



November, 2007

## **Two Years Later: Cigarette Excise Tax Increase Provides More Revenue and No Long-Term Impact on Cross-Border Sales**

### **A Study of Cigarette Prices in the Wake of Kentucky's Increase in Its Excise Tax: 2005 – 2007**

#### **Executive Summary**

KYA conducted field research to gather cigarette price data before and after the June 2005 Kentucky excise tax increase from 3 to 30 cents per pack. We sought to determine the price competitiveness of Kentucky-sold cigarettes in response to those who feared retail cigarette sales in Kentucky would be negatively affected by the tax increase. Some retailers had testified that cigarette sales would fall, which in turn would result in lost jobs and business closings.

Survey data revealed that cigarette prices within Kentucky differed significantly since the excise tax increase, suggesting that Kentucky retailers have retained significant latitude to price their products competitively.

On Kentucky's northern border where bordering states' excise taxes have continued to be significantly higher than Kentucky's, retailers have been able to increase their prices while maintaining a price advantage over Indiana and Ohio competitors. Along the southern border, the price increases reported at Kentucky retailers was much less than the excise tax increase when measured in 2006. Since then, however, retailers have been able to raise their prices significantly. In central Kentucky, the region that would seem to be most able to pass along the impact of the excise tax increase to its customers, prices have risen less than in either northern or southern Kentucky.

Further, an analysis of excise taxes collected in Kentucky for a period before and after the increase shows that the volume of cigarette carton sales in the state has remained essentially constant. Our findings make it apparent that policy-makers should not assume that increased excise taxes are automatically added to the price of all cigarettes sold, nor that they will necessarily hinder sales at border cigarette retailers.

Clearly, additional market forces are at play, allowing cigarette retailers to differentially price cigarettes to remain competitive in geographic markets. As both Indiana and Tennessee have recently enacted large increases in their cigarette excise taxes, Kentucky would appear to have the capacity to enact additional increases in its cigarette taxes without harming cigarette retailers.

## **Introduction**

In the 2005 Regular Session, the Kentucky General Assembly enacted Governor Fletcher's tax modernization plan which included an increase in the cigarette excise tax from 3 cents per pack to 30 cents per pack. This was the major funding element of the Fletcher plan, expected to generate an additional \$616 million in revenues between FY2005 and 2008.<sup>1</sup>

As the merits of the proposed increase were debated, opponents of the excise tax increase claimed that the plan would hurt small cigarette retailers – especially those along Kentucky's borders. These opponents painted a picture of cigarette sales flowing to retailers in bordering states, causing declining profits among Kentucky businesses, potentially resulting in lost jobs and store closings.

To determine the impact of the excise tax increase, KYA along with University of Louisville professor Richard Wilson conducted field research on cigarette pricing in border communities. This policy brief provides and discusses the findings of this research.

## **Cigarette Excise Tax Rates in Kentucky and Bordering States**

Prior to the increase in the Kentucky cigarette excise tax in June 2005, the state's tax rate was lower than in any border state, in fact it was the second lowest in the country. At the time the excise rate was changed, the new rate of 30 cents per pack surpassed the excise tax rates levied in Tennessee, Missouri and Virginia.

Shortly after Kentucky's tax increase, Virginia also raised its excise tax to 30 cents per pack, while Ohio, which already levied 55 cents per pack, raised its excise tax to \$1.25 per pack, the highest of any border state. Indiana and Tennessee increased their cigarette excise taxes in July 2007<sup>2</sup> – after the most recent survey period.

Table 1: Cigarette excise tax rates for Kentucky and bordering states<sup>3</sup>

State	Excise Tax per Pack		
	May 2005	October 2006	June 2007
Missouri	\$0.17	\$0.17	\$0.17
Tennessee	\$0.20	\$0.20	\$0.20 <sup>3</sup>
Virginia	\$0.20	\$0.30 <sup>1</sup>	\$0.30
<b>Kentucky</b>	<b>\$0.03</b>	<b>\$0.30<sup>2</sup></b>	<b>\$0.30</b>
West Virginia	\$0.55	\$0.55	\$0.55
Indiana	\$0.555	\$0.555	\$0.555 <sup>4</sup>
Illinois	\$0.98	\$0.98	\$0.98
Ohio	\$0.55	\$1.25	\$1.25

