

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

New Findings from Research on the Economics of Tobacco Use

Frank J. Chaloupka, University of Illinois at Chicago

Food & Drug Administration, Center for Tobacco Products, May 8, 2013

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

Monitoring and Assessing the Impact of Tax and Price Policies on US Tobacco Use

Funding Acknowledgment

- Funding provided by the National Cancer Institute under the **State and Community Tobacco Control Initiative**, grant number UO1-154248, University of Illinois, Frank Chaloupka, PhD, PI
- Overarching aim: To improve our understanding of the **impact of tobacco tax and price policies on tobacco use and related behaviors**
- Builds on work funded by the Robert Wood Johnson Foundation for the Bridging the Gap research program

Project Team

- University of Illinois at Chicago
 - Jamie Chriqui, David Merriman, Jidong Huang, John Tauras, Sandy Slater, Camille Gourdet, Hilary DeLong Kevin Gibbs, Joanie Wright, others
- Roswell Park Cancer Institute
 - Andy Hyland, Maansi Travers, Cheryl Rivard
- Barker Bi-Coastal Consultants, Inc.
 - Dianne Barker
- Burness Communications
 - Chuck Alexander, Laurie Lennon, others

Project Team

- Consultants
 - Geoffrey Fong, Lloyd Johnston, Patrick O'Malley, Mike Cummings
- Advisory Panel
 - Carolyn Dresler (FDA), Cynthia Hallet (Americans for Nonsmokers' Rights Foundation), David Hankins (Attorney General of Washington), Patricia Henderson (Black Hills Center for American Indian Health), Lois Keithly (Massachusetts Tobacco Cessation and Prevention Program), April Roeseler (California Tobacco Control Program)

Aim 1: Policy Surveillance

bridging the gap

Specific Aims

Aim 1: Compile a historical data set of codified law (statutes, regulations, and case law) and policies affecting retail tobacco product prices

- cigarette & other tobacco product excise taxes, tax stamps
- Minimum pricing/markup policies
- policies addressing direct purchases/sales
- tribal compacts and other policies targeting reservation sales
- policies limiting price promotions
- policies strengthening tax and MSA administration and enforcement

Policy Collection Process

- **Initial Research**

- Relevant statutes and regulations identified in Lexis
- 8 Pilot states: CA, MA, NY, OK, OR, PA, VA, WA

- **Verification**

- Sources: Westlaw, State Case Law, Attorney General Opinions, Law Reviews, State Websites, SCLD, STATE

- **Develop Coding Scheme**

Coding Parameters: 2001-2015

- Year One - Laws in effect as of January 1, 2012

Progress – Broad View

Tier 1: Coding Scheme Completed/Year One Coding Initiated

- Cigarette Tax
- Minimum Markup

Tier 2: Coding Scheme and Law Verification in Progress

- OTP Tax
- Tribal Taxation

Tier 3: Law Collection and Verification in Initial Stages

- Direct Sales
- MSA

Cigarette Tax

State laws related to the use of tax stamps, meter impressions, or other indicia to indicate payment of state and local taxes on cigarettes.

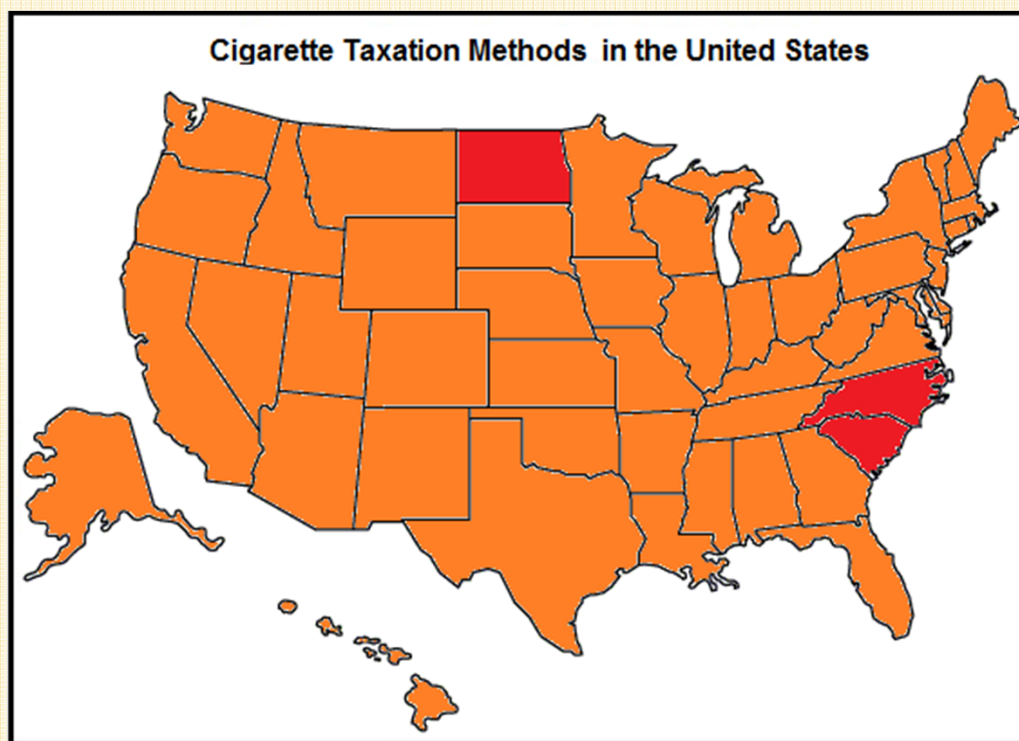
Status:

- Coding scheme developed
- Testing scheme against pilot states
- Final adjustments being made to coding scheme as necessary
- Decision Rules document being formed to guide future coding

Cigarette Tax: Scope

All 51 states tax cigarettes, and 48 of them utilize tax stamps.

- 3 of the 51 states use **recordkeeping** in lieu of tax stamps.



**Tax Stamp
States**

**Recordkeeping
States:
NC, SC, ND**

Cigarette Tax: Areas of Interest

Stamps:

- Encryption/Anti-Counterfeit Technology

Taxation:

- Border Zone Tax Rates
- Enabling/Preemption Laws

Penalties:

- Broad view of cigarette tax-related penalties

**Note: Due to a wide variance of penalties across all states, this category has been simplified to reflect the presence of general enforcement mechanisms in regards to both 1st offenses and graduated penalties. (e.g. Fines, Imprisonment, License Revocation/Suspension)*

Minimum Markup

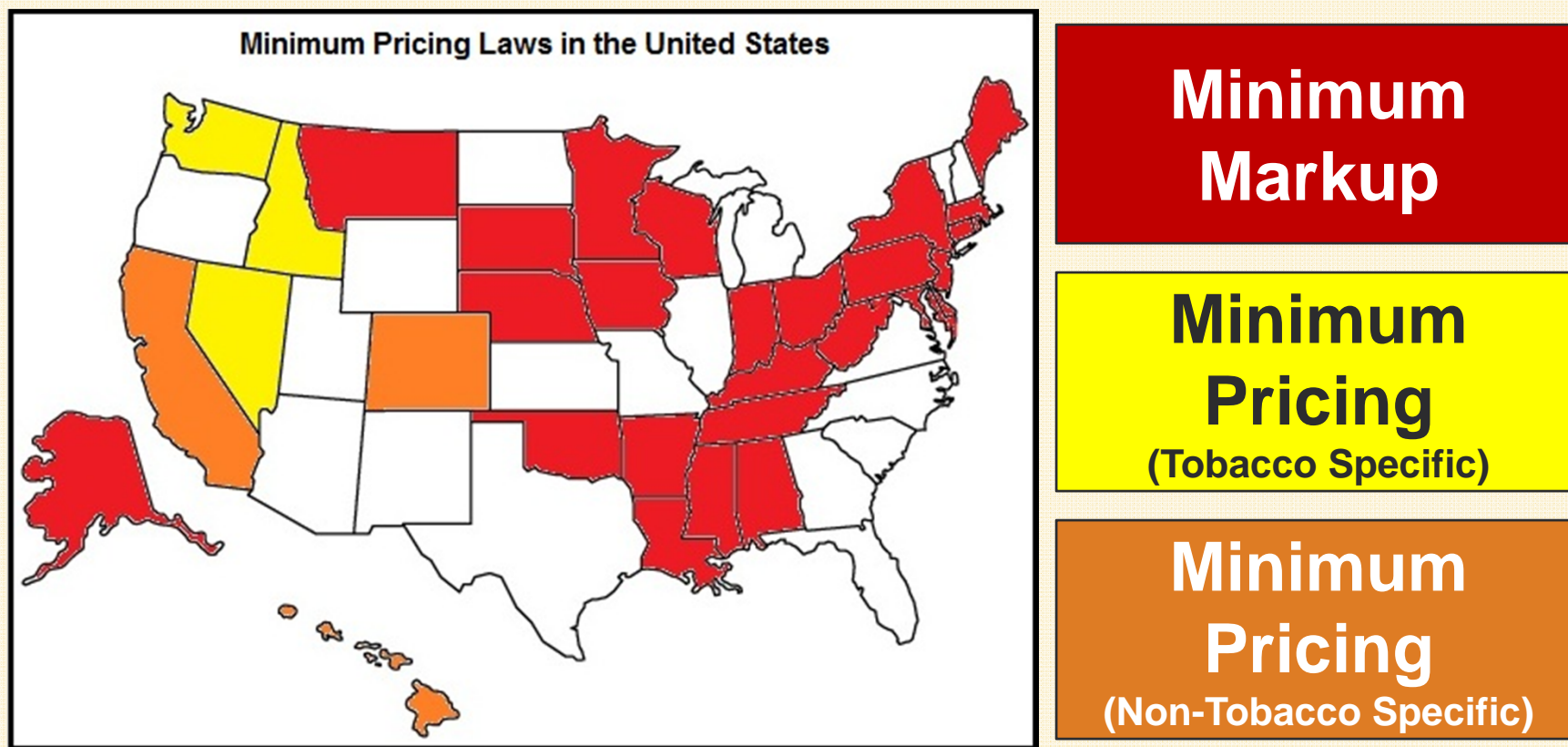
State laws promoting fair competition through the creation of minimum pricing schemes for cigarettes and OTP.

Status:

- Coding scheme complete
- Relevant laws collected and verified
- Illustrative PATH charts being developed for all 32 states

Minimum Markup: Scope

32 of the 51 states utilize some form of minimum markup laws.



Minimum Markup: Types

Minimum Markup

Require adding a specific retail or wholesale markup percentage to the basic (or invoice) cost of cigarettes and OTP.

- 26 States: AK, AR, CT, DE, DC, IN, IA, KY, LA, MA, ME, MD, MN, MS, MT, NE, NJ, NY, OH, OK, PA, RI, SD, TN, WV, WI

Minimum Pricing (Tobacco Specific)

Prohibit selling cigarettes below retail or wholesale cost. No corresponding markup percentage is applied.

- 3 States: ID, NV, WA

Minimum Pricing (Non-Tobacco Specific)

Prohibit sales below cost, but do not specifically mention tobacco. Included here because these states' courts have applied these general minimum pricing laws to cigarettes. No corresponding markup percentage is applied.

