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Research Informing Policies & Practices
for Healthy Youth

Comparing Self-Report and Archival Cigarette Prices: Evidence from the United States and Canada

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Presenter Disclosures

Frank Chaloupka, PhD and Jidong Huang, PhD.

- (1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:**

No relationships to disclose

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Overview

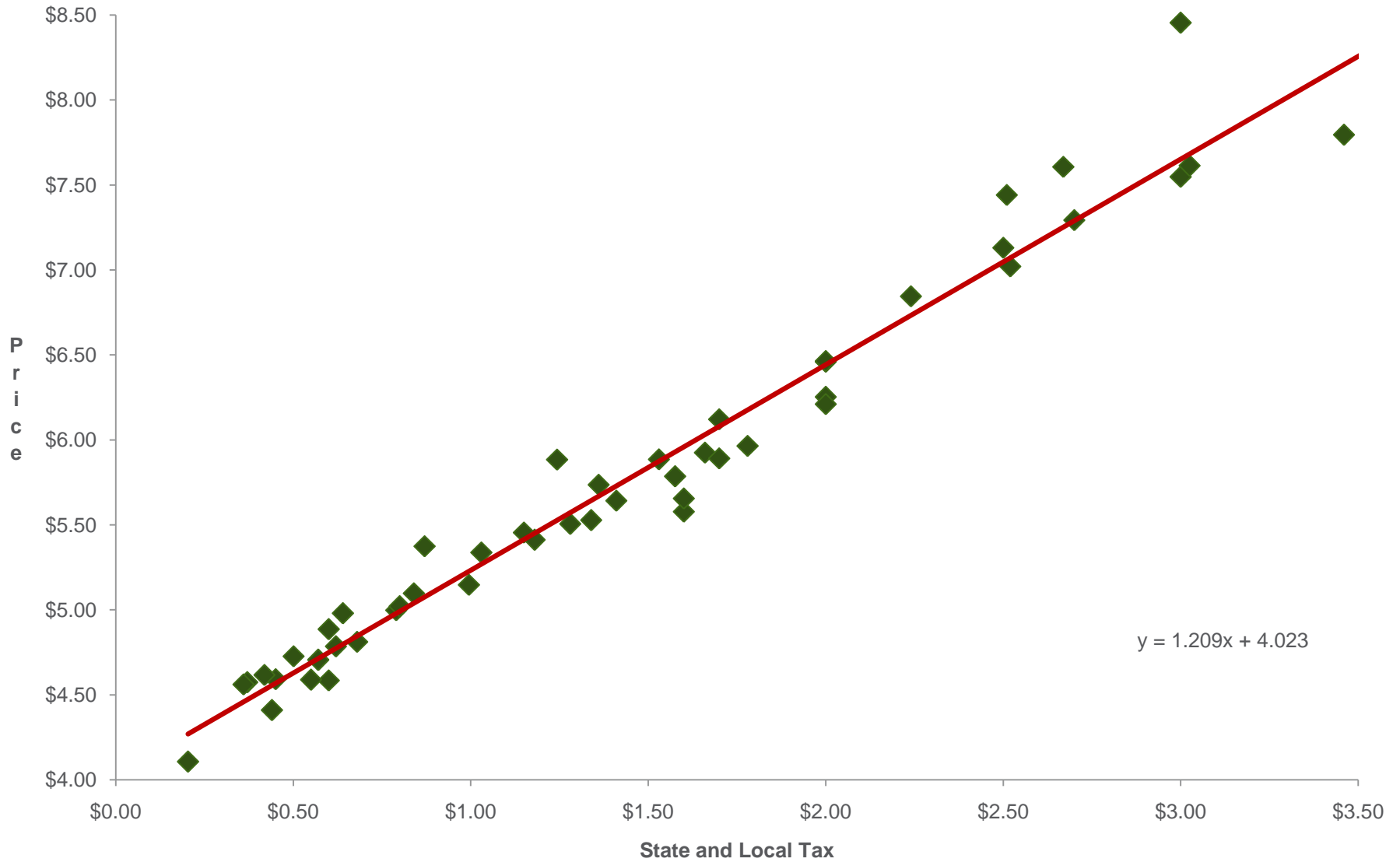
- Comparison of self-reported and archival prices for the United States
 - Tax Burden on Tobacco (TBOT)
 - Tobacco Use Supplement to the Current Population Survey (TUS-CPS)
- Comparison of self-reported and archival prices for the US and Canada
 - Official prices series
 - US – Consumer Price Index, Bureau of Labor Statistics
 - Canada - Statistics Canada, cigarette price series
 - International Tobacco Control Policy Evaluation Surveys (ITC)

Tax Burden on Tobacco vs. Tobacco Use Supplement to the Current Population Survey

US – TBOT vs. TUS-CPS

- Tax Burden on Tobacco
 - Originally produced by Tobacco Institute
 - More recently by Orzechowski & Walker
- Mail-based survey of ~16,000 cigarette retailers
 - Prices reported as of Nov. 1 each year
 - Weighted average of single pack, carton, and vending machine sales; generic and branded cigarettes
 - Include state excise tax but not sales taxes applied to cigarettes
 - Prices are list prices that do not reflect price-reducing marketing
 - Sample excludes retailers on Native American reservations
 - Prices do not reflect opportunities for tax avoidance/evasion

State and Local Cigarette Taxes and Average Price per Pack November 1, 2010



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Source: *Tax Burden on Tobacco*, 2011, and author's calculations

