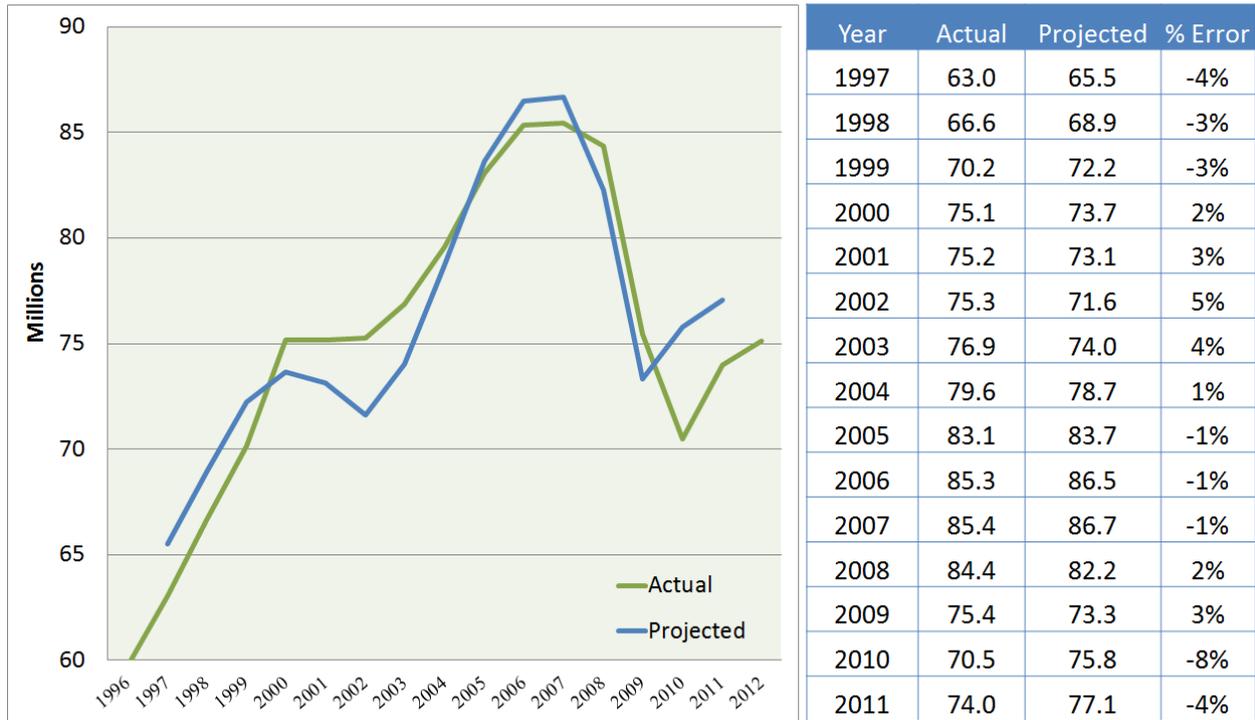
Table 19 shows the results of the weight-distance tax regression model. The dependent variable is weight-distance tax revenue, which was scaled in thousands of dollars to make interpretation of the coefficients more straightforward. Trucking industry GDP was scaled in millions of dollars. The model shows a positive, statistically significant relationship between trucking industry GDP and weight-distance tax revenue (as indicated by the *t* score and *p* value). The interpretation is pretty intuitive – as the GDP of the trucking industry improves nationally, so does weight-distance tax revenue. Although the BEA estimates this variable for the state of Kentucky, the model shown, which uses the national measure, outperformed an alternative model specification employing the state-based measure. This is probably due to the fact that out-of-state carriers also pay the tax, making a national measure a better estimator. The model also shows a negative, statistically significant relationship between year and weight-distance tax revenue. The regression equation is as follows:

$$Y_i = .6827933(US\ Trucking\ GDP) + -1082.312(Year) + 2172044(Constant)$$

Using this equation, it is possible to derive revenue estimates for each fiscal year in the sample. One simply has to plug in the numbers for all variables in each fiscal year and compare the estimates produced by the equation with actual revenue. As Figure 7 shows, the model comes quite close to estimating the weight-distance tax revenue, with an error of five percent or less for all years except 2010, which was unquestionably impacted by the financial crisis of 2008 and the subsequent recession. The 2011 projection is based on the equation from the FY 1997-2010 data, because the U.S. trucking GDP measures for FY 2011 were not available at the time of analysis. For the period of 1997-2011, the cumulative difference between the projected revenue and actual revenue was just \$3.1 million – so the model slightly overestimated revenue for the entire period.