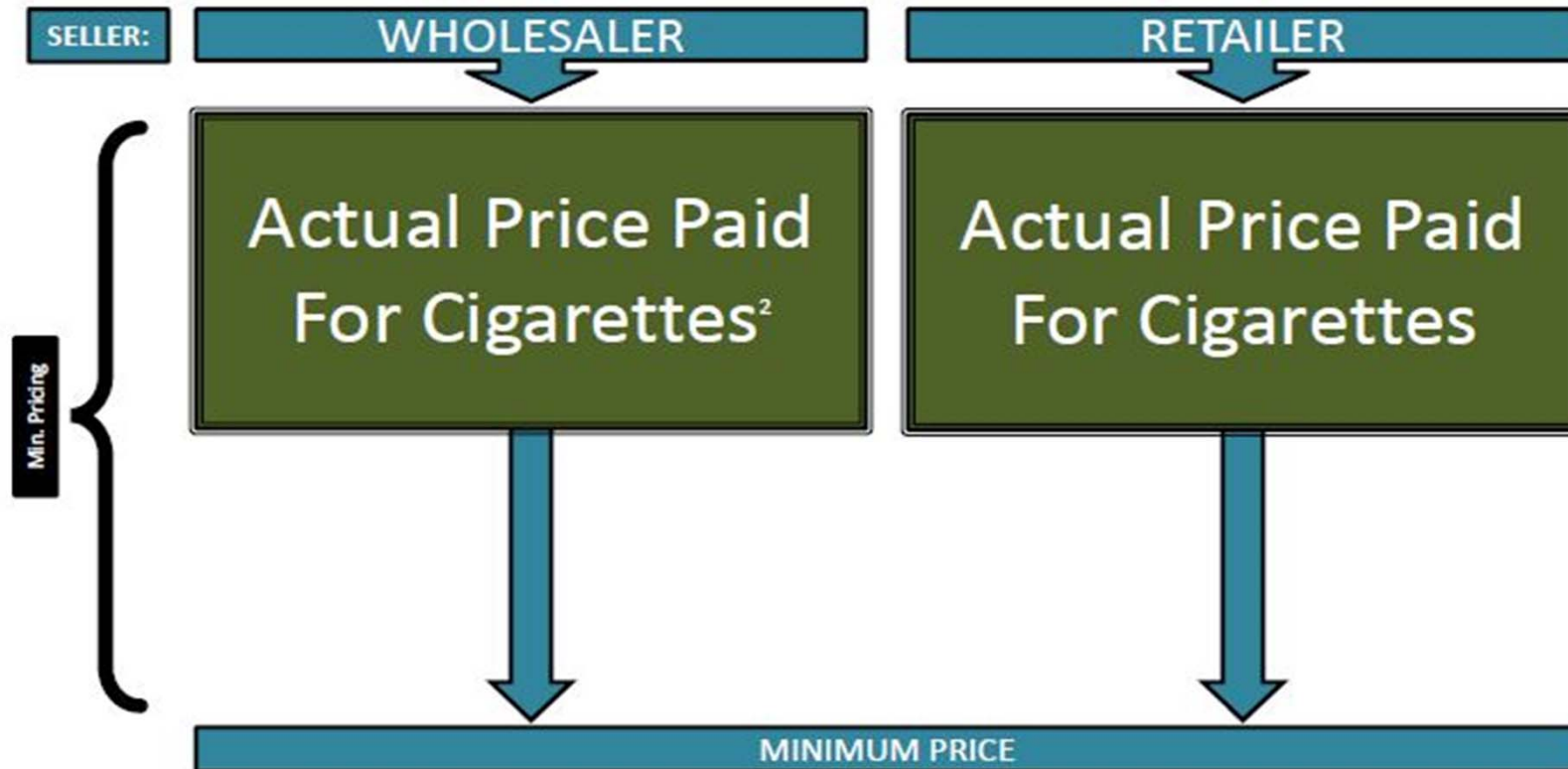
- 3 States: CA, CO, HI

Minimum Markup: Illustrations

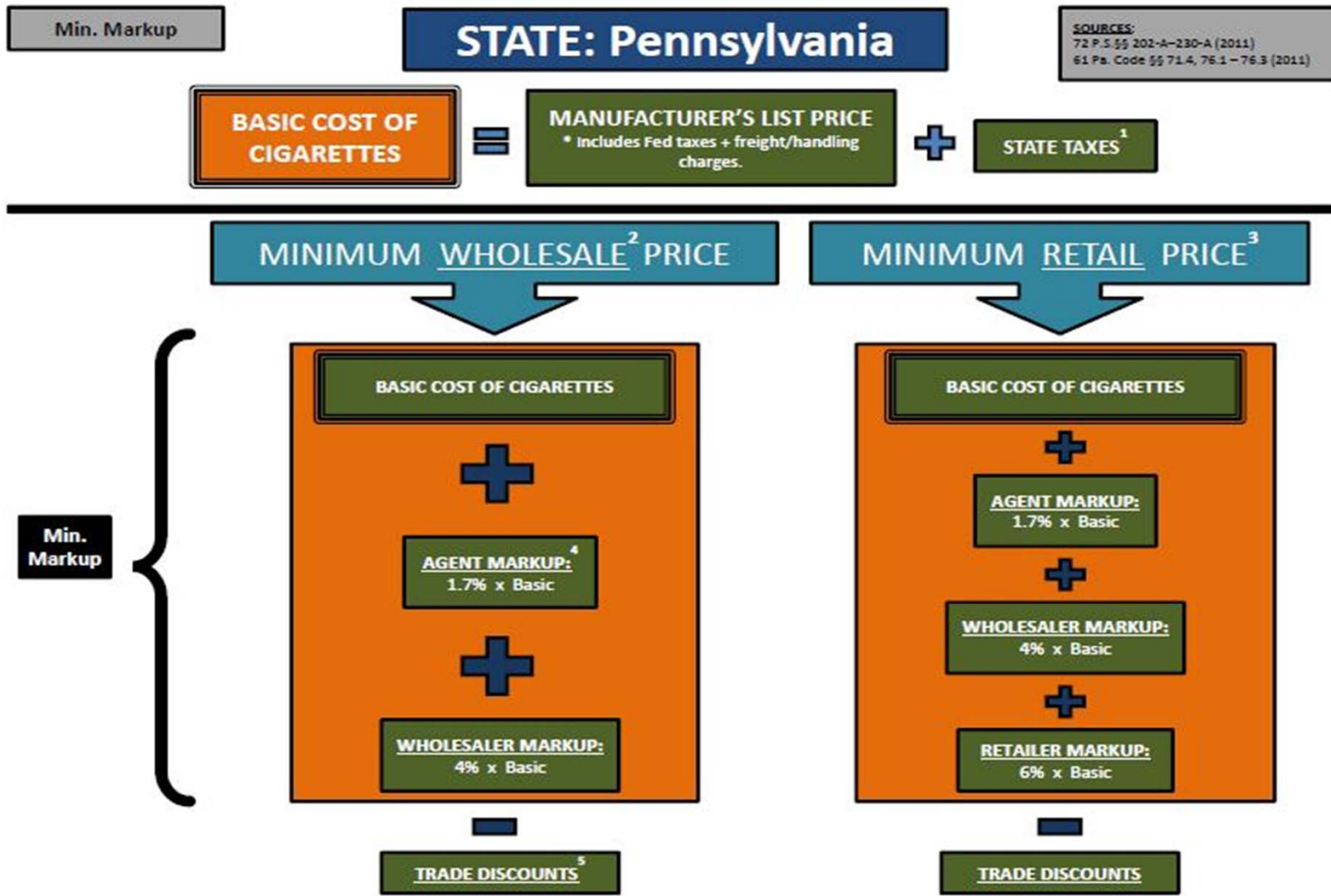
Minimum Pricing¹

STATE: Washington

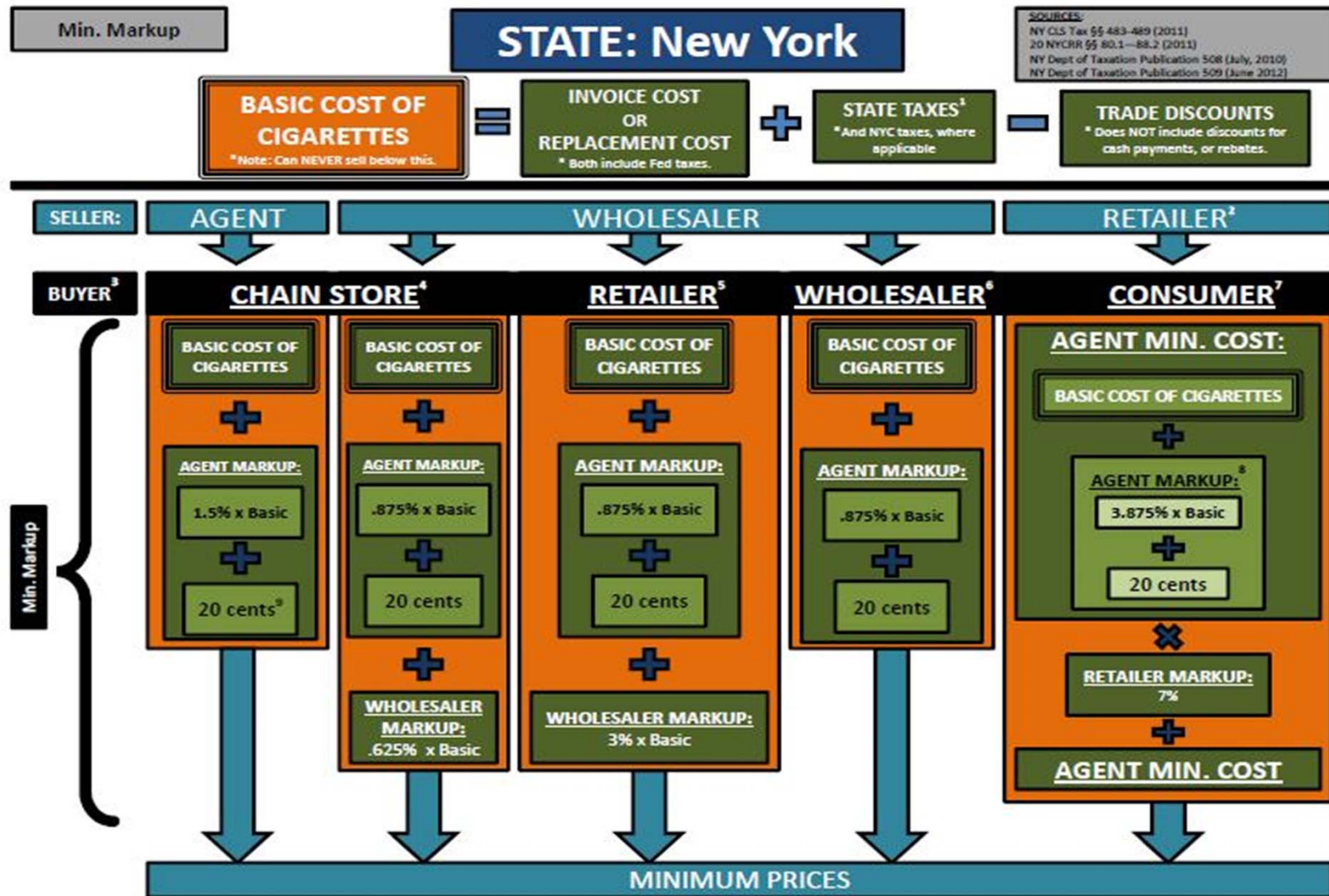
SOURCES:
ARCW § 19.91.300 (2011)
ARCW § 2.24.510 (2011)



Minimum Markup: Illustrations



Minimum Markup: Illustrations



Minimum Markup: Areas of Interest

- OTP Application
 - Only **three** states apply their minimum pricing laws to OTP:
 - Oklahoma, Rhode Island, Wisconsin
- Complexity of pricing formulas
- Trade Discounts:
 - Who may use them?
 - Where are they located within the pricing formula?
- Coupons, Rebates, and Concessions

OTP Tax

State laws related to the distribution and application of tax stamps, meter impressions, or other indicia used to indicate payment of state excise taxes on OTP.

Status:

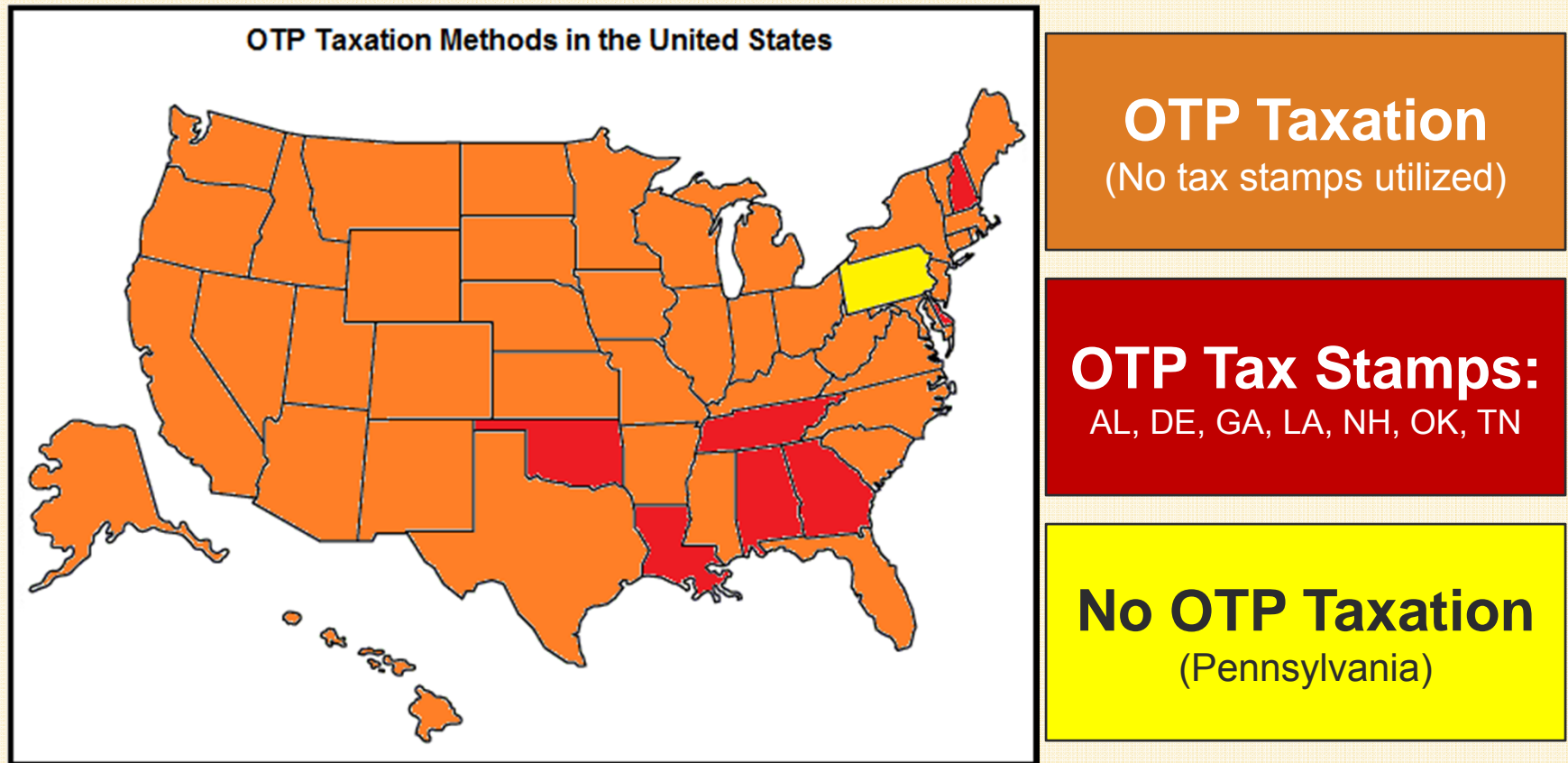
- Laws collected
- Verification in progress
- Coding scheme in initial stages.

Areas of Interest:

- Differential treatment of OTP types
- Emerging products (e.g. e-cigarettes, dissolvables, etc.)
- Roll-Your-Own machines

OTP Tax: Scope

50 of the 51 states tax OTP; only 7 states use tax stamps.



Tribal Taxation

State and tribal laws related to the taxation of cigarette and OTP on tribal lands.

Status:

- State laws collected
- Verification of state laws in progress
- Tribes targeted for internal law collection; some internal tribal laws collected.
- Coding scheme in initial stages

Scope: 22 of the 51 states have laws related to tribal tobacco taxation

- AK, AZ, CA, FL, ID, IA, KS, MI, MN, MT, ND, NE, NM, NV, NY, OK, OR, SD, UT, WA, WI, WY

Areas of Interest:

- State's jurisdiction over tribal sales
- State laws touching on state-tribe relationship
- Internal tribal laws governing taxation of cigarettes and OTP.

Direct Sales/MSA

Direct Sales

State laws either prohibit or restrict the sale of cigarettes through the mail, by phone, online, or through other non-face-to-face means. Most are in conjunction with the PACT Act, a federal law enacted in 2010 to curb widespread state cig tax evasion.

- Scope: 41 of the 51 states have Direct Sales laws.
 - States without direct sales laws: CO, DC, GA, IA, KY, MS, NE, NH, NC, SC

MSA

State laws requiring compliance with the Master Settlement Agreement's reporting and monetary requirements. Distinguishes between "participating" or "non-participating" manufacturers.

- Scope: All 51 states have MSA/related laws.

Status: Laws for both categories have been collected and are awaiting verification.