<sup>1</sup> tax increased July 1, 2005

<sup>2</sup> tax increased June 1, 2005

<sup>3</sup> tax increased to 62 cents effective July 1, 2007

<sup>4</sup> tax increased to 99.5 cents effective July 1, 2007

While the Tennessee excise tax has been lower than Kentucky's, it is somewhat offset by the higher sales tax rate in Tennessee, where local taxes push the 7 percent state sales tax rate to an average of 9.35 percent compared to Kentucky's 6 percent rate.<sup>4</sup> Missouri has a lower sales tax than Kentucky at 4.225 percent, but local sales taxes bring the average sales tax to 7 percent.<sup>5</sup> Sales taxes in Virginia are also lower than Kentucky's: 4 percent with an average 5 percent rate when local sales taxes are factored in. Sales taxes are applied to cigarette sales in all states.

### Review of Previous Research on Cross-Border Sales

KYA focused on cross-border sales during the 2005 legislative session and released a February 16, 2005 policy brief entitled "An Advocate's Fact Sheet on Raising Cigarette Taxes and Cross-Border Sales."<sup>6</sup> We reviewed research on tobacco tax increases including an analysis of cross-border sales in southern states and an econometric study of the Virginia tax increase.

We concluded that some portion of cross-border sales might be lost, especially initially, but that post-increase sales would probably stabilize at a level somewhat, but not precipitously lower than pre-tax increase sales. We also observed that the overall economic impact of losing cross-border sales might be offset if the increased revenues were invested in government infrastructure that generates new jobs.

## Findings

***FINDING ONE: Cigarette prices differ significantly between Kentucky's northern border, its southern border and its interior.***

As we collected the price data for Kentucky, it became apparent that changes to cigarette prices varied significantly depending on whether the seller was located along Kentucky's northern border, its southern border, or in the central part of the state. As the table below shows, the range of average prices in the three regions increased from 11 cents before the tax increase (\$2.65 to \$2.76) to 39 cents after the tax increase (\$2.72 to \$3.11). Furthermore, while prices in northern Kentucky have been consistently higher than those in central Kentucky, prices in southern Kentucky, which had been the lowest both before and immediately after the excise tax increase, are now higher than the other regions.

Table 2: Average cigarette pack prices in Kentucky by region before and after excise tax increase

<b>Kentucky Region</b>	<b>2005 Average Price (including \$0.03 excise tax)</b>	<b>2006 Average Price (including \$0.30 excise tax)</b>	<b>2005 to 2006 increase</b>	<b>2007 Average Price (including \$0.30 excise tax)</b>	<b>2005 to 2007 increase</b>
<b>Northern KY</b>	\$2.76	\$3.11	\$0.35	\$3.21	\$0.45
<b>Central KY</b>	\$2.74	\$2.98	\$0.24	\$3.08	\$0.34
<b>Southern KY</b>	\$2.65	\$2.72	\$0.07	\$3.23	\$0.58

In June 2005, the excise tax was increased by 27 cents per pack. The table above demonstrates that while average cigarette prices increased afterwards, the amount of the price increase did not strictly correlate to the excise tax increase. In northern Kentucky, prices increased by 35 cents immediately after the increase and have increased another 10 cents in the following year. In central Kentucky, the price increased by 24 cents initially which was less than the increase in the excise tax. In both northern and central Kentucky, the average price has increased an additional 10 cents between 2006 and 2007. Prices in southern Kentucky increased by only 7 cents after the excise tax went into place. Since then, however, prices have increased by 51 cents per pack.

**FINDING TWO: The average cigarette pack price in southern Kentucky and Tennessee was roughly equal before the excise tax increase. On both sides of the border, average cigarette prices increased slightly right after the excise tax increase, but have increased significantly since then.**

Comparing the average prices of cigarettes along the Kentucky-Tennessee border before and after the Kentucky excise tax increase clearly shows that factors in addition to the excise tax enter into product pricing. Despite Tennessee’s excise tax remaining constant throughout the survey period, cigarette consumers paid higher prices on both sides of the border after the Kentucky tax increase.