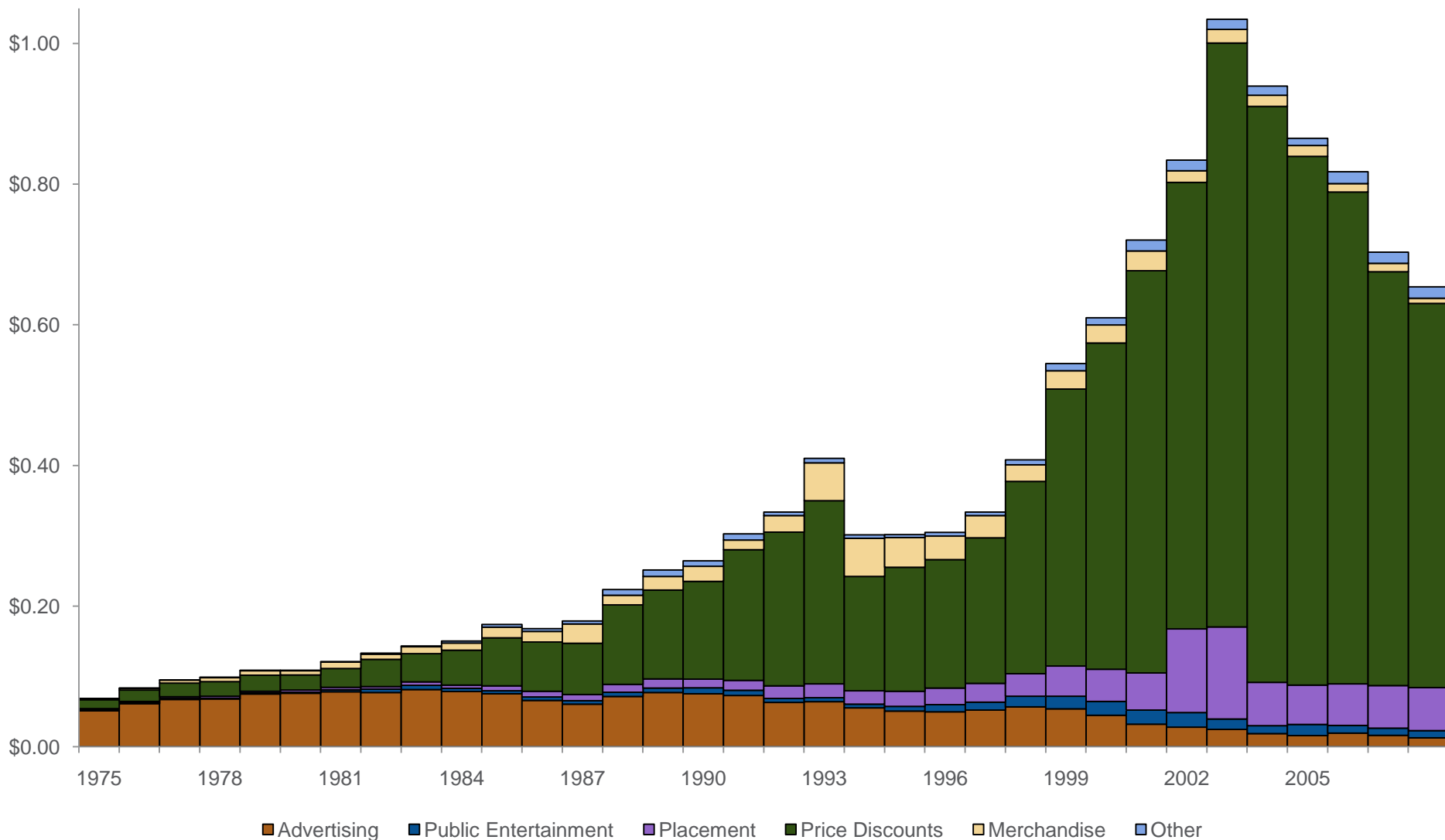
US – TBOT vs. TUS-CPS

- Tobacco Use Supplement
 - Use 2003 and 2006/07 waves
 - State representative samples
- Self-reported cigarette prices from following questions:
 - “What price did you pay for the LAST pack (carton) of cigarettes you bought? Please report the cost after using discounts or coupons.”
 - Respondents report state in which purchase was made or if purchase made through direct channels (e.g. Internet, phone, mail)
 - More recent waves identify purchases made on Native American reservations
 - Prices will reflect price-reducing marketing and tax avoidance/evasion efforts

US – TBOT vs. TUS-CPS

- Compared:
 - TBOT prices for comparable months
 - Estimated based on timing of state/federal tax changes and trend in industry (net-of-tax) prices
 - TUS self-reported prices
 - Weighted average prices based on single-pack and carton purchases reported by smokers in a given state
- Differences in prices attributable to:
 - Price reducing marketing (in TUS, not in TBOT)
 - Cross-border shopping (in TUS, not in TBOT)
 - Internet, reservation and other tax avoiding purchases (in TUS, not in TBOT)
 - Tax evasion (in TUS, not in TBOT)