Aim 2: Tobacco Pricing & Promotion

bridging the gap

Specific Aims

Aim 2: Assess the impact of price-related policies on retail prices and price-reducing promotions for tobacco products

- Combines policy data from Aim 1 with data from:
 - BTG-COMP observational data collections
 - Self-reported data on prices and price promotions from multiple surveys
 - Store-based scanner data on prices and price promotions

Point of Sale Observations

- Engaged in analyzing retail outlet observational data in 150+ nationwide communities per year
 - 1999-2003 (available for comparative trend analysis)
 - 2010-2012 (n=154,157,161 communities)
- Several descriptive analyses underway
- POS Data will be merged with tobacco policies to:
 - Assess the impact of price-related policies on retail prices and price-reducing promotions (Aim 2)
 - Assess the impact of tobacco product prices, price reducing promotions, and related policies on tobacco product purchasing behaviors (Aim 3)
 - Examine the impact of tobacco product prices, price-reducing promotions, and related policies on tobacco use behaviors from MTF and expanded ITC survey (Aim 5)

BTG-COMP 2012 Tobacco Instrument

- **Product Availability and Placement**
 - Traditional products, including loose/rolling tobacco and moist snuff
 - New products: snus, e-cigarettes, dissolvable products by brand
 - Flavored and unflavored cigar products
- **Product Pricing and Promotion**
 - Marlboro, Camel, Newport, Cheapest cigs
 - Marlboro and Camel snus
 - Cheapest pipe tobacco (no promotion data)
- **Interior Marketing**
 - Presence of cigs, snus, moist snuff, dissolvable product ads
 - Type and characteristics of tobacco ads, including health content
- **Exterior Marketing on Building Exterior and Property**
 - Counts of cigs, snus, moist snuff, dissolvable product ads
- **OTC NRT Availability and Store Exterior Characteristics**

BTG-COMP Tobacco Instrument Reliability Analysis (preliminary)

- Convenience sample in 120 food stores in 50-mile buffer around Chicago MSA conducted in January, 2010
- Two raters coding independently in each store

Item Category	# Items with calculated Kappa or ICC	% with substantial agreement (Kappa or ICC .61 – 1.00)
Product Availability	15	87%
Product Pricing	10	100%
Product Promotions	13	31%
Interior Marketing	23	78%
Exterior Marketing	13	38%

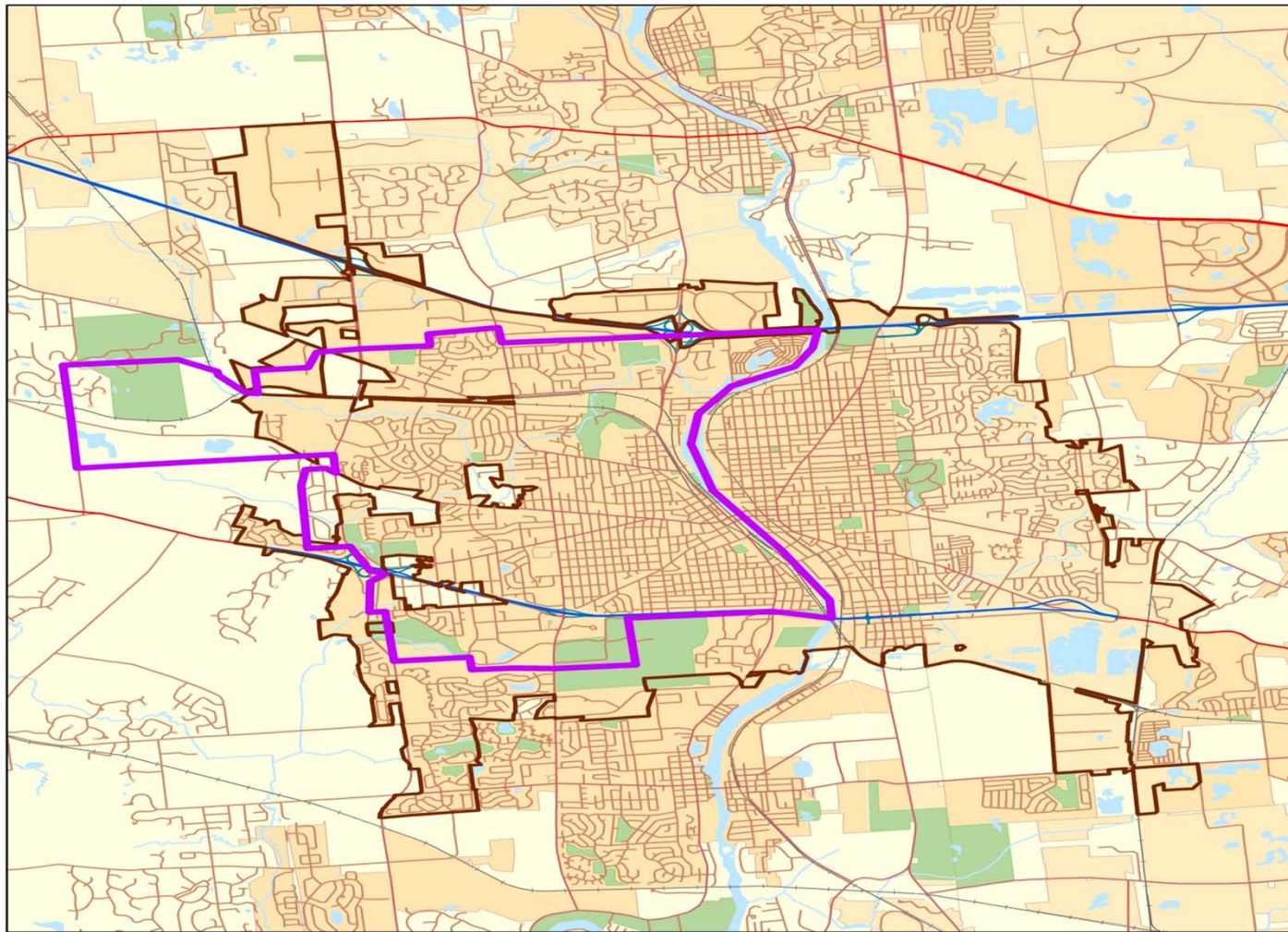
bridging the gap

BTG-COMP Community Definition

- School Enrollment Zone
 - 2nd year Monitoring the Future public middle and high schools
 - 2008 Focus Groups confirmed adolescents stay pretty close to school and home to eat
- May be multiple policy jurisdictions surrounding the school enrollment zone

	# Communities	# Policy Jurisdictions
2010	154	360
2011	157	378
2012	161	Still under review

- Environmental observations in food stores, tobacco stores, fast food restaurants, parks, physical activity facilities, school grounds and on streets



bridging the gap

BTG-COMP Field Logistics



- Centralized management
 - Field Service Manager located at UIC, 9-7 ct telephone coverage
 - All field staff live in Chicago MSA
 - 3.5 week interactive training (tobacco : 5 hours plus reviews, sampling, field procedures)
- Field teams consist of 2 people, may be multiple teams per site
 - Rotate every 3 weeks
 - Teams return every Friday, and fly out Monday am
 - Average 10-12 teams per week
- Field materials
 - Use UPS to ship materials to/from site
 - Each team has a car GPS and a hand-held GPS unit
 - Each person carries own manual and help sheets

bridging the gap

BTG-COMP Sampling Approach: Preparation of Business List Sample

- Identify SIC Codes and purchase InfoUSA and Dun & Bradstreet data
 - Supplemented with store names including “Dollar,” “99 cents,” “Value”
 - Added Walmart, Target, K-Mart, Meijer
- Merge InfoUSA and Dun & Bradstreet data, and de-duplicate
- Screen over 12,000 businesses (food store, fast food, pa facilities) by phone
 - Additional 40% ineligible (e.g., business closed, not reached, did not meet criteria)
- Sample stores from business lists; add stores in field to account for errors in business lists

BTG-COMP Tobacco Outlets (preliminary, 2012)

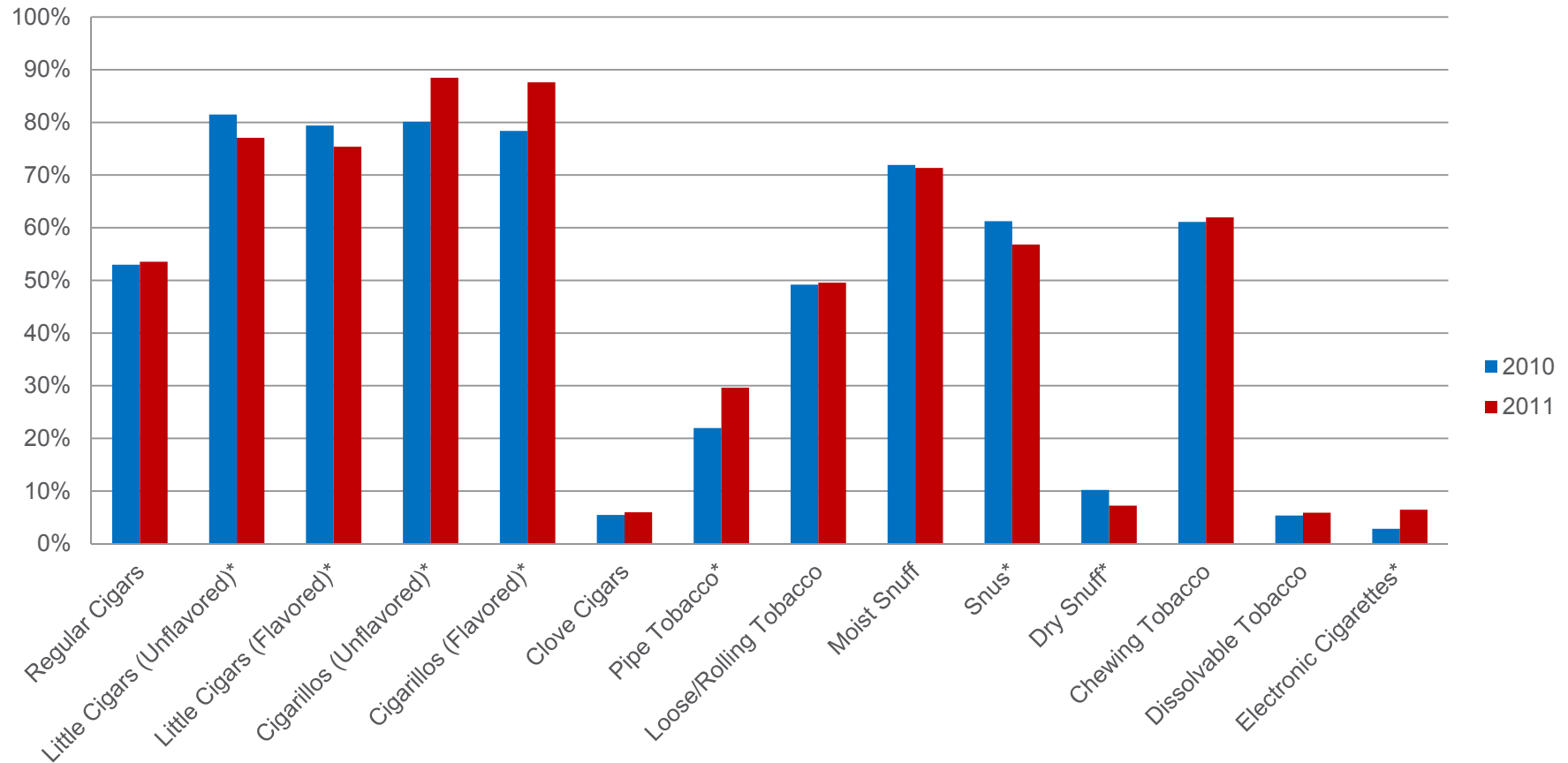
Food Stores with Tobacco Sales (n=2,429)

- Supermarket (n=274)
- Grocery (n=132)
- Limited Service (n=2023)
 - Convenience
 - Gas
 - Pharmacy
 - Small Discount Store (e.g., Dollar General, 99cent Store)
 - Liquor store if sells drinks and snacks and 5 or more food items

Tobacco Stores (n=154)

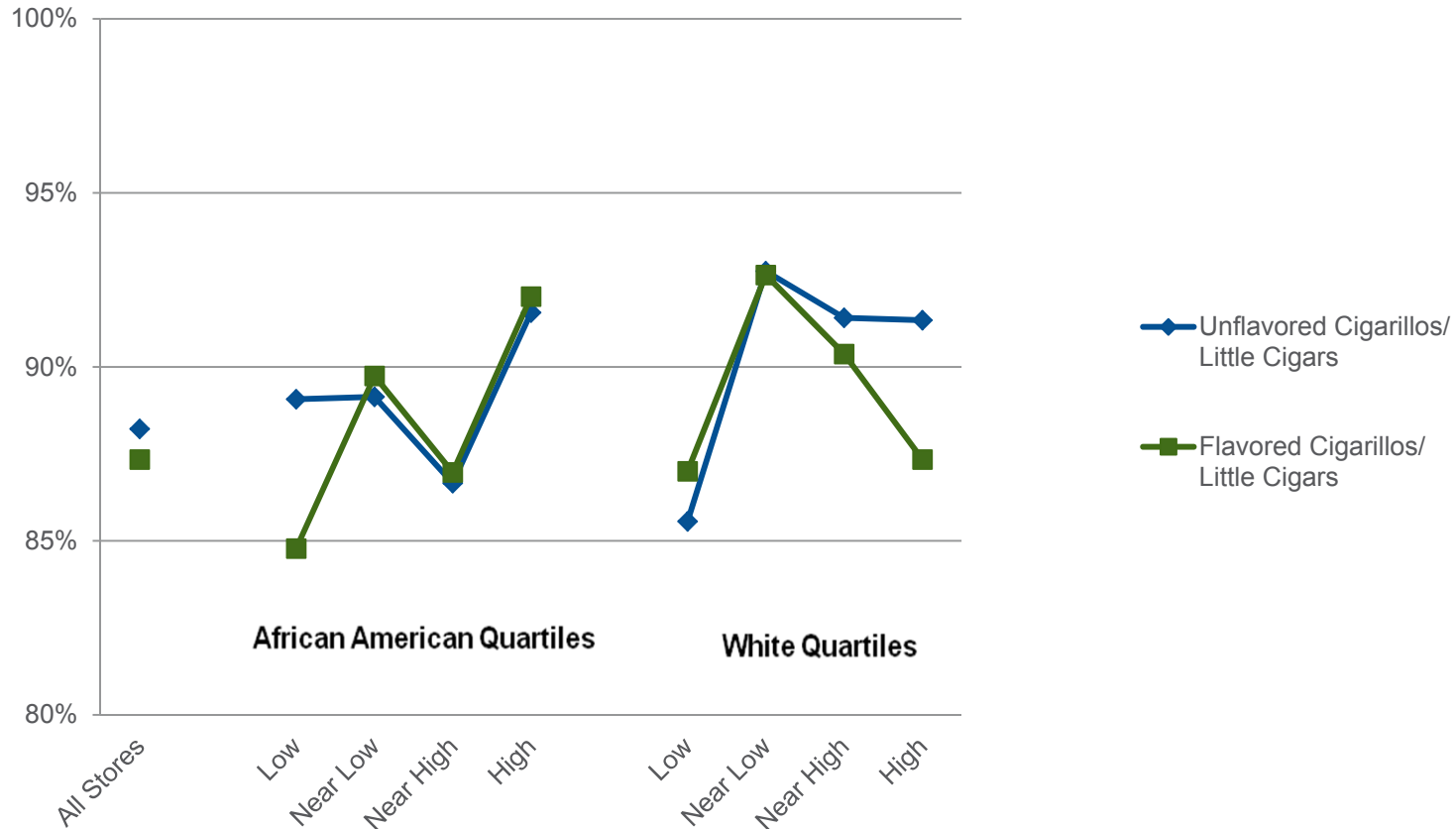
- Primarily engaged in retail sales of cigarettes, cigars, tobacco and other smokers' supplies. At least 50% of its merchandise is tobacco or smoking-related.
- Not a food store, cigar/tobacco/hookah club or lounge