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Figure 7. Weight-Distance Tax Model, Actual vs. Projected (FY 1996-2011), Millions



The model equation can also be used to make projections of future revenues for Kentucky’s weight-distance tax program. Without having data indicating future national trucking GDP numbers, it is possible to create projections by making simple assumptions about the rate of growth over a certain period of time. Figure 8 shows projected revenues for the weight-distance tax program under three different estimated annual growth rates in national trucking industry GDP – three percent, two percent and one percent, respectively. These projections assume growth will occur at a constant rate – which is unlikely, yet a relatively straightforward way to estimate revenues given that no one knows how the economy will perform over the next eight years. The three percent metric is possibly an optimistic measure, although the Congressional Budget Office projects a similar rate of growth in the U.S. economy between 2012 and 2022.²⁷ This is roughly the rate of annual trucking industry growth over the period of time for which there is data (1997-2010). A more conservative growth rate of one or two percent may be more accurate due to unforeseen circumstances. Interestingly, the revenue projections actually decrease if national trucking GDP growth is held to one percent annually. This is due to the effect of the year coefficient in the model, which trends negative over time. It could be there are other factors not included in the model which explain lower weight-distance tax revenue trends over time.

²⁷ Congressional Budget Office. August 2012. An Update to the Budget and Economic Outlook: Fiscal Years 2012 to 2022.” Accessed 4 December 2012 at: http://www.cbo.gov/sites/default/files/cbofiles/attachments/08-22-2012-Update_to_Outlook.pdf.

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Figure 8. Projected Revenue for Weight-Distance Tax Based on Different Growth Models



IRP Registration Fees Revenue Projections

IRP registration fees are much more difficult to estimate or forecast for a variety of reasons. First, IRP fees are exactly that – fees, not taxes. Fees are flat rates which must be paid in full, whereas a weight-distance tax is more reflective of motor carrier activity because it is indexed to reported miles traveled on Kentucky highways and roads. The other complicating factor is the manner in which IRP funds are transferred between member jurisdictions. Fees are apportioned for each motor carrier in accordance with the percentage of miles traveled in each member jurisdiction. Rather than require carriers to figure this out and pay registration fees to each jurisdiction in which they travel, the base jurisdiction collects all fees and transmits them to the other appropriate jurisdictions based on the carriers’ IRP filing. This makes predicting revenue flows difficult because revenue is derived from several jurisdictions. Changes to accounting practices, journal vouchers, and changes to plate fees can also impact registration or mileage numbers for other states. The registration fees seem to be less responsive to changes in economic variables than weight-distance taxes. Specifications of the model with various economic variables (U.S. trucking GDP, U.S. trucking and warehousing GDP, Kentucky trucking GDP, Kentucky trucking and warehousing GDP) did not perform as well as a simple model where the only independent variable was the fiscal year, nor did the model accounting for the change in plate fees that occurred in FY 2004. Therefore, the model used here is a bivariate regression model, with revenue as the dependent variable and the corresponding fiscal year as the independent variable. As such, the assumption built into the model is that revenue will

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increase continuously, and that rate of increase will be constant. These assumptions will be reflected in the revenue estimates generated from the regression equation.