Initially, price increases were fairly minor – the October 2006 survey noted a 13 cent increase in the average price per pack in Tennessee and only a 7 cent increase in southern Kentucky despite the 27 cent excise tax increase. However, by June 2007, prices had increased significantly along both sides of the border. Especially notable is the increase in prices in southern Kentucky which shot up an average of 51 cents from October 2006. The effect of this price increase is that the after-tax cost of a pack of cigarettes in southern Kentucky which, in the prior two survey periods was significantly less than those observed in Tennessee, now averaged 5 cents higher than Tennessee’s.

Table 3: Comparison of southern Kentucky and Tennessee average cigarette prices

	May 2005		October 2006		June 2007	
	Southern KY	Tennessee	Southern KY	Tennessee	Southern KY	Tennessee
Average Price	\$2.65	\$2.68	\$2.72	\$2.81	\$3.23	\$3.08
Sales Tax	6.0%	9.5%	6.0%	9.5%	6.0%	9.5%
After-Tax Cost	\$2.81	\$2.93	\$2.88	\$3.08	\$3.42	\$3.37
Excise Tax	\$0.03	\$0.20	\$0.30	\$0.20	\$0.30	\$0.20
Retailer Revenue	\$2.62	\$2.48	\$2.42	\$2.61	\$2.93	\$2.88

**FINDING THREE: Northern Kentucky cigarette prices were lower than Indiana prices both before and after the state excise tax increase.**

Cigarette prices in all Kentucky regions remained lower than those surveyed in Indiana after the Kentucky excise tax increase. Prior to the excise tax increase, the average price for a pack of cigarettes in Indiana averaged 67 cents higher than those observed in northern Kentucky. In the latest survey, that range had diminished to a still sizable 33 cents.

Table 4: Comparison of northern Kentucky and Indiana average cigarette prices

	May 2005		October 2006		June 2007	
	Northern KY	Indiana	Northern KY	Indiana	Northern KY	Indiana
Average Price	\$2.76	\$3.43	\$3.11	\$3.41	\$3.21	\$3.54
Excise Tax	\$0.03	\$0.555	\$0.30	\$0.555	\$0.30	\$0.555
Retailer Revenue	\$2.73	\$2.88	\$2.81	\$2.86	\$2.91	\$2.99

***FINDING FOUR: Cigarette price differences are not explained solely by the differences in state excise tax rates.***

As shown in the table below, when the average price of cigarettes surveyed in June 2007 in the three Kentucky regions and two cross-border areas are compared, the average price by region ranged from \$2.78 to \$2.99. This calculation represents the revenue flowing to the retailer net of both excise and state taxes. As can be seen, per pack revenue excluding these taxes is 8 cents higher in Indiana than in northern Kentucky, while on the southern border, retailers in southern Kentucky enjoy 5 cents more per pack than their Tennessee counterparts.

Table 5: Comparison of Kentucky and border states' cigarette prices exclusive of excise tax