Availability of Tobacco Products in Stores which Sell Cigarettes, 2010 and 2011



Percentage of Stores Which Sell Flavored and Unflavored Cigarillos / Little Cigars

By African American and White Quartiles, 2011



Notes: The following comparisons are significantly different at $p < 0.05$
 African American Quartiles: flavored cigarillos / little cigars: Overall and Low vs. High
 White Quartiles: no significant difference

bridging the gap

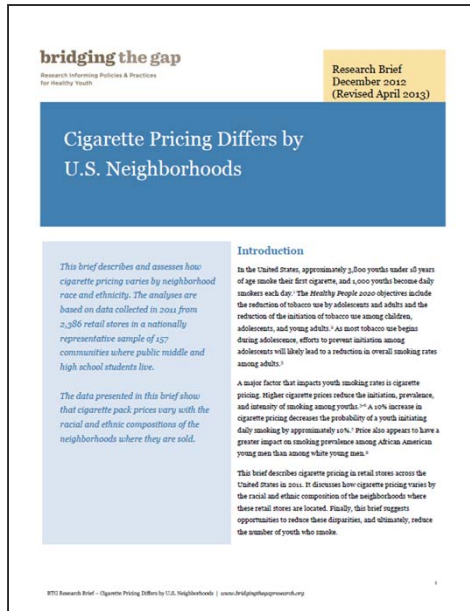
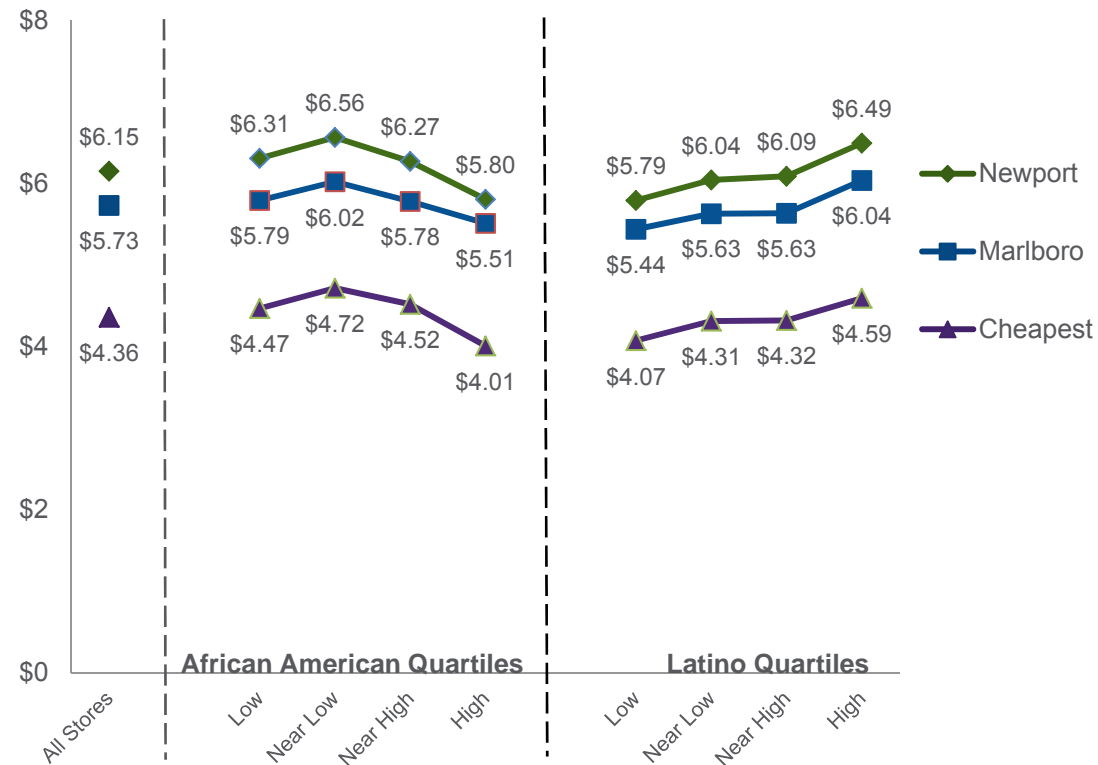


FIGURE 1 Average Price of Cigarette Packs
By African American and Latino Quartiles, 2011



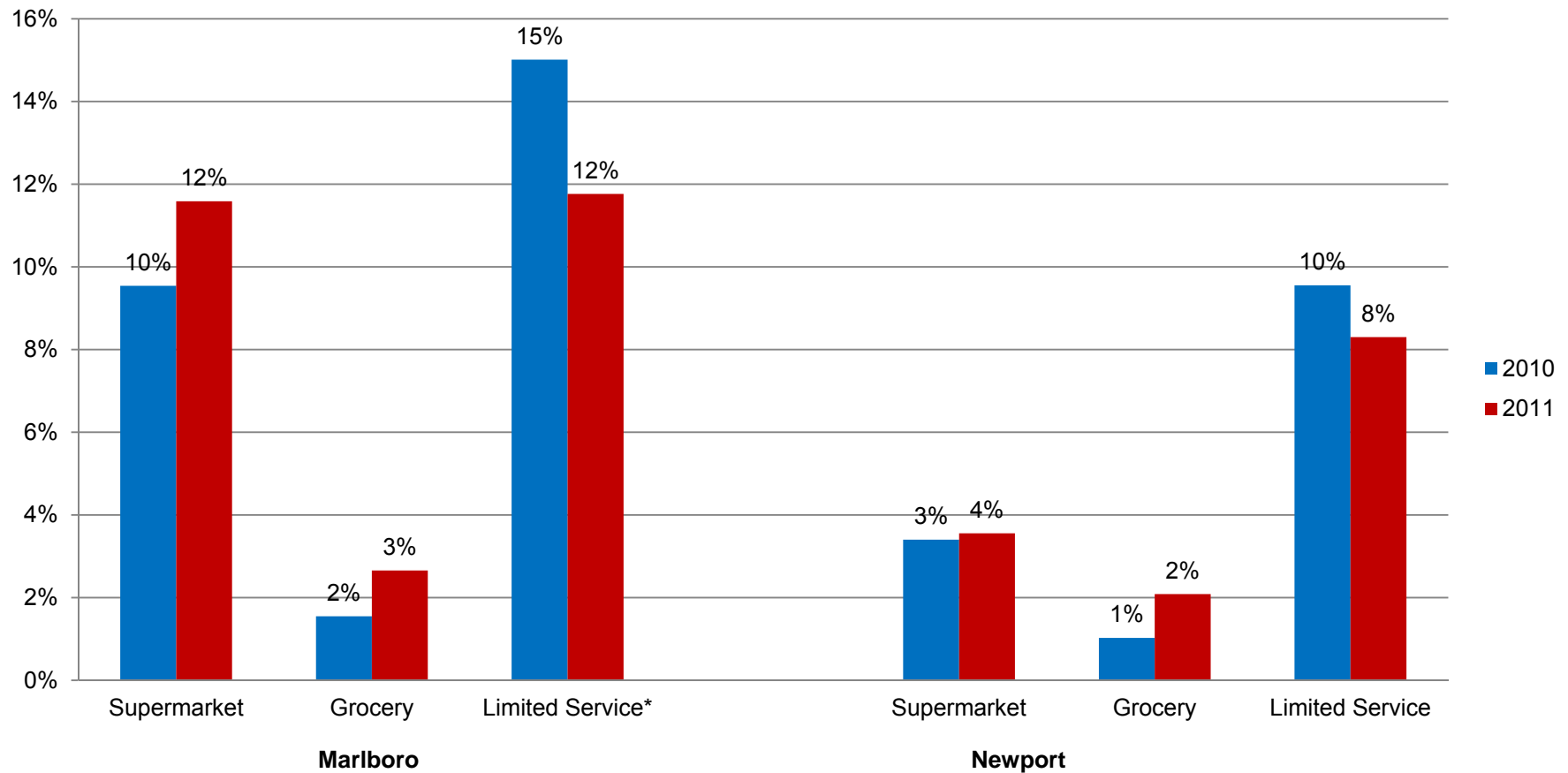
Notes: The following comparisons are significantly different at $p < 0.05$:
 African American Quartiles: Newport: and Cheapest Low vs. High
 Latinos Quartiles: Newport and Marlboro: Low vs. High

Cheapest Cigarette Pack

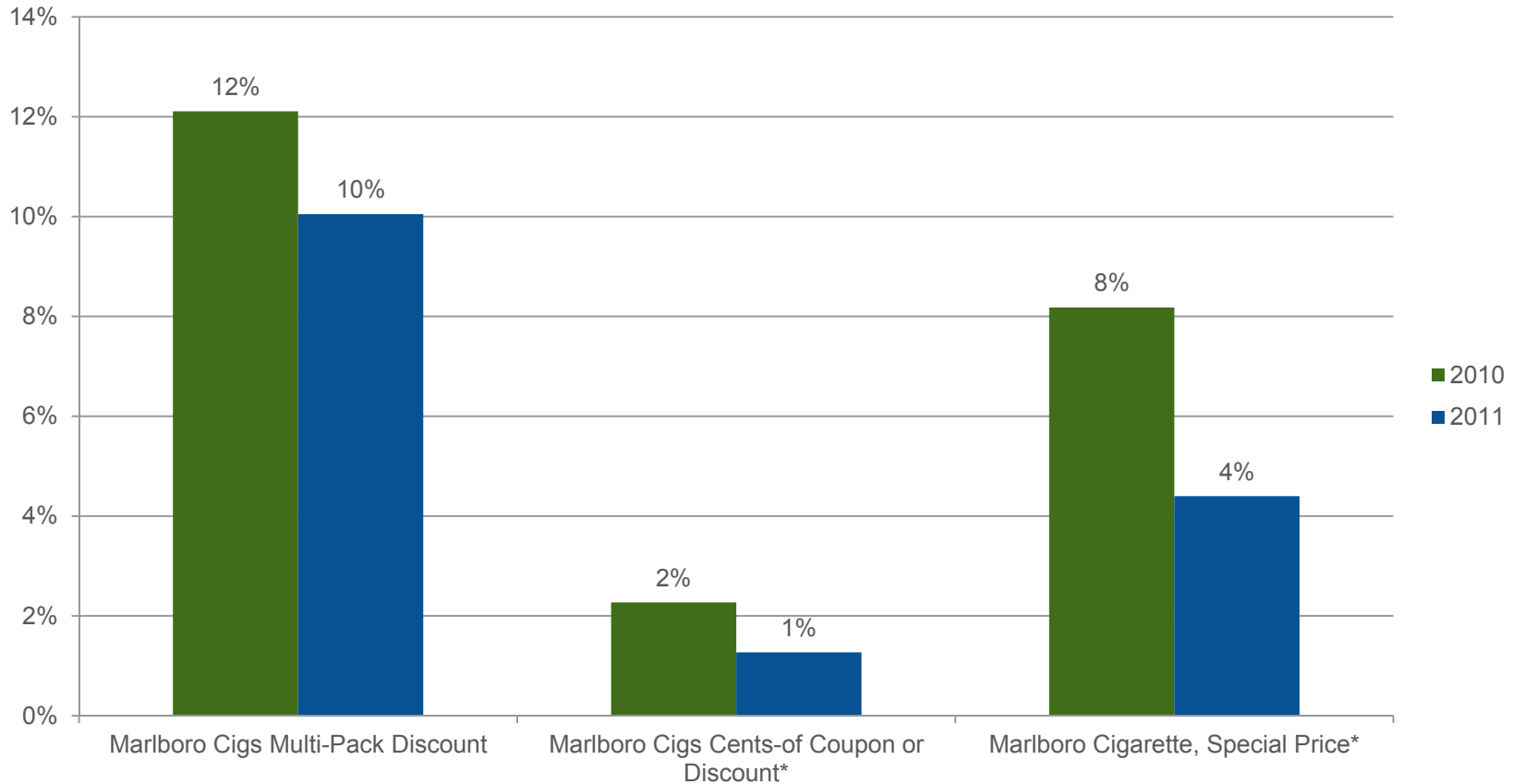
- Data collectors instructed to look for the lowest priced cigarette sold by the pack in regular or king size (95 mm).
 - Told it could be a premium brand and/or same as recorded for Marlboro, Newport/Kool or Camel
 - Multiple brands same price---first code Marlboro- Newport- Kool-Other
- Preliminary 2011 Data Top 5 by Brand:

	% of Stores	Average Price
Pall Mall	33%	4.19
Maverick	12%	4.92
Pyramid	10%	4.15
L&M	8%	4.82
Marlboro Red	5%	6.45