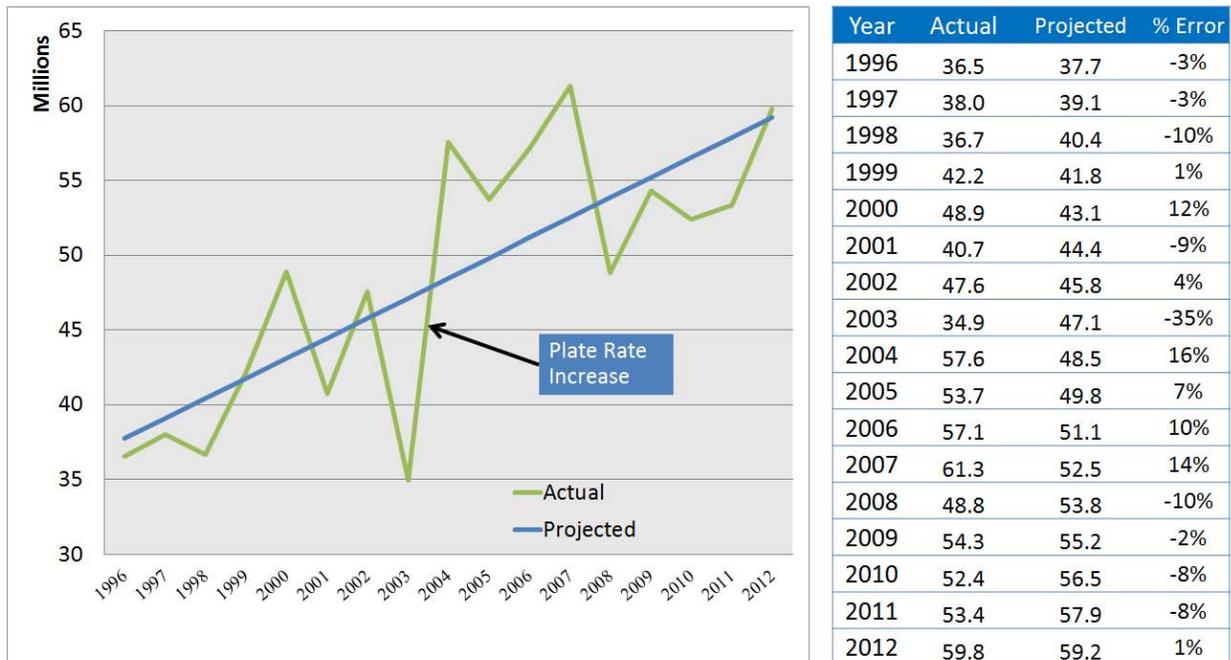
Table 20. IRP Regression Results

Variable	Coefficient	Std. Error	T Score	P Value	95% Confidence Interval	
Year	1342.461	282.9782	4.74	0.000	739.3077	1945.615
Constant	-2641826	826493.9	-4.66	0.000	-3850550	-1433103
<i>N</i> =17	F-Test=22.51		Prob > F = 0.0003		R ² =.600	

Equation: $Y_i = 1342.461 (Year) + -2641826 (Constant)$

Table 20 shows the results of the IRP regression model and the accompanying regression equation. The dependent variable is IRP revenue, which was scaled to thousands of dollars in order to make interpretation of the model more straightforward. The model shows a positive, statistically significant relationship between fiscal year and IRP revenue (as indicated by the *t* score and *p* value). There is 17 years' worth of data in this model, because there is budget data running from FY 1996-FY 2012, and no independent variable whose data limits the number of observations, as with the weight-distance tax model. The interpretation is that revenues have generally gone up from year to year. However, this interpretation does not appear to be as straightforward when examining a plot of actual revenue figures against the model projection. Figure 9 shows annual IRP revenue plotted against the regression equation function. Rather than increase in a monotonic linear fashion, the revenue tends to ebb and flow.

Figure 9. IRP Model: Actual vs. Projected Revenue(FY 1996-2012), Millions



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There are a variety of potential explanations. The largest jump, seen between FY 2003 and 2004, was due in part to a plate increase on Kentucky commercial vehicle plates. For example, the full plate price for a vehicle with a gross registered weight of 80,000 lbs. went from \$1,260 to \$1,410 – an 11.9 percent increase. There are other potential reasons for year-to-year variation in IRP revenue figures. Journal vouchers, which are periodically used to correct for accounting problems uncovered in the IRP accounting system, have altered balances to make annual changes appear larger than is normal. These issues have been addressed, but the end result was that revenue is sometimes shuffled around to different fiscal years, which makes IRP revenues look more volatile than they are in reality. Changes in the number of trucks registering for IRP programs due to economic conditions, the rising price of gas or changes in IRP apportionment can also have an effect. As shown in the final column of the chart included in Figure 9, the amount of error in the annual estimate is quite high for some years, although for more recent years the projections have been closer to the actual result. At any rate, there are additional factors driving IRP revenues not accounted for in the model. This should be taken into consideration when factoring the pros and cons of tax consolidation.

The next part of the process was to project the magnitude of increase necessary for IRP and interstate plate fees to replace lost weight-distance tax revenue. Several factors had to be taken into consideration, including: which vehicles were going to be impacted, how the IRP funds would be allocated under the new policy, historical IRP revenue, historical intrastate plate tax revenue, and the total difference between current weight-distance tax revenue and the future projected revenue for both IRP and intrastate truck registration under the proposed consolidation policy. The following assumptions were made:

- The current IRP and intrastate plate fees would need to be raised by 129 percent, or to 229 percent of current levels to make up for lost KYU (weight-distance tax revenue).