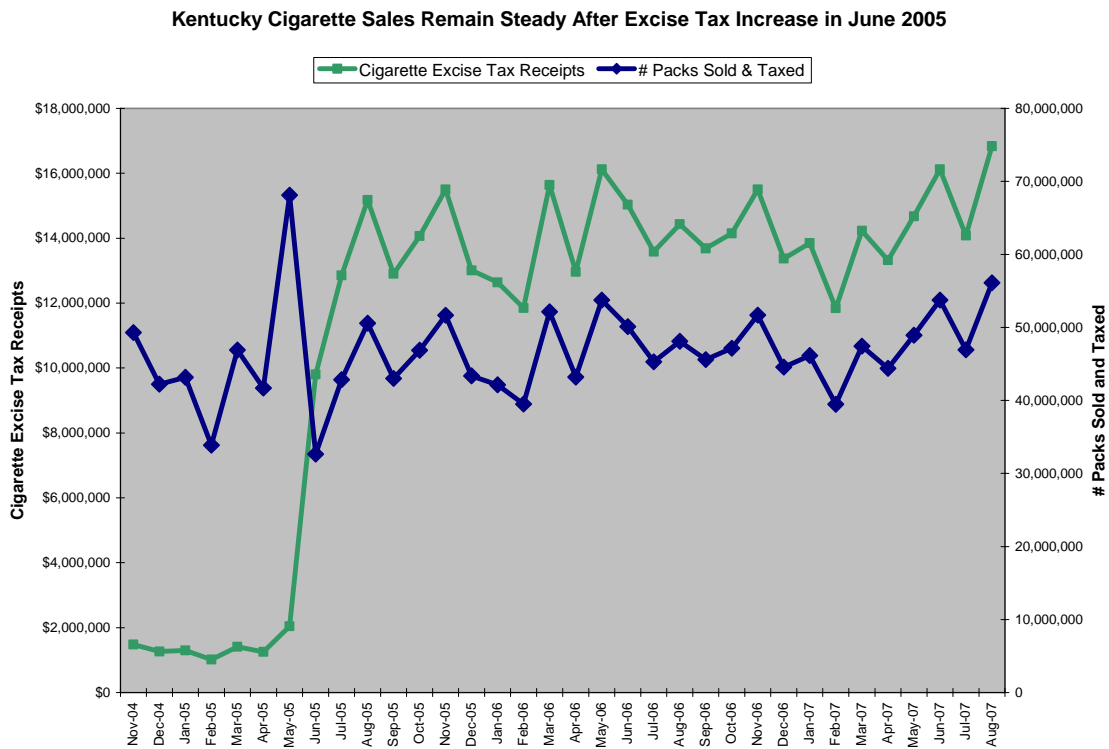
	Northern KY	Central KY	Southern KY	Indiana	Tennessee
Average Price	\$3.21	\$3.08	\$3.23	\$3.54	\$3.08
Sales Tax	6.0%	6.0%	6.0%	6.0%	9.5%
After-Tax Cost	\$3.40	\$3.26	\$3.42	\$3.75	\$3.37
Excise Tax	\$0.30	\$0.30	\$0.30	\$0.555	\$0.20
Retailer Revenue	\$2.91	\$2.78	\$2.93	\$2.99	\$2.88

What is especially interesting is the experience of cigarette prices in central Kentucky as compared to those along Kentucky's northern and southern borders. If the increase in the excise tax weakened retailers' competitive positions relative to cross-border retailers, one would expect to see prices increase more quickly in central Kentucky (with no cross-border competition) than in the border regions. In fact, as can be seen in Tables 2 and 5, the reverse is true – average prices in central Kentucky are now lower than any other surveyed region whereas before the excise tax increase, they were only a couple cents lower than prices in northern Kentucky and significantly higher than prices in southern Kentucky.

**FINDING FIVE: Overall cigarette sales across Kentucky remained steady after the excise tax increase.**

Our analysis of average price data indicates that Kentucky retailers were able to continue to price cigarettes competitively despite the excise tax increase. We also looked at tax receipts data from the Office of the State Budget Director for information on the total numbers of cigarettes sold statewide. As the chart shows, the number of cigarettes sold (as calculated by dividing the tax receipts by the tax rate) increased just before the June 2005 effective date of the increase and fell just after the increase, but have remained relatively steady since.

Chart 1: Kentucky cigarette excise tax receipts<sup>7</sup>



## Conclusion

Overall sales of cigarettes in Kentucky have remained essentially steady since the excise tax increase. The cigarette pricing data we gathered in communities on both sides of the Kentucky border indicate that Kentucky cigarette prices remain competitive along all borders. Retailers' and policy-makers' fears that raising the Kentucky excise tax would reduce sales along the state's border do not appear to have been realized.

Further, the data suggest that pricing of cigarettes is not influenced solely by changes to state excise tax rates. The hypothesis offered by opponents of the tax increase was that retailers' profits in border areas would be damaged because pressure from cross-border competitors would prevent them from passing on the full amount of the tax increase to customers.

Not only is this hypothesis unsupported by the data collected, we found the opposite to be true – prices at Kentucky retailers along its northern and southern borders actually grew more than those in the central part of the state which would be presumed to be immune from competitive pressure by Indiana and Tennessee retailers. The regional pricing data along with state tax receipt data indicate that retailers were able to make price adjustments to keep their prices sufficiently competitive to maintain the level of sales experienced before the excise tax increase.

Our data do not allow us to assess how much additional excise tax Kentucky retailers could tolerate and remain competitive. However, recent changes in the excise tax rates of two border states would make it appear that cigarette taxes could be raised again without harming cigarette retailers. Since our last survey of cigarette pricing data, Tennessee and Indiana have enacted excise tax increases of 42 cents and 44 cents respectively. This combined with the fact that Kentucky cigarette sales were not impacted by the 27 cent increase imposed by Kentucky in 2005 suggests that there is room to raise the excise tax further.