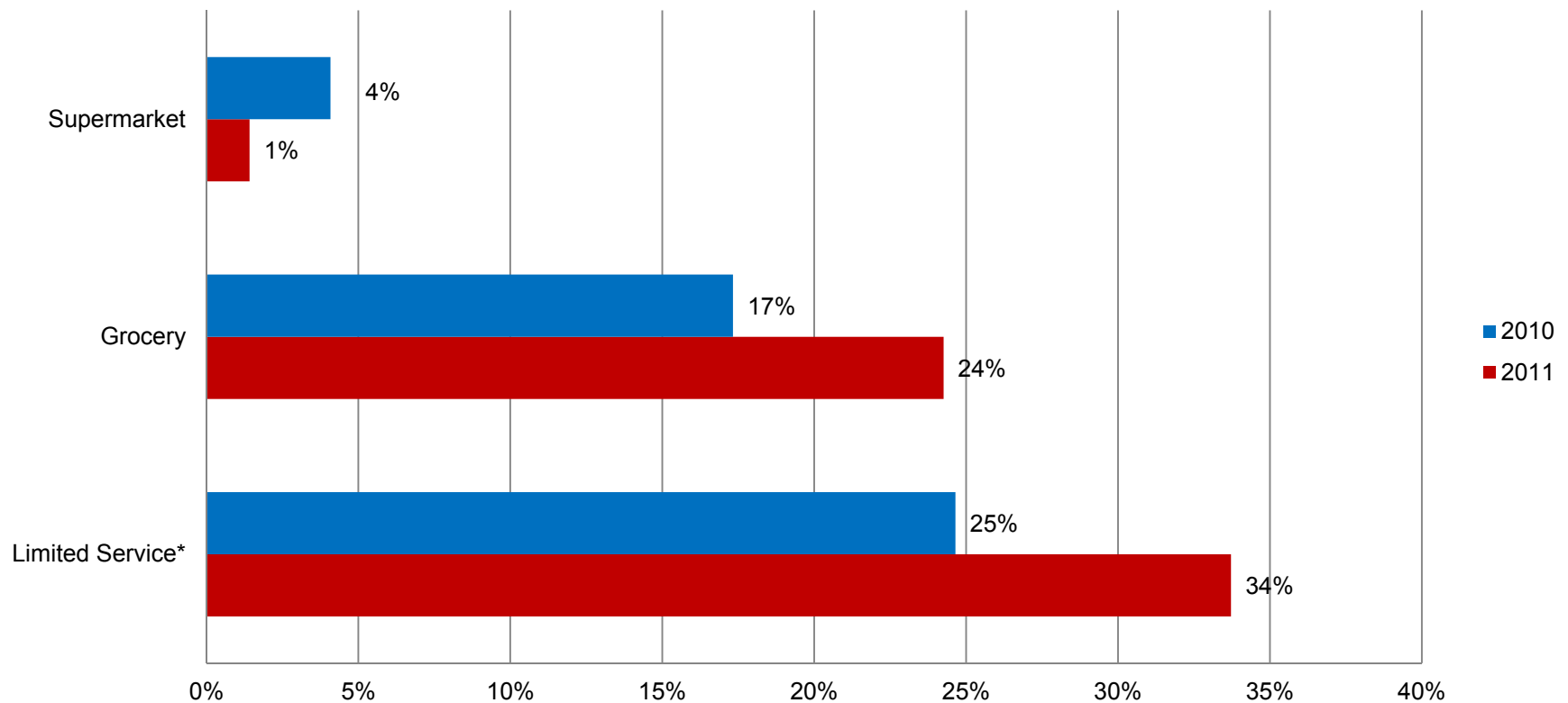
Percent of Stores with Premium Brand Promotions, by Store Type



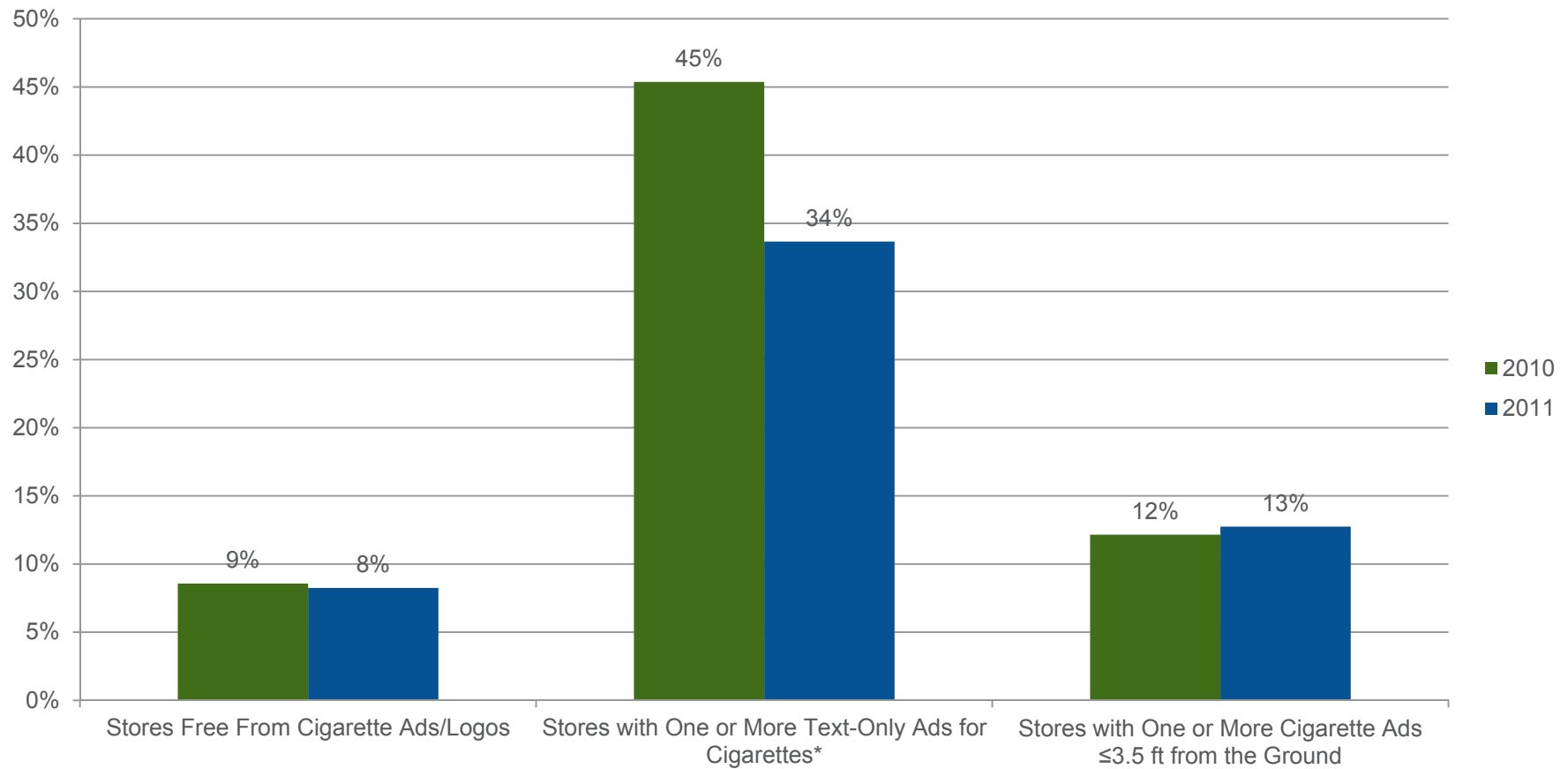
Presence of In-Store Promotions, % Retail Stores with Tobacco Products, 2010 and 2011 (weighted)



Percent of Stores with Interior Cigarette Ads Away from Cash Register, by Store Type



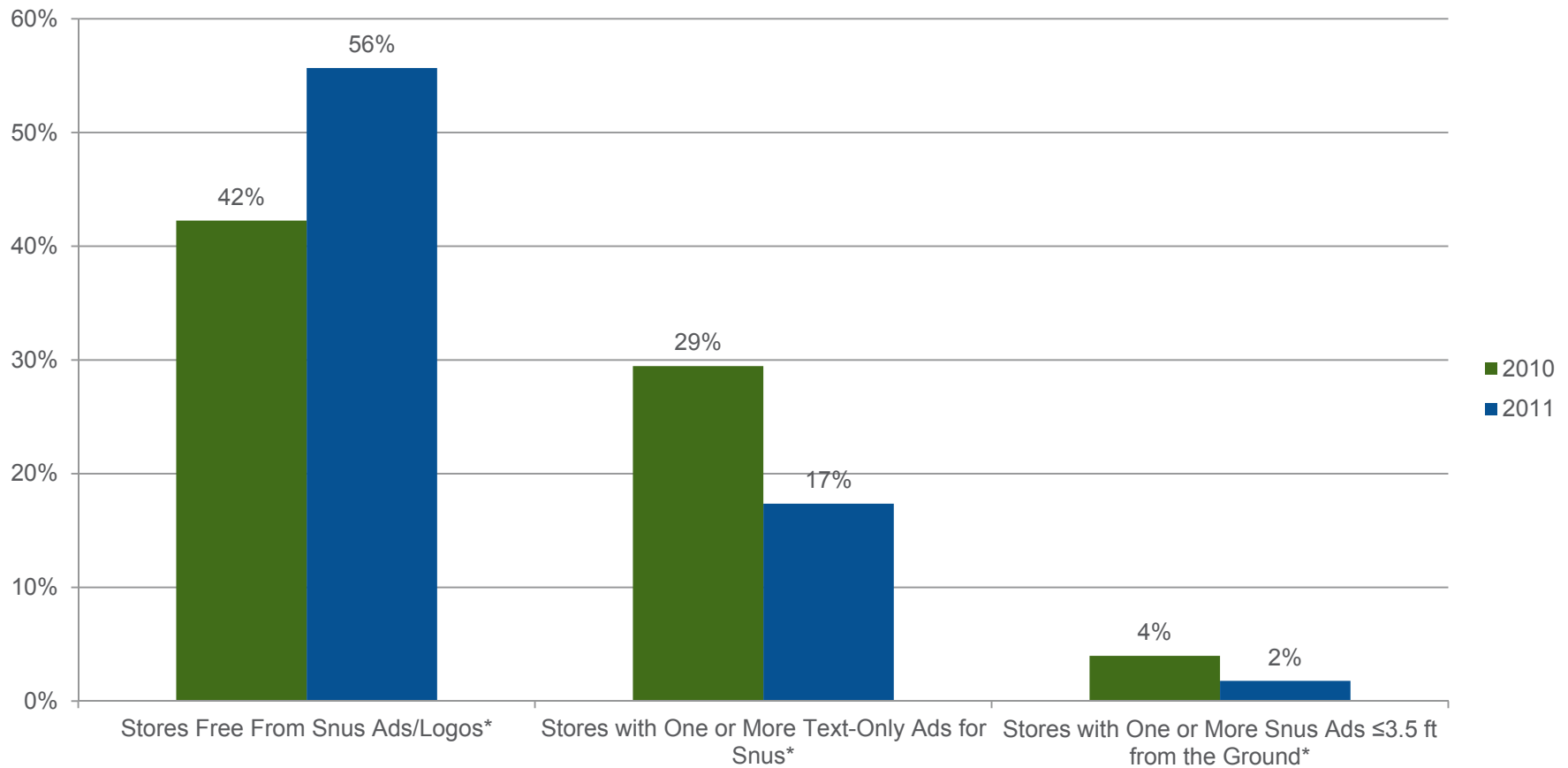
Presence of Interior Cigarette Advertising % Retail Stores that Sell Tobacco Products, 2010 and 2011 (weighted)



bridging the gap

*p <.0001

Presence of Interior Snus Advertising % Retail Stores that Sell Tobacco Products, 2010 and 2011 (weighted)