Licensed Weight	Current	Proposed
62,000	\$1,007.00	\$2,306.03
73,280	\$1,280.00	\$2,931.20
80,000	\$1,410.00	\$3,228.90

- The tax increase would only apply to trucks with licensed weights of 62,000 lbs., 73,280 lbs. and 80,000 lbs. In 2011, those trucks accounted for 92.16 percent of all trucks registered with Kentucky’s IRP program.
- The county share, while staying relatively constant in terms of actual revenue and projected growth, would become a smaller share of the overall program revenue. If the recommended increase were adopted, the allocation rates would also need to be changed by statute. The county share of IRP and intrastate revenue for these three classes of affected plates would fall from 30 percent to 13.1 percent. The county share for trucks licensed at lower weights would continue to be 30 percent.

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- Data limitations made it difficult to get more than two years of intrastate plate registration revenue. Data for FY 2009 and 2010 were the only years for which reliable data were available. Therefore, the intrastate funds were extrapolated by averaging these figures against the IRP totals for the same fiscal year, and indexing the intrastate revenue to IRP revenue as a percentage. The percentage used is 14.9 percent.
- In order to determine the difference between current revenue projections and an alternative projection, IRP and intrastate plate registration fees for trucks at 60,000 lbs. and above was multiplied by 229 percent and added together. The difference between current Road Fund revenues generated by those plates and new Road Fund revenues under the proposed registration increase should be equal to the amount of revenue currently generated by the weight-distance tax. In 2010, weight-distance tax revenue totaled \$70.5 million, while state share of IRP/intrastate plates was \$39.1 million. Under the increased fees, the new state share would have been \$111.4 million. This yields an increase of more than \$72.2 million, which would theoretically have netted the state \$1.7 million in revenue.
- The difference between projected IRP/intrastate revenue and the projected revenue under the proposed change in plate fees is compared against projected weight-distance tax revenue forecasts for FY 2013-2020. The forecast used was the weight-distance tax model that assumed annual economic growth at three percent.
- The IRP model does not take the 2003 plate increase into account, which may create an upward bias on the rate of projected revenue increase. It also does not attempt to predict other changes in behavior that may be created by changing registration fees by such a large amount. A reduction in the number of registered trucks, altered state share of total mileage and rising costs of business may depress IRP and intrastate plate revenues if the plate increase were enacted.

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Figure 10. IRP and Interstate Plate Revenue and Projections (FY 1996-FY 2020), Millions