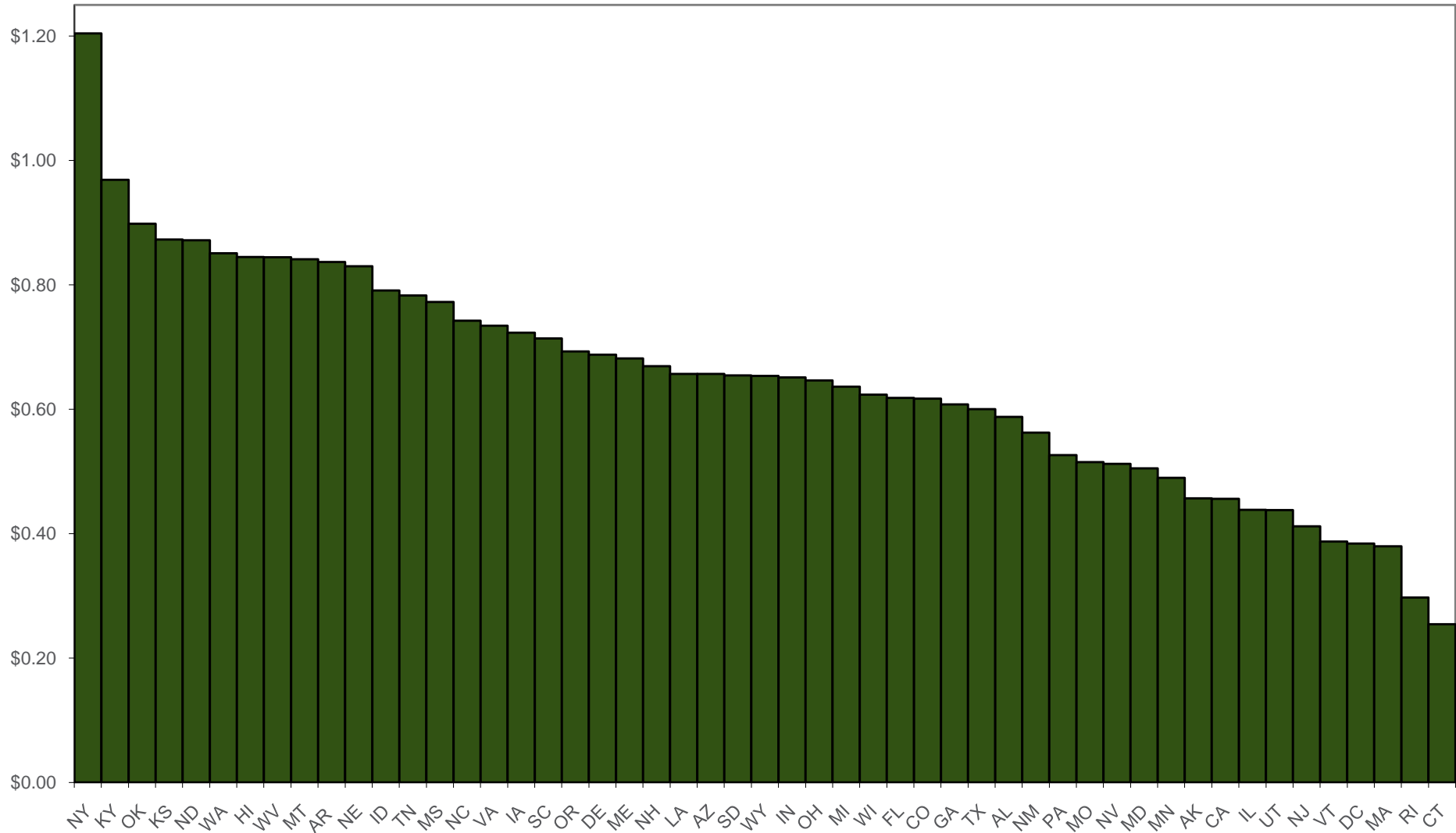
Cigarette Marketing Expenditures per Pack, by Type, 1975-2008 Inflation Adjusted (August 2011 dollars)



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Source: author's calculations from data reported in FTC (2011)