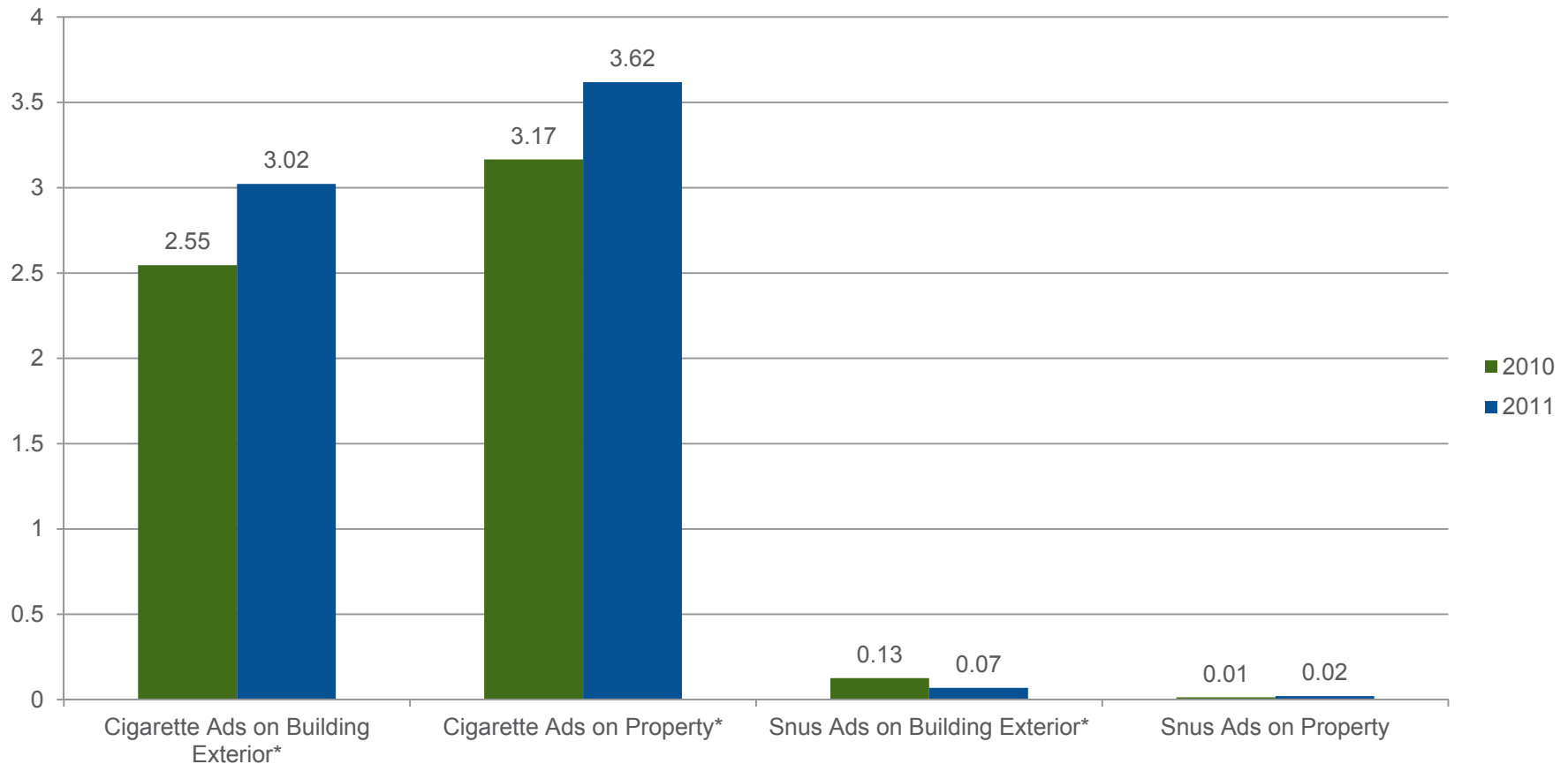


bridging the gap

*p <.001

Presence of Exterior Advertising

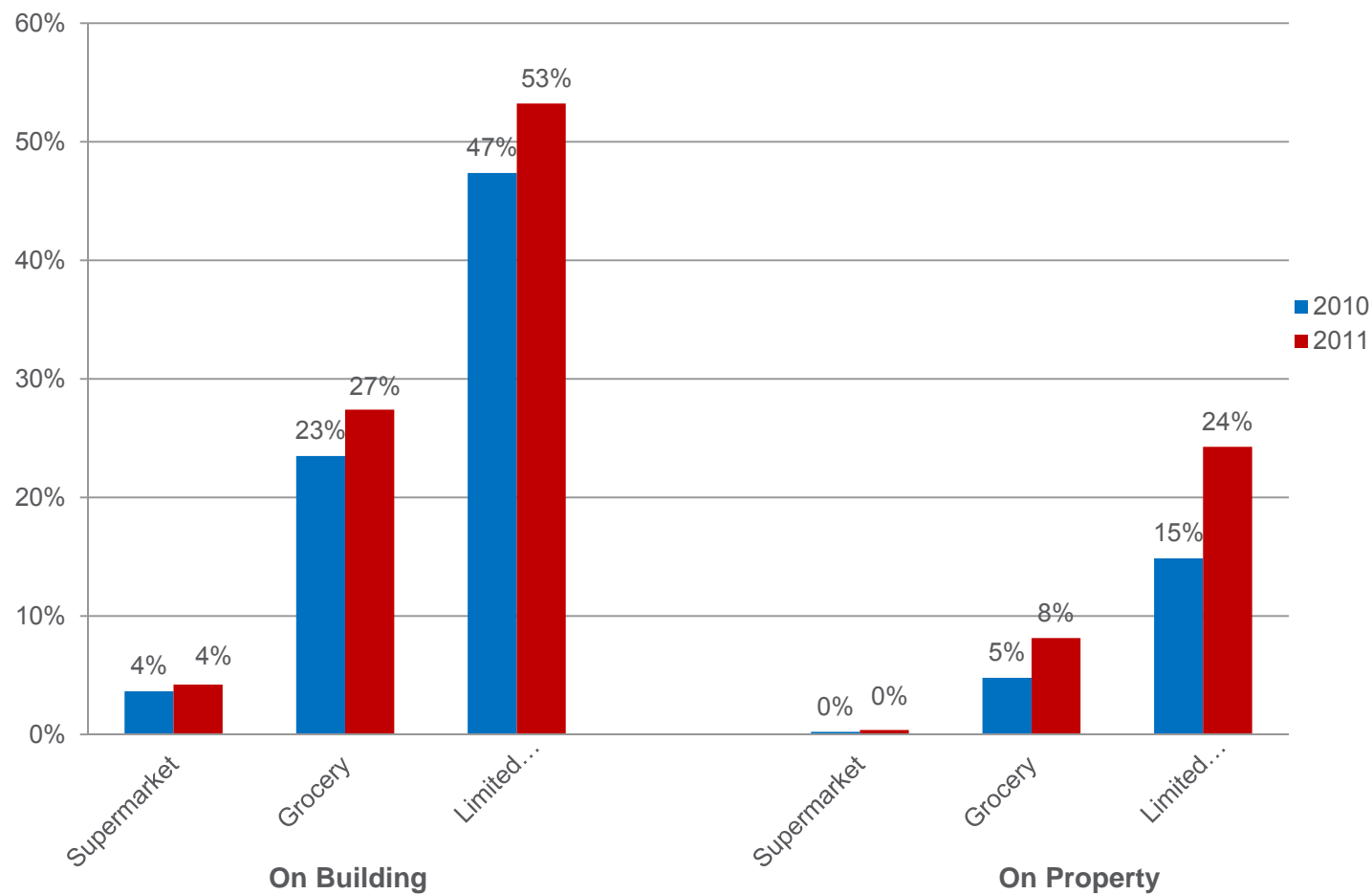
% Retail Stores that Advertise Cigarette and Snus Products, 2010 and 2011 (weighted)



bridging the gap

*p <.001

Percent of Stores with Exterior Cigarette Ads on Building and on Property, by Store Type



Aim 3: Purchase Behaviors

bridging the gap

Specific Aims

Aim 3: Assess the impact of tobacco product prices, price reducing promotions, and related policies on tobacco product purchasing behaviors

- Combines policy data from Aim 1 and price data from Aim 2 with various survey data on:
 - tobacco product and brand choices (substitution, switching-down, etc.)
 - purchase type and location (single pack vs. carton; discount outlets; reservations and cross-border; etc.)
 - use of price-reducing promotions (e.g. multi-pack offers, coupons)
 - differences by age, gender, SES, race/ethnicity, tobacco use

Methods

- Probability sampling methods are used to generate a pool of phone numbers from which Computer-Assisted Telephone Interviewing (CATI) staff call.
- The interviewer asks screening questions regarding the size of household, and asks to speak to the adult whose birthday is coming up next.
- The interviewer conducts a short tobacco use screening survey to determine whether the selected adult has used any tobacco products in the past 12 months.

Methods

- The interviewer indicates that, to thank the respondent for his/her time, we will send a check for \$20.
- The survey takes approximately 45 minutes.
- Survey questions include:
 - Tobacco product use history and current tobacco product use
 - Beliefs about tobacco use, for example, beliefs about the health effects of smoking
 - Warning labels: salience, perceptions of effectiveness, and reports of respondent's reactions to the labels
 - Price of tobacco products and location/frequency of product purchases

Preliminary Results

- April 2013 - Completed Adult Tobacco Survey in 161 communities where POS observations were conducted; 1,441 completed surveys

Products	Current Users	Former Users
Cigarettes	1013 (70.2%)	86 (6.0%)
E-cigarettes	97 (6.8%)	84 (5.9%)
Regular Cigars	131 (9.1%)	43 (3.0%)
Cigarillos	128 (8.9%)	64 (4.4%)
Little Filtered Cigars	69 (4.8%)	38 (2.6%)
Pipe	45 (3.1%)	11 (0.8%)
Hookah	37 (2.6%)	15 (1.0%)
Snus	19 (1.3%)	9 (0.6%)
Smokess Tobacco	96 (6.7%)	25 (1.7%)
Dissolvable Tobacco	4 (0.3%)	0 (0.0%)

bridging the gap

Preliminary Results

- E-cigarette use

E-Cigarette use	Number (percent of sample)
Never used	990 (68.7%)
Current daily users	25 (1.7%)
Current someday users	72 (5.0%)
Experimented (1 or fewer)	233 (16.2%)
Recent (<12 months) former user	84 (5.8%)
Long term (>12 months) former user	36 (2.5%)
Don't know	1 (0.1%)
Exclusively use e-cigarettes	9 (0.6%)
Use 1 or more combustible, no non-combustible, & e-cigs	162 (11.2%)
Use combustible, non-combustible & e-cigs	10 (0.7%)

Preliminary Results

- Multi-product use

Products	Current Users
0	211 (14.6%)
1	941 (65.3%)
2	209 (14.5%)
3	58 (4.0%)
4	13 (0.9%)
5	36 (0.4%)
6	1 (0.1%)

VERY Preliminary Results

(among 225 completes interviews as of 12/10/12)

Reasons for Use - Percent who responded 'Important to me':

	N*	Cost less	People in media	Can use where smoking not allowed	Less harmful	Come in appealing flavors	Help quit	Don't smell	Feels like smoking	More acceptable to non-smokers	People important to me use it
E-Cigarettes	38	52.6	2.6	55.3	68.4	34.2	73.7	73.7	73.7	57.9	23.7
Regular cigars	36	5.6	0.0	-	19.4	27.8	16.7	8.3	8.3	5.6	5.6
Cigarillos	39	30.8	7.7	-	28.2	38.5	20.5	20.5	17.9	7.7	12.8
Little Filtered Cigars	21	42.9	9.5	-	14.2	28.6	23.8	14.3	33.3	9.5	4.8
Pipes	15	13.3	0.0	-	13.3	26.7	20.0	13.3	-	6.7	20.0
Hookah	22	0.0	0.0	9.1	22.7	40.9	9.1	18.2	-	27.3	9.1
Snus	15	13.3	0.0	33.3	20.0	26.7	20.0	26.7	-	20.0	13.3
Smokeless	43	25.6	4.7	23.3	20.9	16.3	16.3	23.3	-	7.0	18.6
Disolvable	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0

*Note: questions were asked among current users, try users, and recent (12-month) former users of each product

bridging the gap

Aim 4: Tax Avoidance & Evasion

bridging the gap

Specific Aims

Aim 4: Estimate the extent of and determinants of tax avoidance and tax evasion

- uses multiple methods including:
 - littered cigarette pack collections
 - individual self-reports
 - archival data
 - econometric modeling
- identifies key individual and policy influences on tax avoidance and evasion and differential impact on key subpopulations

Using littered cigarette packs to detect tax avoidance and evasion

Methodology:

- Data collection teams used a strict protocol to collect littered cigarette packs at each BTG-COMP data collection site
- Packs were returned to UIC and about 15 items of information relating to each pack were coded
- Most important items were
 - Location found
 - Brand
 - Whether cellophane was present and
 - Type of tax stamp found, if any

Overview

- Total number of packs: 3,840
- Number of catchment area: 139
- Number of states: 36
- % of packs with cellophane: 55.5%

Tax Compliance

- Among all packs with cellophane:

Pack with:	Mean	Standard Deviation
A state tax stamp	92.12%	26.95%
the state tax stamp matches the state in which pack was found	81.89%	

Statistics by Catchment

	Mean	Std. Dev.	Min	Max
# of packs	65.13	42.75	0	172
# of packs with cellophane	35.41	21.97	0	82
# of packs with tax stamps	32.66	20.28	0	71
# of packs with tax stamps that match the state in which they were found	29.51	19.42	0	71

Key Preliminary Findings

- We found 9 or more packs with cellophane (so stamp can be identified) in 50% of catchment areas. For these catchment areas we can estimate “population” compliance with reasonable statistical confidence.
- 25% of catchment areas had perfect (100%) compliance
- 15% of catchment areas had compliance of less than 50%

Next Steps

- Clean and benchmark the data
 - Check for data anomalies/miscoding
 - Compare brand distribution in our data to expected brand distribution
- Map the geographical variation in tax compliance and provide more descriptive statistics
- Investigate determinants of cigarette tax avoidance
 - Rate of tax
 - Tax related policies
 - Availability of alternative supplies (e.g. cross border, reservation)
 - Economic and demographic characteristics of community
- Compare our results with other measures/predictions

bridging the gap

Aim 5: Tobacco Use

bridging the gap

Specific Aims

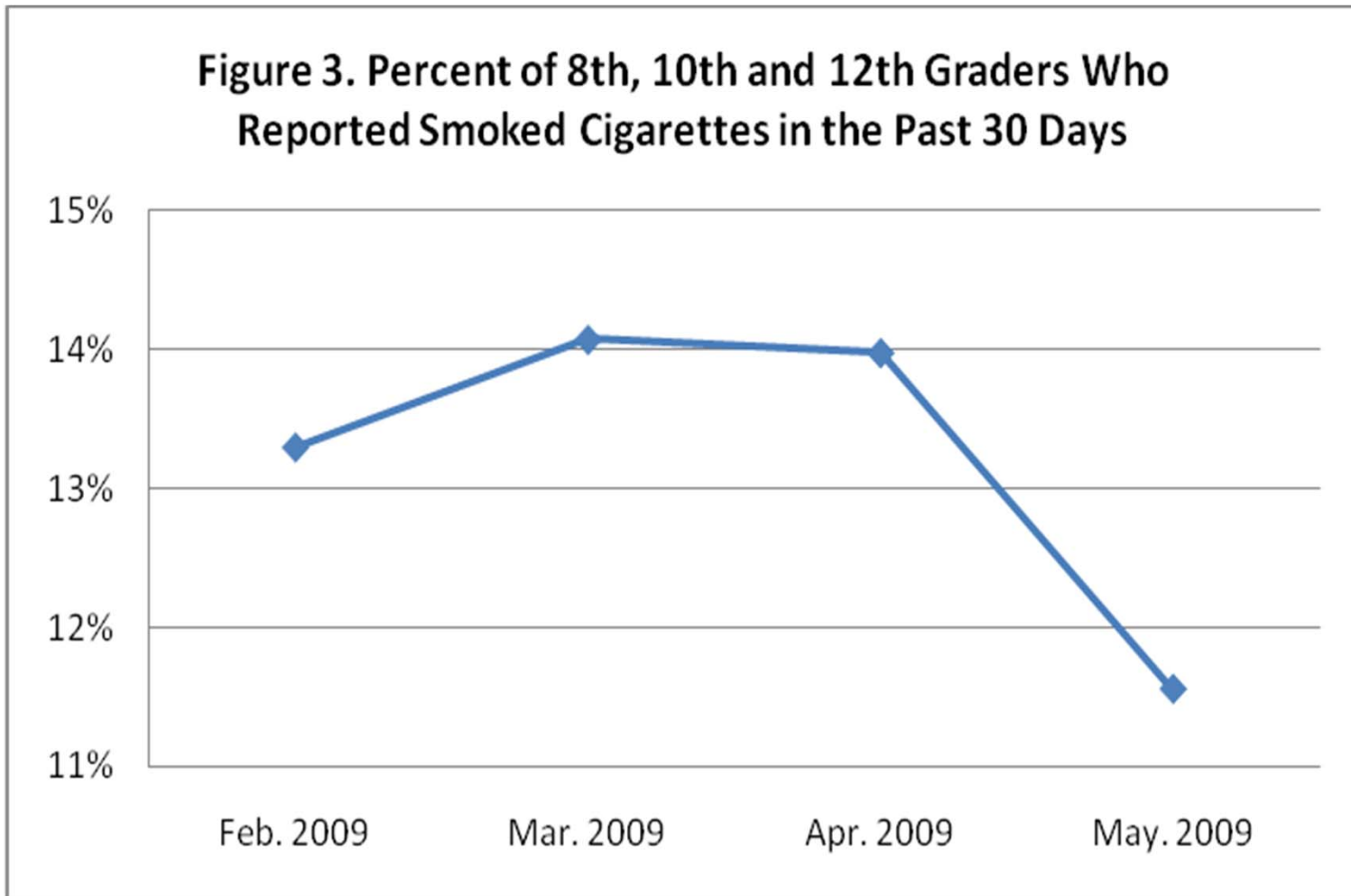
Aim 5: Examine the impact of tobacco product prices, price-reducing promotions, and related policies on tobacco use behaviors