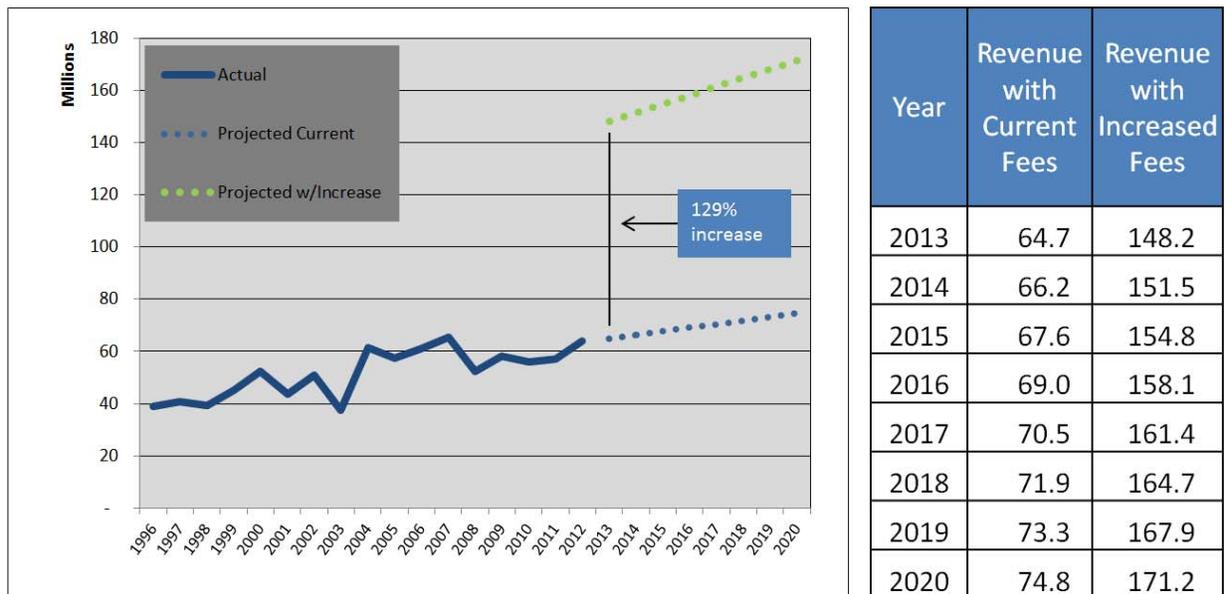


Figure 10 displays actual IRP and intrastate revenues from FY 1996-FY 2012, and two different sets of projections for future plate revenues. These revenues only consist of fees paid on registered plates for vehicles 60,000 pounds and up. The dotted blue line represents the amount of projected revenue from FY 2013-FY 2020 if the plate fees stay at their current rates. The light green dotted line shows the projected revenues if the plate fees are increased by 129 percent of current cost. The increase is projected to augment IRP/intrastate plate revenue by more than \$83 million annually during the first fiscal year following the change. It is important to note that not all additional revenue goes to the Road Fund, as it does with the weight-distance tax. In order to determine whether the IRP plate fee increases are sufficient to replace the lost revenue from the weight-distance tax, the projected amount of increase revenue to the state Road Fund had to be calculated. This was done by taking the newly projected total revenue under the increased plate fees and subtracting the anticipated county share under the existing policy, as the stated goal was to keep county road funds at current levels. The result was the adjusted Road Fund increase, which is the amount of plate fees brought in to replace the lost weight-distance tax revenue. Excluded from the analysis is IRP and intrastate plate revenue from trucks registered at 60,000 pounds or below. These trucks represent a small percentage of registered commercial vehicles and overall revenue. Furthermore, as neither the weight-distance tax nor plate increases affect these vehicles, the state should not expect any revenue impact as a result. However, overall IRP and intrastate plate revenue should be slightly higher than reported in the projections, if only because there will be additional revenues coming from those unaffected vehicle registrations.

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Figure 11. Weight-Distance Tax Revenue vs. Increased Plate Fees Revenue (FY 1996-2020)