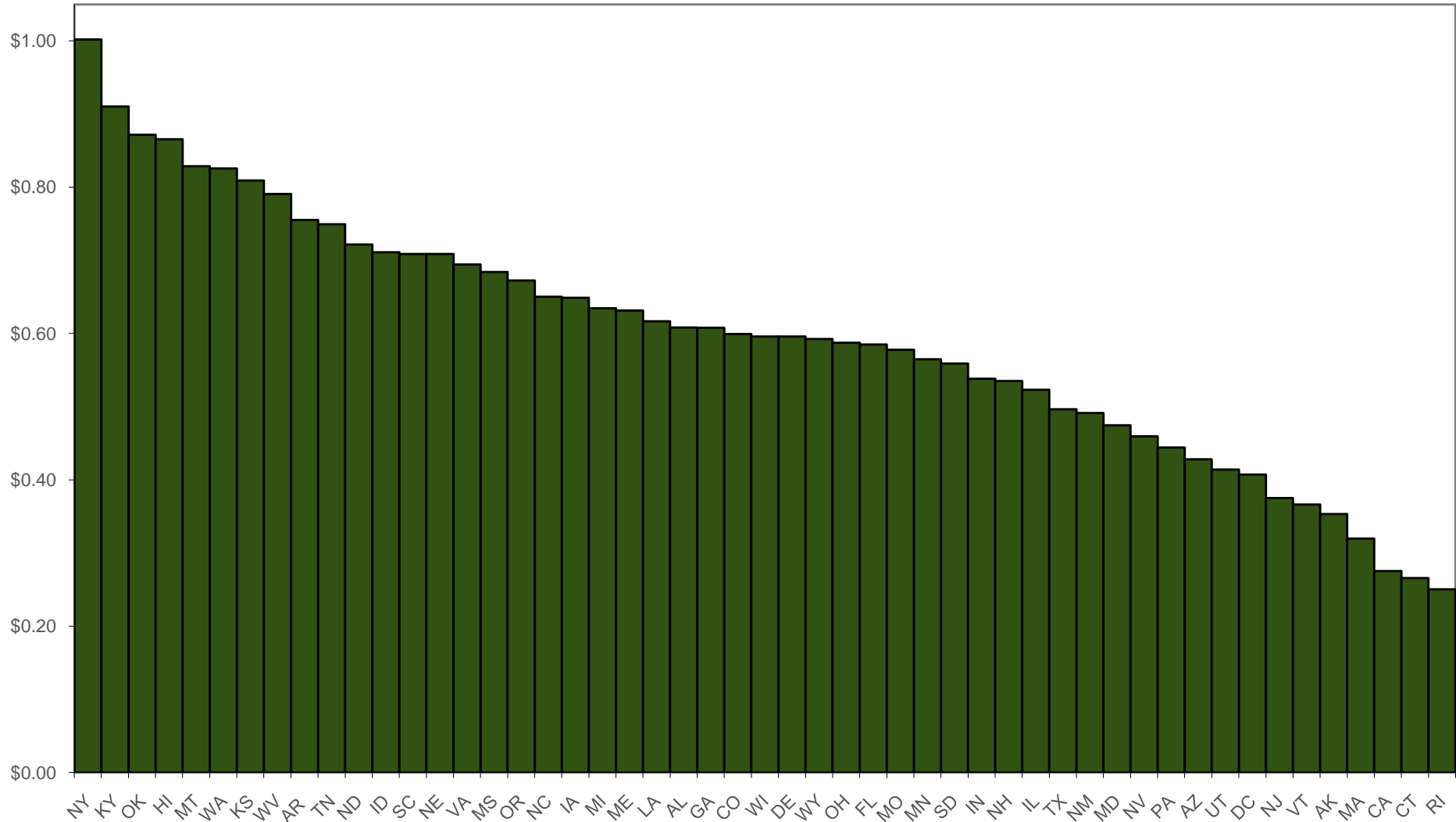
Difference in TBOT and TUS Prices, 2003



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Source: Tax Burden on Tobacco and TUS-CPS

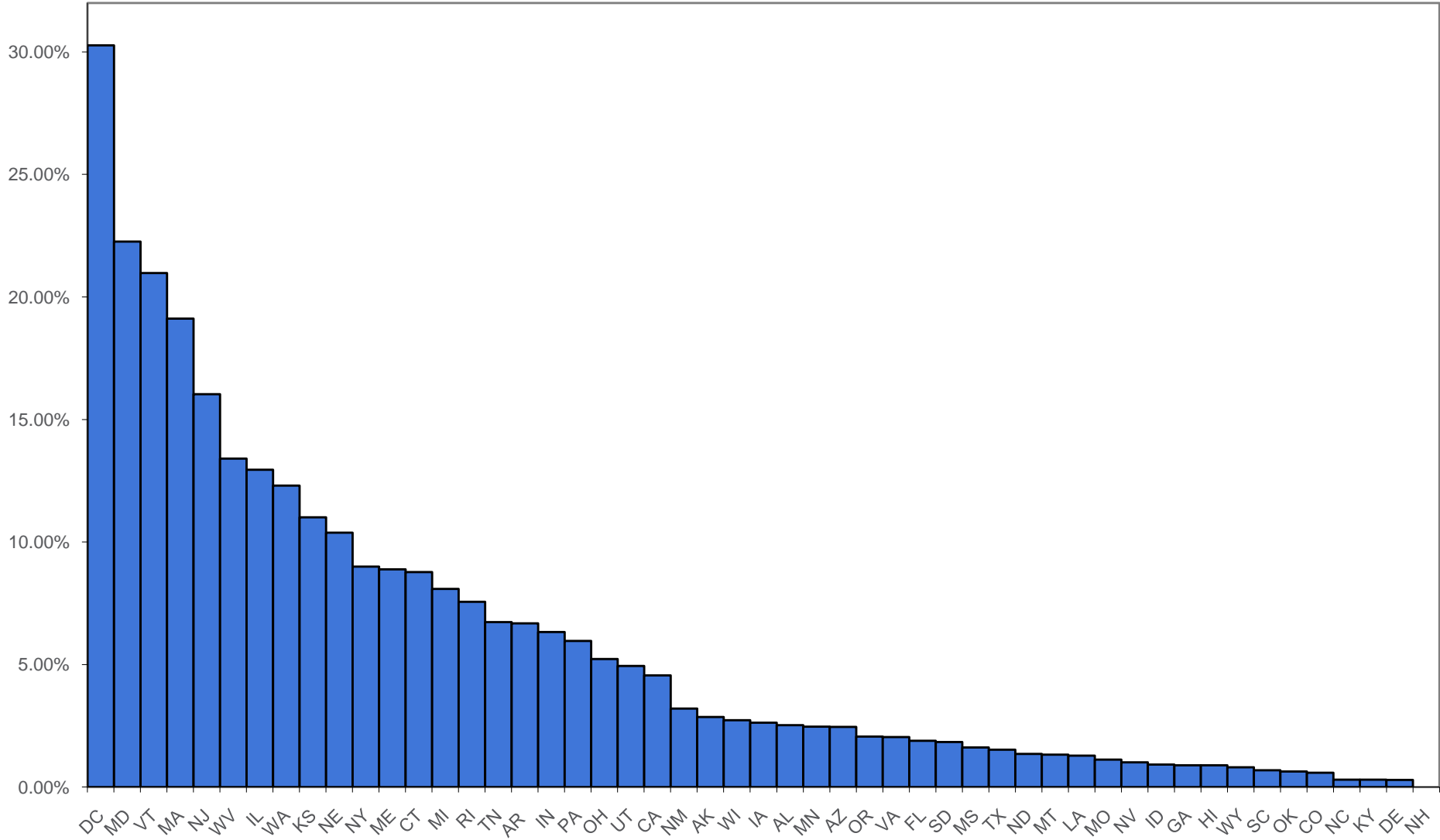
Difference in TBOT and TUS Prices, 2006/07



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Source: Tax Burden on Tobacco and TUS-CPS