Policy-makers should not assume that increased excise taxes will necessarily result in fewer in-state cigarette sales. It appears that in the wake of the 2005 tax increase, cigarette retailers have been able to make necessary price adjustments to remain competitive.

## Study Methodology

The methodology of the current survey is straightforward. Volunteers were selected to go to locations within Kentucky and in out-of-state border communities to record cigarette prices on six major and generic cigarette brands: Marlboro, Camel, Newport, Kool, GPC, and Basic. We selected specific styles of cigarettes for each brand so that the pricing comparisons would be made on a consistent product type.<sup>8</sup>

Volunteers visited the stores and recorded prices by either observing posted prices or asking clerks for the prices. We provided the volunteers with a script that explained the purpose of the study and named Kentucky Youth Advocates as the research organization. To the extent possible in each community, we recorded prices at three distinct retail environments: 1) a gasoline station, 2) a grocery or drug store, and 3) a specialty cigarette retailer. In larger population areas (such as Louisville), we priced cigarettes at two of each of the three types of retail establishments.

The pricing data was collected in May 2005, before the tax rate increase took effect, in October 2006 and again in June 2007 (before the Tennessee and Indiana tax increases). In total, over 1,300 price points were taken at 155 establishments in 25 Kentucky communities and 22 out-of-state communities along Kentucky's borders. For the purposes of data comparability, during each survey round, all pricing data were gathered within the same week. While we gathered both carton and pack prices for all six brands we used pack price data for our analysis.

## Endnotes

---

<sup>1</sup> For further analysis of the impact of Kentucky's tax modernization package, see Herman, Tracy Goff, "Kentucky's Tax Modernization: Does it Increase the State's Risk of a Structural Deficit," Tax & Budget Brief, Kentucky Youth Advocates, May 2007: [http://www.kyyouth.org/Publications/Report\\_Structural\\_Deficit.pdf](http://www.kyyouth.org/Publications/Report_Structural_Deficit.pdf).

<sup>2</sup> These tax increases occurred after the latest round of cigarette price surveys.

<sup>3</sup> Campaign for Tobacco Free Kids, <http://www.tobaccofreekids.org/research/factsheets/pdf/0097.pdf> Accessed in 2005, 2006 and 2007 for up-to-date state tax rates.

<sup>4</sup> The Sales Tax Clearinghouse, <http://www.thestc.com/STrates.stm> Accessed February 2, 2007. Surveyors observed combined state and local sales tax rates ranging between 9.25 percent and 9.75 percent in the communities surveyed.

<sup>5</sup> Ibid.

<sup>6</sup> "An Advocate's Fact Sheet on Raising Cigarette Taxes and Cross-Border Sales", Kentucky Youth Advocates, 2005

<sup>7</sup> Monthly Tax Receipts, Office of State Budget Director, <http://www.osbd.ky.gov/publications/taxreceipts.htm> and KYA calculations.

<sup>8</sup> The specific cigarette styles reviewed in the study were Marlboro red king size boxes, Camel full flavor king size boxes, Newport full flavor king size soft packs, Kool full flavor king size soft packs, GPC generic full flavor 100s boxes and Basic generic full flavor king boxes.

---

Kentucky Youth Advocates is part of the State Fiscal Analysis Initiative, a network of state level organizations focusing on budget and tax policies through public education and the encouragement of civic engagement. Financial support for Kentucky Youth Advocates comes from the [Annie E. Casey Foundation](#), the [Open Society Institute](#) and the Stoneman Family Foundation.

The contents of this report are the sole responsibility of Kentucky Youth Advocates and do not necessarily reflect the opinions of any funder.

---

**Kentucky Youth Advocates**  
Commonwealth Business Center  
11001 Bluegrass Parkway, Suite 100  
Jeffersontown, Kentucky 40299  
(502) 895-8167  
Fax: (502) 895-8225  
<http://kyyouth.org/>

Contact:  
Tracy Goff Herman  
Deputy Director  
[therman@kyyouth.org](mailto:therman@kyyouth.org)