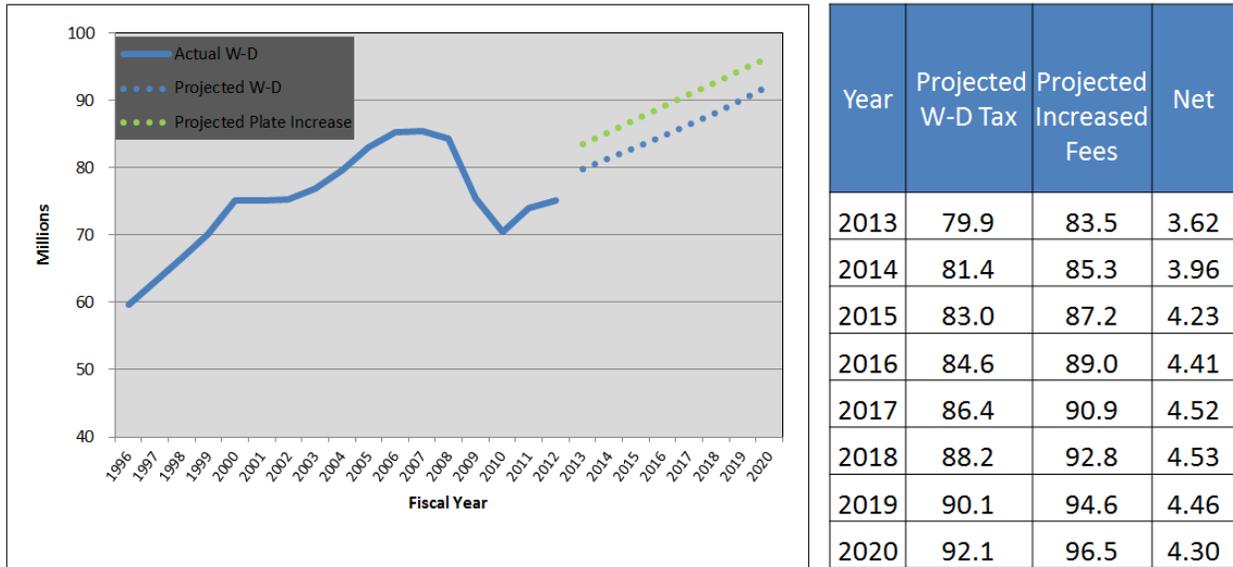


Figure 11 compares projected weight-distance tax revenues with the projected revenue generated by increasing IRP and intrastate plates over 60,000 pounds by 129 percent for FY 2013-2020. In order to provide context, weight-distance tax revenue from FY 1996-2012 is included in the graph. Given three different revenue projections were created for W-D tax in Figure 8, the research team decided to use the projection based on the assumption that the trucking industry will grow by 3 percent annually. This projection may be somewhat optimistic given current economic trends, but ensuring the consolidation policy generates enough replacement revenue to cover even optimistic projections of future revenues under current policy is added insurance against the state losing money as a result of the policy change. The chart next to the figure shows projections for weight-distance tax revenues and projected increases in plate fees going to the Road Fund. These increases in plate fees are in addition to Road Fund revenues from current plate fees. As the data show, the new policy would net the Road Fund an estimated average of \$4.25 million per year. It should be noted the projected growth for IRP and intrastate plate fees is based on the model used to forecast IRP revenue in Table 20. This is a simple forecasting model that does not use economic growth as an independent variable. Growth is only captured in the Year variable, and as such a simple linear growth trend is assumed. The weight-distance tax model does a better job of explaining variation in revenues, and has a smaller margin of error than the IRP-based projections for plate fees. From the state’s perspective, greater confidence about revenue forecasts is a valid reason to favor weight-distance taxes. To address this concern, the fee increase was adjusted upward slightly above the break-even point such that projections show net gains, which is meant to cushion against overly optimistic IRP/intrastate plate revenue projections. Specifically, initial calculations for FY 2010 showed a 126 percent increase in plate fees would have been sufficient to recover lost weight-distance tax revenue. The increase was adjusted upward to 129 percent in order to lessen the risk that the state

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would lose funds given the higher volatility of fee-based revenue streams. This is a factor for legislators to keep in mind when contemplating this policy modification.

Policy Change Impact

Given projected revenue tradeoffs between the weight-distance tax and increased plate fees are nearly even, the other key question concerns the impact of the legislation. Motor carriers would not be affected uniformly by such measures, because the varying nature of individual carrier operations greatly influences tax/fee liabilities. Depending on the number of affected vehicles one owns, the number of miles logged by those vehicles, and the percentage of miles logged in Kentucky, some carriers could have lower tax/fee bills, while others could have higher tax/fee bills. In order to assess the impact on various carriers, information on IRP and intrastate carriers of various sizes and operating tendencies was gathered and analyzed. Current weight-distance tax assessments were compared to proposed increases on IRP/intrastate registrations to see whether various carriers would find such a policy change financially beneficial or detrimental. The only carriers selected were those whose entire fleets had a registered weight of 80,000 lbs., for the purpose of simplicity. For each trucking firm, the latest available number of vehicles (or plates), total miles, and percentage of miles in Kentucky were collected as of August 2012. The “new fee” is the fee that would be assessed if the plate fees were changed. The “increase” is the difference between the current fee and the proposed increase. The weight-distance tax is calculated by multiplying the total number of Kentucky miles by .0285. “Net” is the difference between the increased IRP/intrastate plate fees and the current weight-distance tax cost. Note that differences are rounded to the nearest dollar.

Table 21. Financial Impact for IRP Carriers of Various Sizes and Operating Tendencies

Plates	Total Miles	KY Miles	% Miles	Current Fee (\$)	New Fee (\$)	Increase (\$)	W-D Tax (\$)	Net (\$)
1	23,554	448	2%	27	61	35	13	22
1	903	802	89%	1,252	2,868	1,615	23	1,593
1	100,388	8,252	8%	116	265	150	235	-86
1	111,116	109,970	99%	1,395	3,196	1,800	3,134	-1,334
4	86,715	4,392	5%	286	654	368	125	243
4	9,274	9,152	99%	5,566	12,746	7,180	261	6,919
4	312,924	41,846	13%	754	1,727	973	1,193	-220
4	233,999	211,219	90%	5,091	11,658	6,567	6,020	548
50+	5,012,246	1,154,065	23%	22,726	52,042	29,316	32,891	-3,575
50+	1,481,103	1,446,274	98%	81,234	186,025	104,792	41,219	63,573
50+	25,866,363	17,680,761	68%	73,248	167,739	94,490	503,902	-409,411
50+	9,415,646	818,313	9%	9,681	22,169	12,488	23,322	-10,834