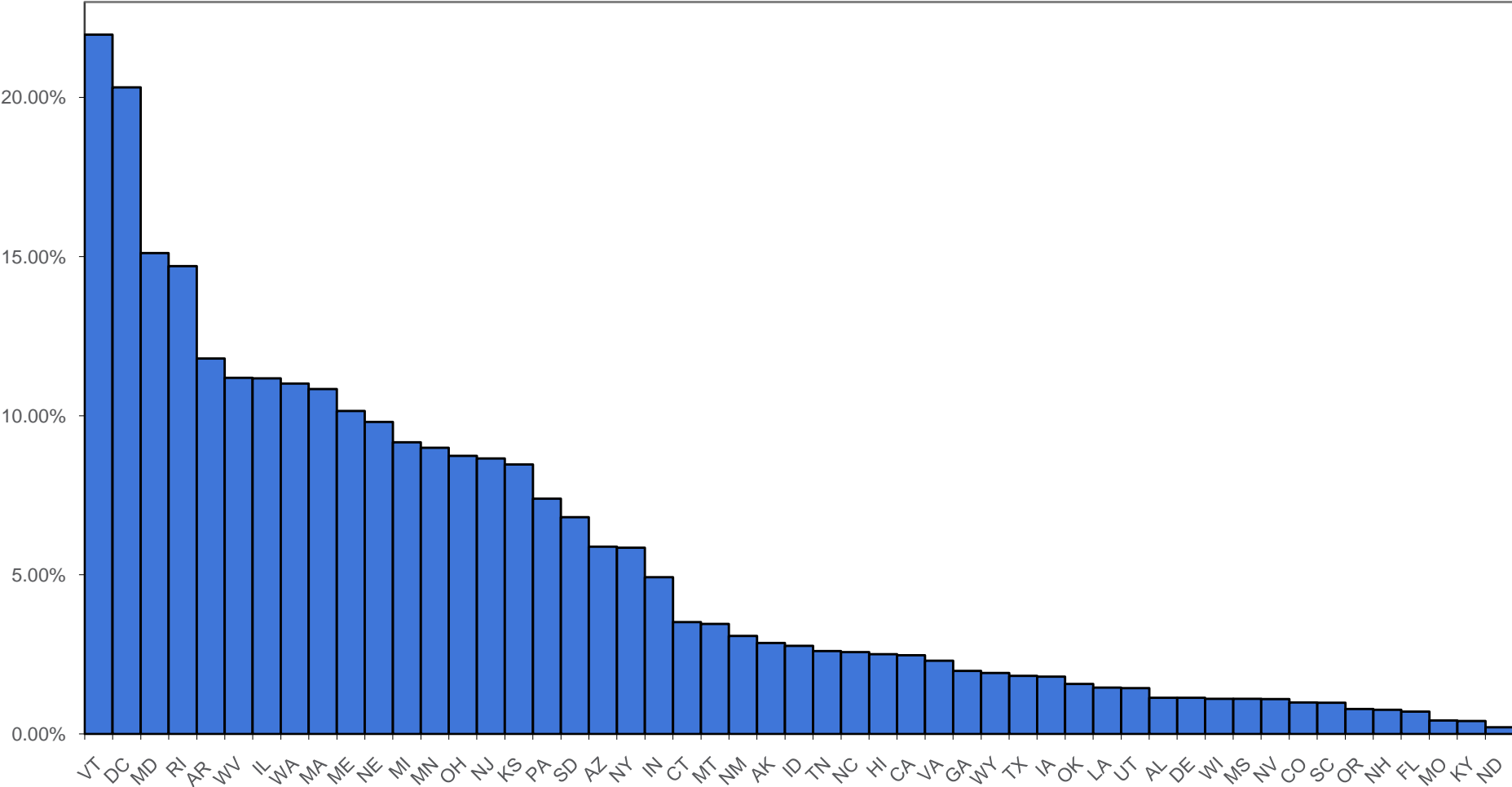
TUS, % Tax Avoiders, 2003



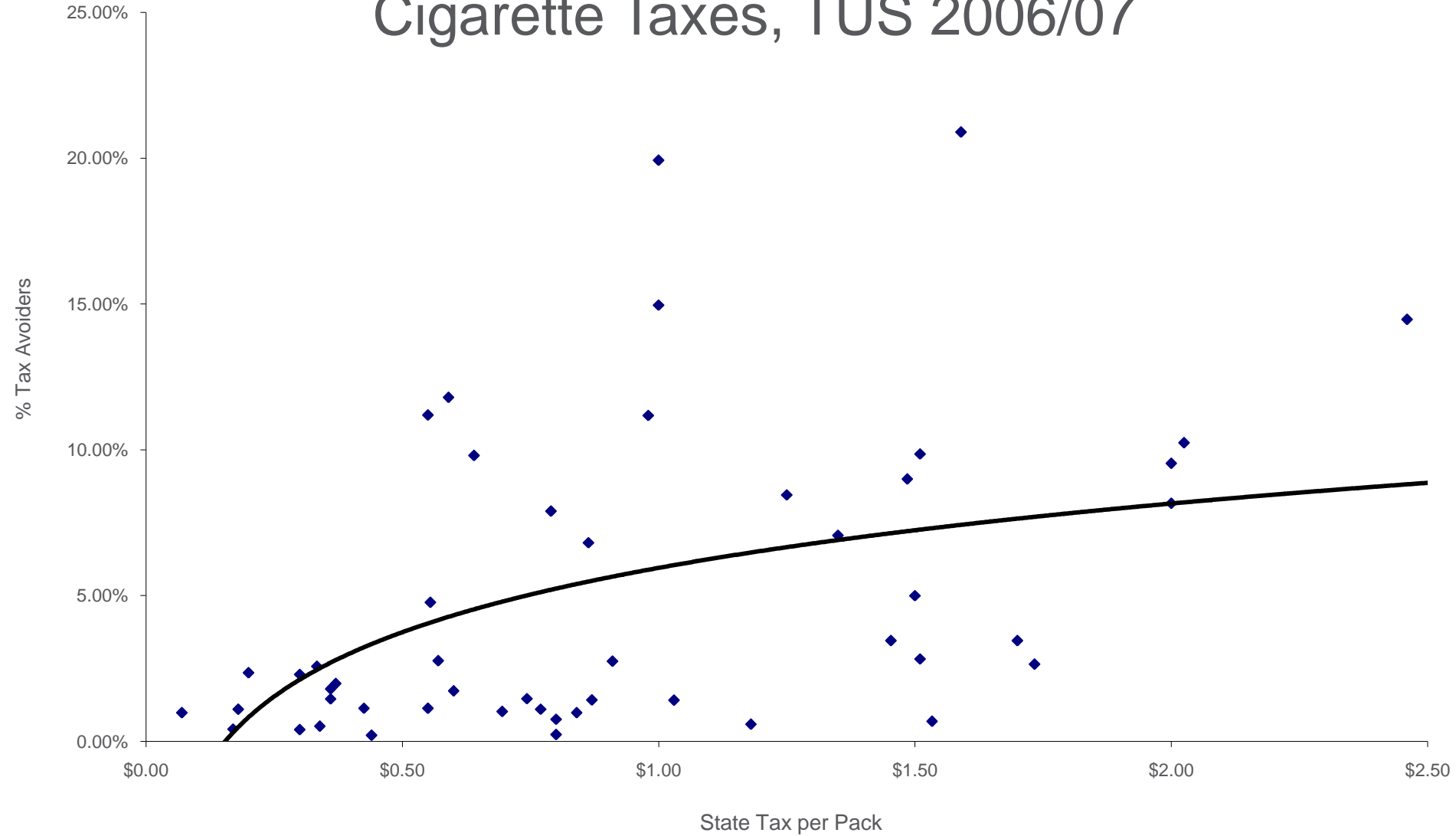
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Source: Tax Burden on Tobacco and TUS-CPS