- extends Aims 3 and 4 by estimating impact on:
 - prevalence, frequency, and intensity of tobacco use
 - substitution among tobacco products
 - uptake and cessation
- assesses differential impact by age, gender, SES, race/ethnicity, and tobacco use
- identify non-linearities in the impact of price on tobacco use

2009 Federal Tax Increases

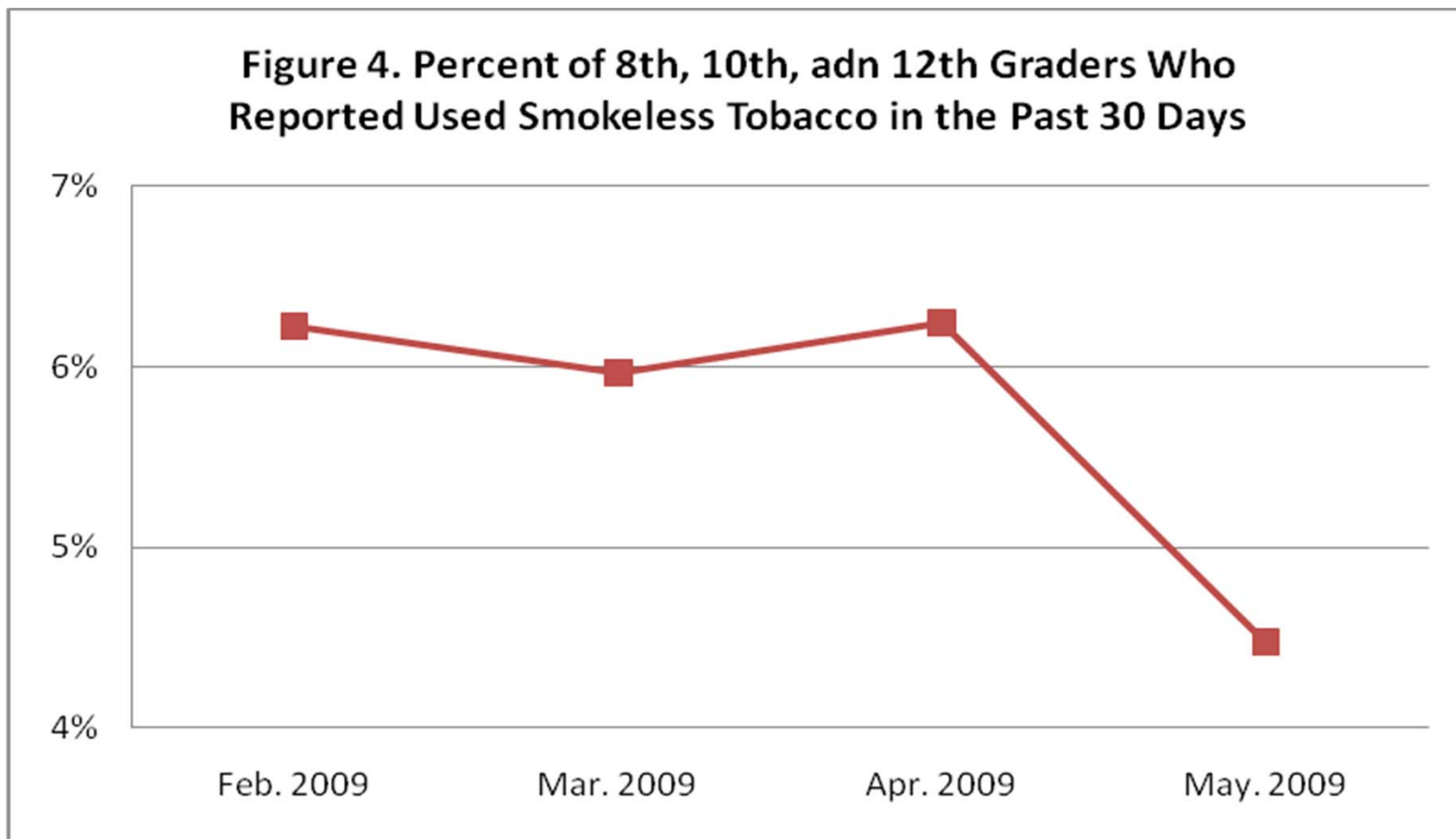
- 2008 & 2009 Monitoring the Future Surveys
 - compare within 2009
 - compare same schools 2008-2009
 - alternative cut points
 - cigarette smoking & smokeless tobacco use
 - control for variety of individual, school, state factors
 - alternative estimation strategies

Results



bridging the gap

Results

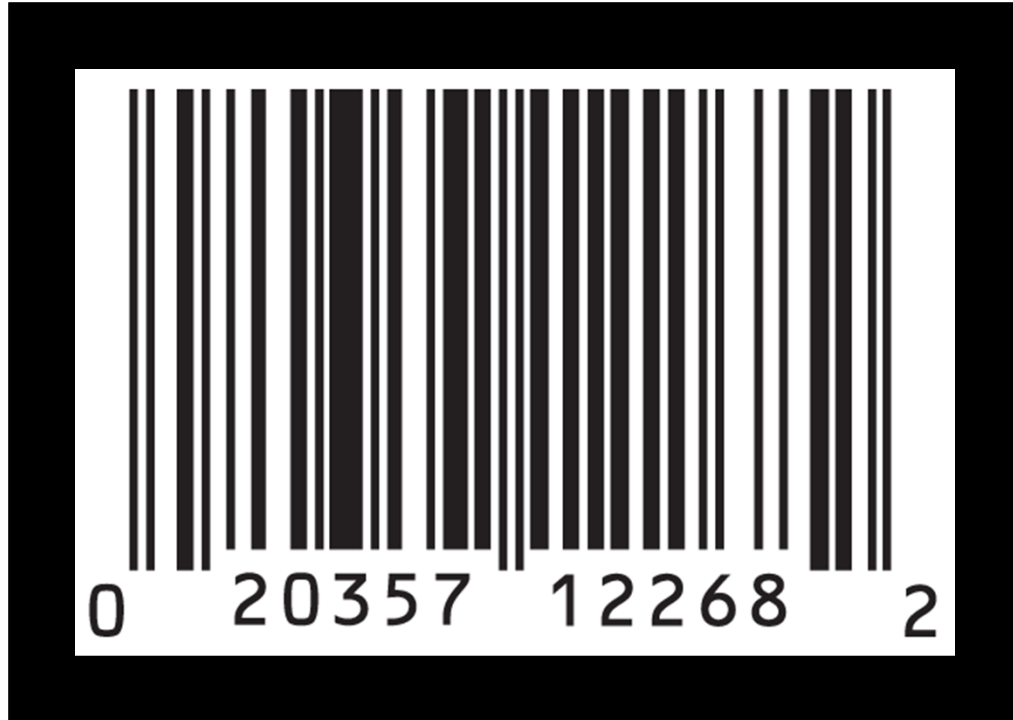


Results - Summary

Cigarette Smoking (Pre-tax: before April 1, 2009; Post-tax: on or after May 1, 2009)	2009 MTF Model 2	2008 and 2009 MTF Model 2	DD Model 2
Pre Tax Increase Mean (%)	13.4%	12.8%	12.8%
Estimated Percentage Point Decrease after Tax Increase	-1.3	-1.4	-1.7
Estimated Percent Decrease in Smoking after Tax Increase	-9.7%	-11.0%	-13.3%
Estimated Price Elasticity	-0.44	-0.50	-0.60
Number of FEWER Students (age 14 - 18) Smoking in the Past 30 Days Due to the Tax Increase (in 1,000)	220	237	287
Smokeless Tobacco (Pre-tax: before April 1, 2009; Post-tax: on or after May 1, 2009)	2009 MTF Model 2	2008 and 2009 MTF Model2	DD Model 2
Pre Tax Increase Mean (%)	6.1%	5.0%	5.0%
Estimated Percentage Point Decrease after Tax Increase	-1.2 ¹	-1.2	-0.8 ¹
Estimated Percent Decrease in Use of Smokeless Tobacco after Tax Increase	-19.8%	-24.0%	-16.0%
Estimated Price Elasticity ²	-1.46	-1.84	-1.23
Number of FEWER Students (age 14 - 18) Using Smokeless Tobacco in the Past 30 Days Due to the Tax Increase (in 1,000)	203	203	135

bridging the gap

UPC – Universal Product Code



Short Definition:

A UPC Barcode consists of a scannable strip of black bars with white spaces, it must contain a 12 numerical digit sequence. Letters and characters are not allowed to appear.

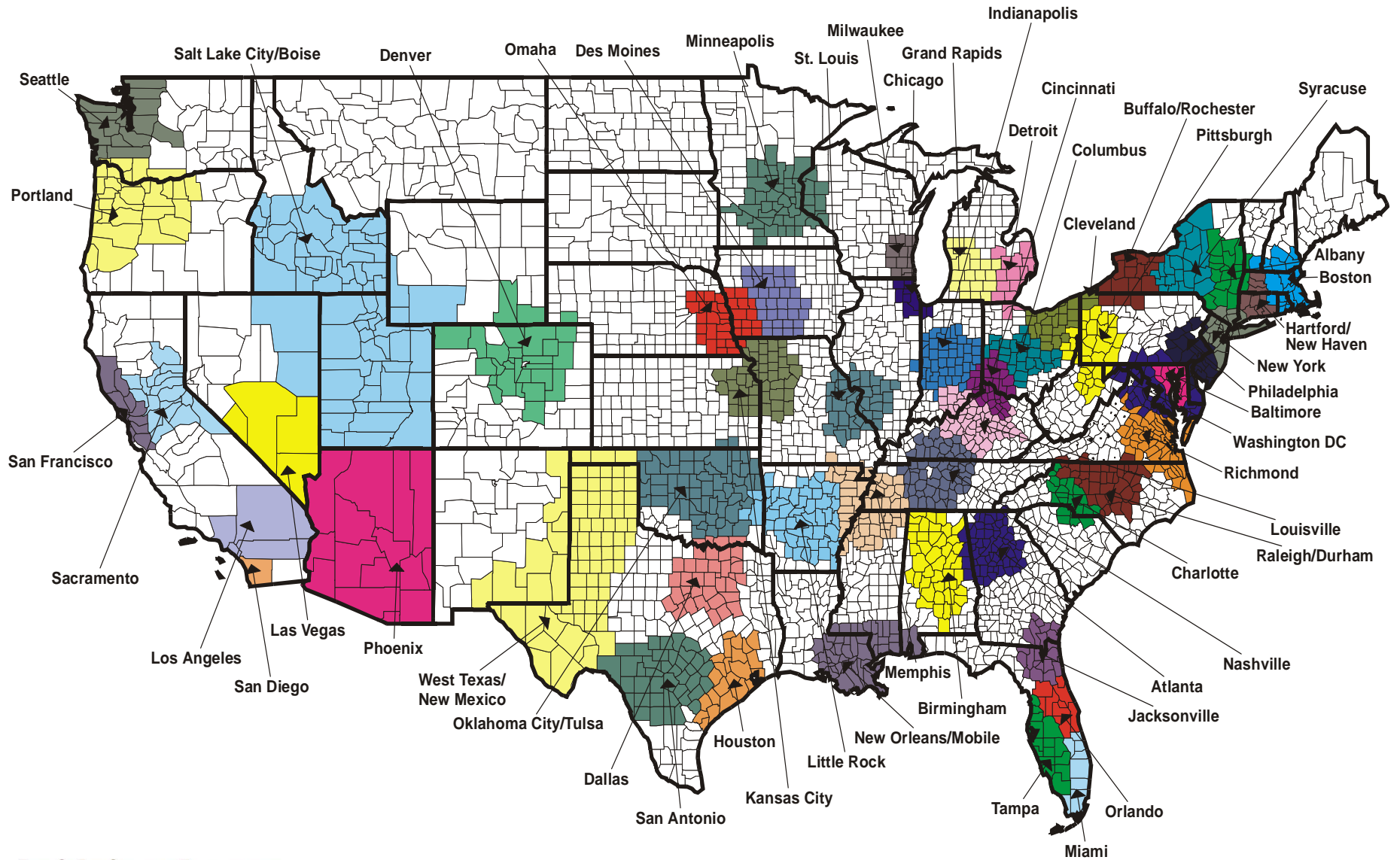
Picture Source: http://www.nytimes.com/2013/01/06/magazine/who-made-that-universal-product-code.html?_r=0

bridging the gap

Nielsen Store Scanner Data

Dataset	Population and Sample Size	Years	Key Constructs
Nielsen Store Scanner Data (cross-sectional)	<p>Populations: all food, drug, mass, and convenience stores</p> <p>Sample: participating food, drug, and mass stores in 52 markets defined by Nielsen, and participating convenience stores in 25 markets defined by Nielsen</p>	<p>Quarterly data from 2007 - 2014 for food, drug, mass stores; Quarterly data from 2010 - 2014 for convenience stores</p>	<ul style="list-style-type: none"> • Types of tobacco products and stop-smoking products. • Prices for all tobacco products and stop-smoking products at UPC / market level • Types and sizes of price promotions associated with each tobacco product • Sales of tobacco products and stop-smoking products at UPC/market level.