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Table 21 shows the financial impact on 12 different IRP motor carriers. This analysis uses data from actual tax returns, so the company names have been removed to protect carrier privacy. There are few trucking firms in the state with 50 or more registered vehicles, so those exact vehicle numbers were removed as well in order to protect carrier privacy. Firms with low, medium and high mileage were selected in order to get a general idea of how replacing the weight-distance tax with increased registration fees would impact different carriers. According to the table, half of this sample would end up paying more in increased IRP fees than they currently pay in weight-distance taxes, and half would pay less in increased IRP fees than they currently pay in weight-distance taxes. The amount of extra cost to motor carriers ranges from \$22 to \$63,573. For motor carriers that would save money, the savings range from \$86 to \$409,411. The policy change clearly creates various winners and losers, but the patterns of impact suggest the following trends: Interstate carriers that log a high percentage of miles in Kentucky, or interstate carriers that run a low number of overall miles per vehicle, would generally see an increased burden; carriers that log a low percentage of miles on Kentucky roads or a high number of overall miles per vehicle would generally see a diminished burden.

Table 22. Financial Impact for Intrastate Carriers of Various Sizes

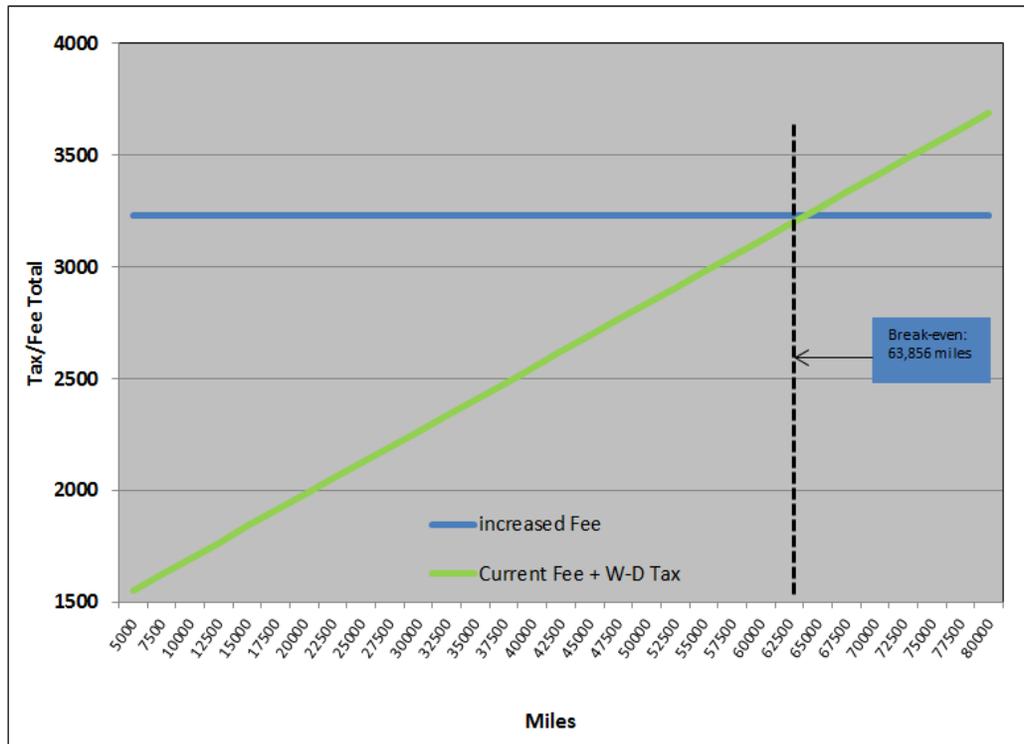
Plates	Total Miles	KY Miles	Current Fee (\$)	New Fee (\$)	Increase (\$)	W-D Tax (\$)	Net (\$)
1	77,723	77,723	1,410	3,229	1,819	2,215	-396
1	1,261	1,261	1,410	3,229	1,819	36	1,783
1	23,489	23,489	1,410	3,229	4,639	669	2,559
3	67,700	67,700	4,230	9,687	13,917	1,929	7,757
4	164,598	164,598	5,640	12,916	7,276	4,691	2,585
4	4,730	4,730	5,640	12,916	7,276	135	7,141
17	1,103,167	1,103,167	23,970	54,891	30,921	31,440	-519
22	119,694	119,694	31,020	71,036	40,016	3,411	36,605