TUS, % Tax Avoiders, 2006/07

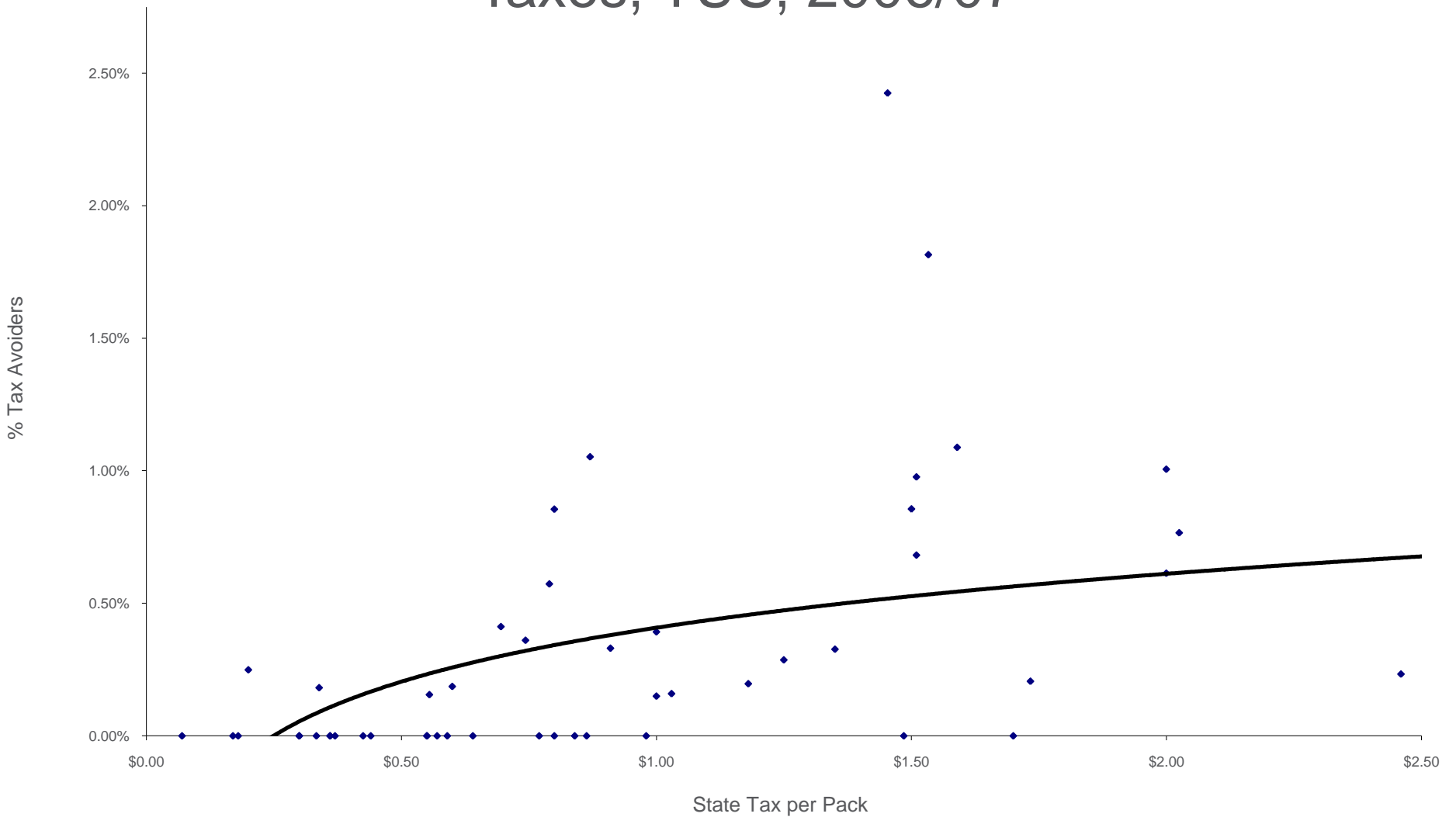


Cross Border Tax Avoidance and State Cigarette Taxes, TUS 2006/07



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Other Tax Avoidance and State Cigarette Taxes, TUS, 2006/07



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US – TBOT vs. TUS-CPS

- Summary
 - TBOT prices overstate actual prices smokers face for cigarettes
 - do not capture opportunities for tax avoidance, sales that have evaded taxes, and price-reducing promotions
 - Prices based on self-report survey data
 - TUS average cigarette prices appear to be valid measures of the prices smokers actually face for cigarettes
 - Relying on archival prices from TBOT may lead to biased estimates of the impact of price
 - Improving measures of price used in demand analysis a focus of our NCI-funded SCTC project

Official Price Series vs. International Tobacco Control Policy Evaluation Surveys

Official Statistics vs. ITC

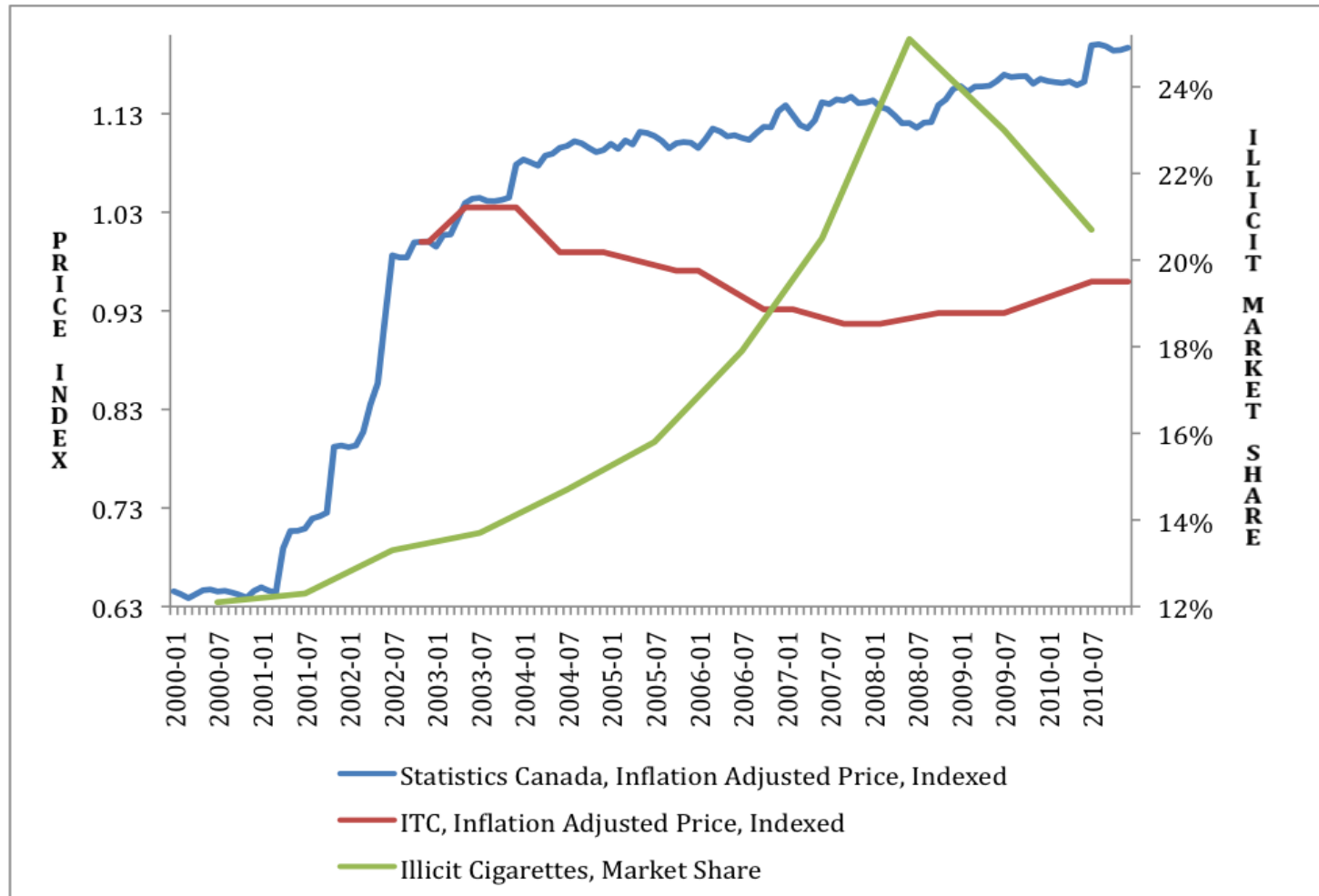
- Official Statistics
 - US: Consumer Price Index, Bureau of Labor Statistics
 - Canada: Cigarette Price Series, Statistics Canada
 - Selected cigarette brands
 - Includes price-reducing promotions
 - Unlikely to include prices for cigarettes that evade/avoid taxes
- ITC Prices
 - Reported by representative sample of smokers based on last purchase
 - Includes price-reducing promotions and purchases that avoid/evade taxes

Comparisons of Cigarette Prices in Canada Between Statistics Canada and the ITC Canada Survey Over Eight Waves of Survey Data Collection (October 2002 to June 2011)

Survey Dates	Statistics Canada	Percent Change	ITC	Percent Change
10/30/02-12/30/02	131.3		\$7.43	
5/15/03-9/28/03	137.4	4.7%	\$7.69	3.5%
6/3/04-12/27/04	143.9	4.7%	\$7.35	-4.4%
10/10/05-1/31/06	144.3	0.3%	\$7.21	-1.9%
10/11/06-2/17/07	147.8	2.5%	\$6.92	-4.0%
9/21/07-2/12/08	149.9	1.4%	\$6.81	-1.6%
10/25/08-7/28/09	151.6	1.2%	\$6.89	1.2%
7/13/10-6/24/11	157.1	3.6%	\$7.13	3.4%
Average Change		2.6%		-0.5%
Total Change		19.7%		-4.0%

Notes: The Statistics Canada price reflects an inflation-adjusted measure of the cigarette prices reported by Statistics Canada indexed to January 2000. The ITC price reflects a consumption-weighted average of the prices reported by smokers in the ITC Canada Survey, adjusted for inflation.