Table 22 reports the financial impact of the proposed plate fee change on intrastate carriers. The table here is formatted the same way as the IRP table, except for the simplification of miles. All intrastate carrier miles are logged in Kentucky, so there is no need to distinguish Kentucky miles as a percentage of total miles. There are eight firms, ranging from small firms (one truck), to medium firms (four trucks) to large firms (15+ trucks). Here, the impacts are much more daunting for the motor carrier industry. Six of the eight intrastate carriers will face a greater tax/fee burden under the proposed plate increases than they currently do with the weight-distance tax. The burden appears to increase with firm size. The reason is related to the plate

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apportionment and usage of the road. In 2012, IRP carriers paid on average a 32 percent apportionment to Kentucky, meaning only 32 percent of the full plate cost is actually paid. Intrastate carriers must pay the entire cost of the plate, because all miles are logged in Kentucky.

Figure 12. Break-Even Point for Intrastate Truck (80,000 lbs.)



This is further complicated because intrastate carriers run lower mileage on the highway than most interstate carriers. An analysis of 753 intrastate carriers shows an increased tax burden on all but 28 of those carriers if one assumes all vehicles in each fleet are registered at 80,000 lbs. This is because of the lofty number of miles a truck would need to log in order to break even under the new plate fees price structure. As Figure 12 shows, a carrier's truck would need to log 63,856 miles per year for an intrastate carrier to break even on the tax/fee bill for a registered weight of 80,000 lbs. As of 2012, the average intrastate truck logs 19,805 miles – well below the break-even point. Given the uniformity of impact, the proposed consolidation policy is unlikely to be popular with intrastate carriers.

Conclusion

The study demonstrates that it is possible to devise a revenue-neutral alternative to Kentucky's weight distance tax and replace it with registration fees for trucks 60,000 lbs. and above. KYTC and the motor carrier industry could both potentially benefit without any substantial impact on the state's Road Fund revenues. Other motorists would not see any detrimental effects as a result of the changed policy. Administrative costs for the Cabinet, as well

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as industry, would be reduced. Funds spent on mileage-tracking software, supporting documentation, return preparation, vehicle inventory maintenance, and audits related to weight-distance tax would be eliminated, although other mileage-based requirements would still exist (e.g. IFTA or KIT). KYTC would no longer have to process weight-distance tax returns, develop and manage information technology applications and databases related to the weight-distance tax, or deal with other associated administrative processes. The Kentucky State Police and Commercial Vehicle Enforcement would not have to contend with weight-distance tax screening and enforcement issues, allowing officials to focus on other registration, credentialing and safety violations. Fee-based programs may have lower evasion rates than mileage-based programs, and could simplify the auditing process. All of these outcomes could result in more streamlined enforcement and better compliance, which would level the playing field for all carriers.

However, a few caveats should be noted. The forecasting models may have provided overly optimistic projections because the models do not account for the increase in IRP and intrastate plate fees that occurred in FY 2004, meaning the projected plate fee revenues are probably somewhat high. These fee-based sources of revenue are also subject to greater levels of variation from one year to the next, making it much more difficult to project revenues than it is for the weight-distance tax program. Behavioral changes in carrier operations caused by the new policy will be unknown until after implementation is complete. Carriers affected adversely should be expected to register fewer vehicles or find other loopholes in the policy. Intrastate carriers will generally see increased bills, so whatever savings they enjoy as a result of not having to comply with weight-distance tax requirements would have to outweigh the increased registration fees. New carriers would face an added challenge, because higher plate fees would require them to make a larger front-end investment. Registration fees are due at the time a vehicle is registered. IRP requirements do not allow a mechanism to space out registration payments. One advantage of the weight-distance tax is that it is not assessed until the next quarterly tax return is due. A revenue policy requiring a larger registration payment before operations can begin would put new trucking companies at a disadvantage. Perhaps most importantly, at least from the state's perspective, fee-based policies ignore the relationship between highway usage and pavement damage. A system where high-mileage carriers have a reduced financial burden and low-mileage carriers have an increased financial burden is not the most equitable policy solution. Eliminating the weight-distance tax therefore has the potential to yield a less equitable revenue system, and that revenue tends to be less reliable due to greater annual variation in collected plate fees.