Cigarette Prices and Illicit Cigarette Market Share, Canada, 2000-2010



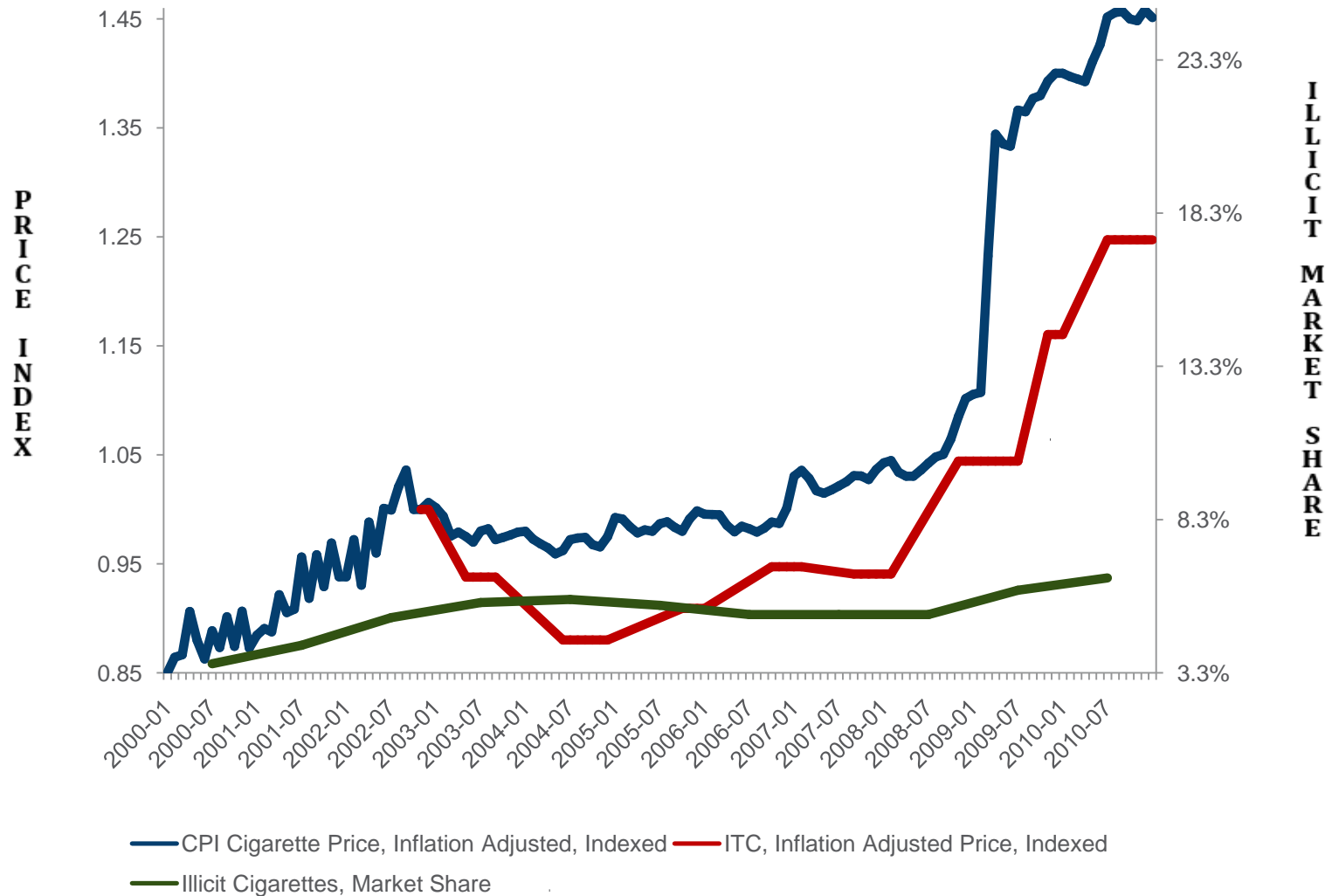
Source: Euromonitor, 2011; Statistics Canada, and ITC project. Note that the two price measures are indexed to 1.0 in November 2002

Comparisons of Cigarette Prices in US Between BLS and the ITC US Survey Over Eight Waves of Survey Data Collection (October 2002 to June 2011)

Survey Dates	United States			
	BLS-CPI	Percent Change	ITC	Percent Change
10/30/02-12/30/02	1.180		\$4.10	
5/15/03-9/28/03	1.148	-2.7%	\$3.85	-6.2%
6/3/04-12/27/04	1.141	-0.6%	\$3.61	-6.1%
10/10/05-1/31/06	1.166	2.2%	\$3.73	3.3%
10/11/06-2/17/07	1.186	1.7%	\$3.89	4.2%
9/21/07-2/12/08	1.218	2.7%	\$3.86	-0.7%
10/25/08-7/28/09	1.420	16.6%	\$4.29	11.0%
11/2/09-1/10/10	1.644	15.8%	\$4.76	11.1%
7/13/10-6/24/11	1.709	4.0%	\$5.12	7.5%
Average Change		5.0%		3.0%
Total Change		44.9%		24.7%

Notes: Bureau of Labor Statistics inflation adjusted price indexed to one in January 2000. The ITC price reflects a consumption-weighted average of the prices reported by smokers in the ITC Canada Survey, adjusted for inflation.

Cigarette Prices and Illicit Cigarette Market Share, United States, 2000-2010



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Source: Euromonitor, 2011, Bureau of Labor Statistics, and ITC project. Note that the two price measures are indexed to 1.0 in November 2002

Official Statistics vs. ITC

- Summary
 - Official price series may misrepresent trends in prices over time
 - do not capture changes in the availability of untaxed, illegal cigarettes that lead to lower prices
 - Prices based on self-report survey data
 - ITC average cigarette prices appear to be valid measures of the prices smokers actually face for cigarettes

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