Nielsen Store Scanner Data



bridging the gap

Nielsen Store Scanner Data: Convenience Stores

Organization	Store Count	Organization	Store Count
7 ELEVEN	6000	UNITED DAIRY FARMERS	185
SHELL	4585	BP CONNECT	183
CIRCLE K	3138	FAST STOP	179
CHEVRON	3061	FLASH FOODS	178
MOBIL	2415	XTRA MART	172
BP	2297	UNI MART	171
EXXON	2296	WHITE HEN PANTRY	170
CITGO	2034	THORNTONS	159
CASEYS GENERAL STORE	1458	MEIJER GAS STATION	152
SPEEDWAY	1353	TETCO	148
AMOCO	1333	KWIK FILL/RED APPLE	146
KANGAROO EXPRESS	1197	SINCLAIR	138
MARATHON	1111	VILLAGE PANTRY	138
VALERO	1052	KRAUSZERS	136
SUNOCO	1034	WILSON FARMS STORE	134
AM PM MINI MARKET	890	KWIK SHOP/KROGER	132
TEXACO	806	TOM THUMB/KROGER	129
CONOCO	681	QUICK CHEK	120
A PLUS	639	AMERISTOP	117
HESS	599	ROYAL FARMS	117
WAWA FOODMARKET	582	HESS EXPRESS	115
CUMBERLAND FARMS	572	GETGO	109
PHILLIPS 66	534	QUIK STOP/CA	106
KUM & GO	444	SPEEDY STOP	106
76	405	FAVORITE MARKET	99
AMPRIDE/CENEX	388	BP SHOP	96
HOLIDAY STATIONS	366	GO MART FOOD STORE	95
SHEETZ	357	TRUE NORTH	94
VALERO	338	TEDESCHI FOOD SHOP	93
KWIK TRIP	308	TRADE WLCO	93
PILOT TRAVEL CENTER	301	FAS MART	93
E Z MART	299	LIL CRICKET	89
TURKEY HILL	246	SCOTCHMAN STORE	88
MAPCO EXPRESS	232	GAS AMERICA	87
ARCO	231	BIG APPLE	85
CLARK	228	FARM STORE	84
WLCO FOOD MART	215	LIL CHAMP	83
CONVENIENT FOOD MART	208	GATE FOOD POST	83
MAVERIK COUNTRY STORE	196	NICE N EASY GROCER	82
SUPERAMERICA	194	TIMEWISE FOOD STORE	82
FLYING J	187	ADMIRAL PETROLEUM	81
		2 GO MART	77

bridging the gap

Nielsen Store Scanner Data: Food Stores

Organization	Store Count	Organization	Store Count	Organization	Store Count
KROGER	1345	A&P SAV A CENTER	95	BIG M	39
FOOD LION	1250	PICK N SAVE (CORP)	95	REDNERS	39
SAVE A LOT	1176	FRESH MARKET	88	CITY MARKET	38
PUBLIX	1010	RALEYS FOOD & DRUG	84	GENUARDI/MAD GROCER	37
SAFEWAY	987	BASHAS	83	GRISTEDES	35
ALBERTSONS	747	DOMINICKS	80	COBORNS/CASH WISE	35
WMNN DIXIE	506	DILLON	80	ROUSES	35
STOP & SHOP	378	CUB FOODS	80	GLENS MARKETS	34
PIGGLY WIGGLY CAROLINA	378	HOMELAND	78	GREERS/FOOD TIGER	33
VONS	291	TOPS	75	RAMEY SUPER MARKET	33
HEB	269	WEGMANS	74	TOP FOOD/HAGGENS	33
RALPHS GROCERY	260	QUALITY	74	SENTRY/SUPER SAVER	32
GIANT EAGLE INC	219	PIGGLY WIGGLY/FOOD GIANT	71	HARDINGS	32
SHOP RITE/WAKEFERN	218	LUCKY STORES	70	FAMILY FARE	31
BILO	215	HARVEYS SUPERMARKET	69	RAINBOW (ROUNDY'S)	31
INGLES	202	SOUTHERN FAMILY MARKETS	68	MARKET BASKET	30
HYVEE	200	PIGGLY WIGGLY	67	G U MARKETS	30
MEIJER	189	SHOPPERS FOOD WAREHOUSE	63	JAY C STORE	29
HARRIS TEETER	186	WALDBAUM	63	FULMER SUPERMARKET	29
GIANT (MD)	180	HARPS	63	STRACK & VAN TIL	29
SHAWS SUPERMARKETS	178	SUPER FRESH	63	UKROPS	28
JEWEL OSCO	175	TOM THUMB	62	SUPER ONE	27
HANNAFORD/SHOP N SAVE	167	PRICE CHOPPER	62	COPPS CO	26
STATER BROS MARKET	166	HOUCHEMS/SAVE-A-LOT	62	FOOD EMPORIUM	25
BROOKSHIRE	155	DEMOULAS/MARKET BASKET	59	KINGS	25
WEIS	152	FIESTA MART	59	DAVIDS	24
GIANT (CARLISLE)	148	BASHAS FOOD CITY	59	QUALITY MARKETS	23
FOOD 4 LESS	146	LOWES/PAY N SAVE	58	NOB HILL	23
PATHMARK	142	BIG Y	57	DIERBERGS	23
SMITHS	133	NASH-FINCH	57	PIONEER/MET FD/ASSOCIATED	23
SAVE MART	129	RAYS FOOD PLACE	57	MORGANS HOLIDAY MARKET	22
FRED MEYER INC	128	SHOP N SAVE	56	THRIFTY FOODS	22
ACME MARKETS	124	UNITED	50	BUEHLER FOODS	22
FRYS	121	RANDALLS	50	KNOWLANS SUPERMKTS	22
PRICE CHOPPER	120	KING KULLEN	49	TOP VALU	22
LOWES	110	SUPER S	48	BOYERS IGA INC	22
SCHNUCK MARKETS	106	COUNTRY MART	48	LUNDS INC	21
KING SOOPER	106	P & C	46	BEL AIR MARKETS	21
MARSH	104	FARM FRESH	45	ROSAUERS	21
FOOD CITY/ KVAT	103	FOOD MAXX STORES	45	G&W FOODS/FARMERS	21
SWEETBAY	102	NIEMANN FOODS	43	BILO	20
FRESH BRANDS/PIGGLY WIGGLY	96	PRICE RITE	40	MARTINS	20

bridging the gap

Nielsen Store Scanner Data: Drug Stores

Organization	Store Count	Coop Status
CVS	6914	YES
WALGREENS	6727	YES
RITE AID	4817	YES
DUANE READE	247	YES
KERR DRUG STORES	85	YES
KINNEY DRUGS INC	84	YES
SUPER D	81	YES

Nielsen Store Scanner Data: Mass Stores

Organization	Store Count	Coop Status
KMART DISCOUNT	1287	YES
TARGET DISCOUNT	1477	YES
TARGET SUPERCENTER	247	YES
ALCO DISCOUNT	206	LMP only
PAMIDA	187	YES
SHOPKO	136	YES
ROSES STORES	103	YES
BI-MART	70	YES
KMART SUPERCENTER	38	YES

Sales Volume – Cigarettes

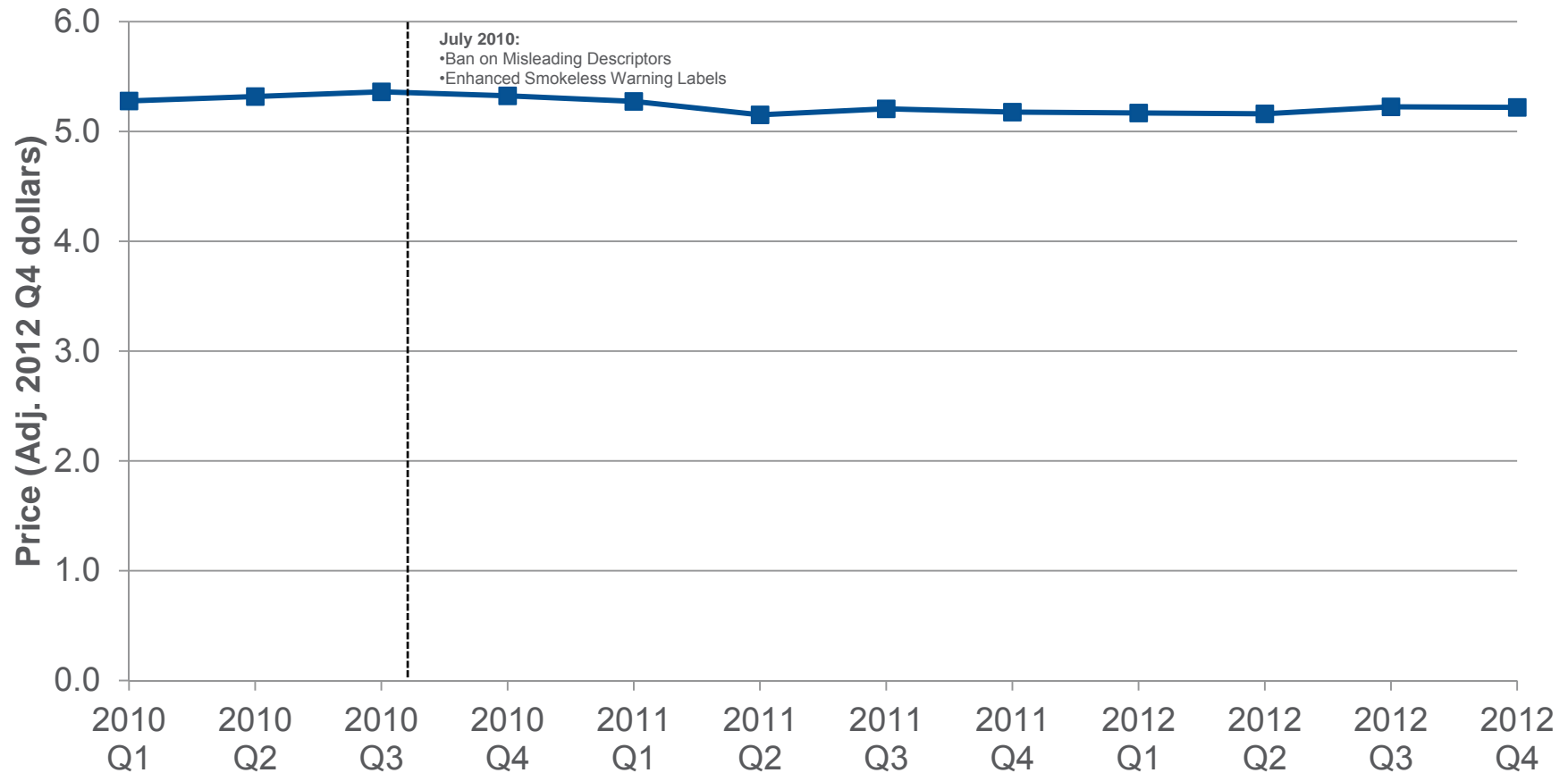
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Price Per Pack – Cigarettes

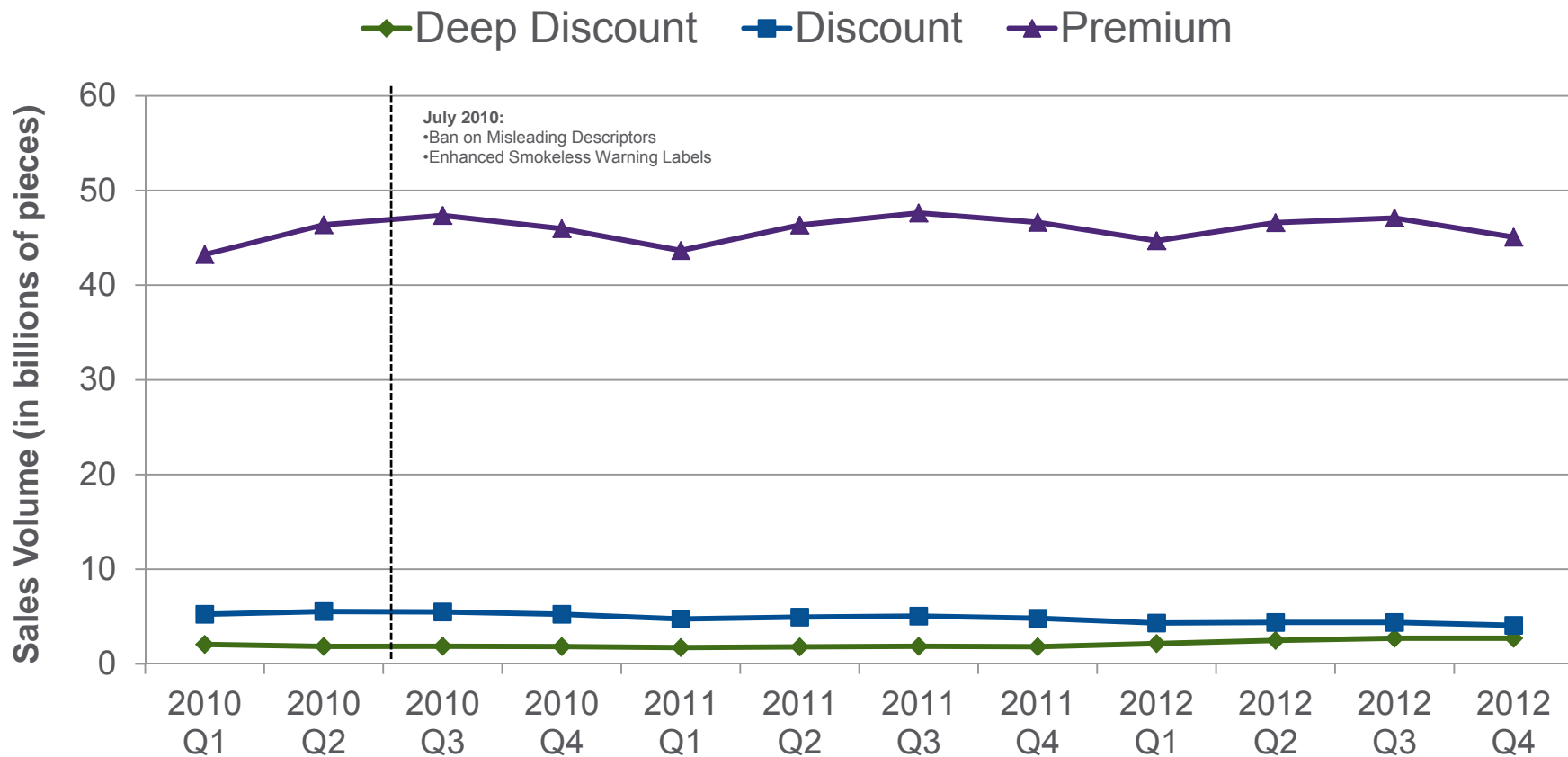
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Cigarette Sales by Brand Type:

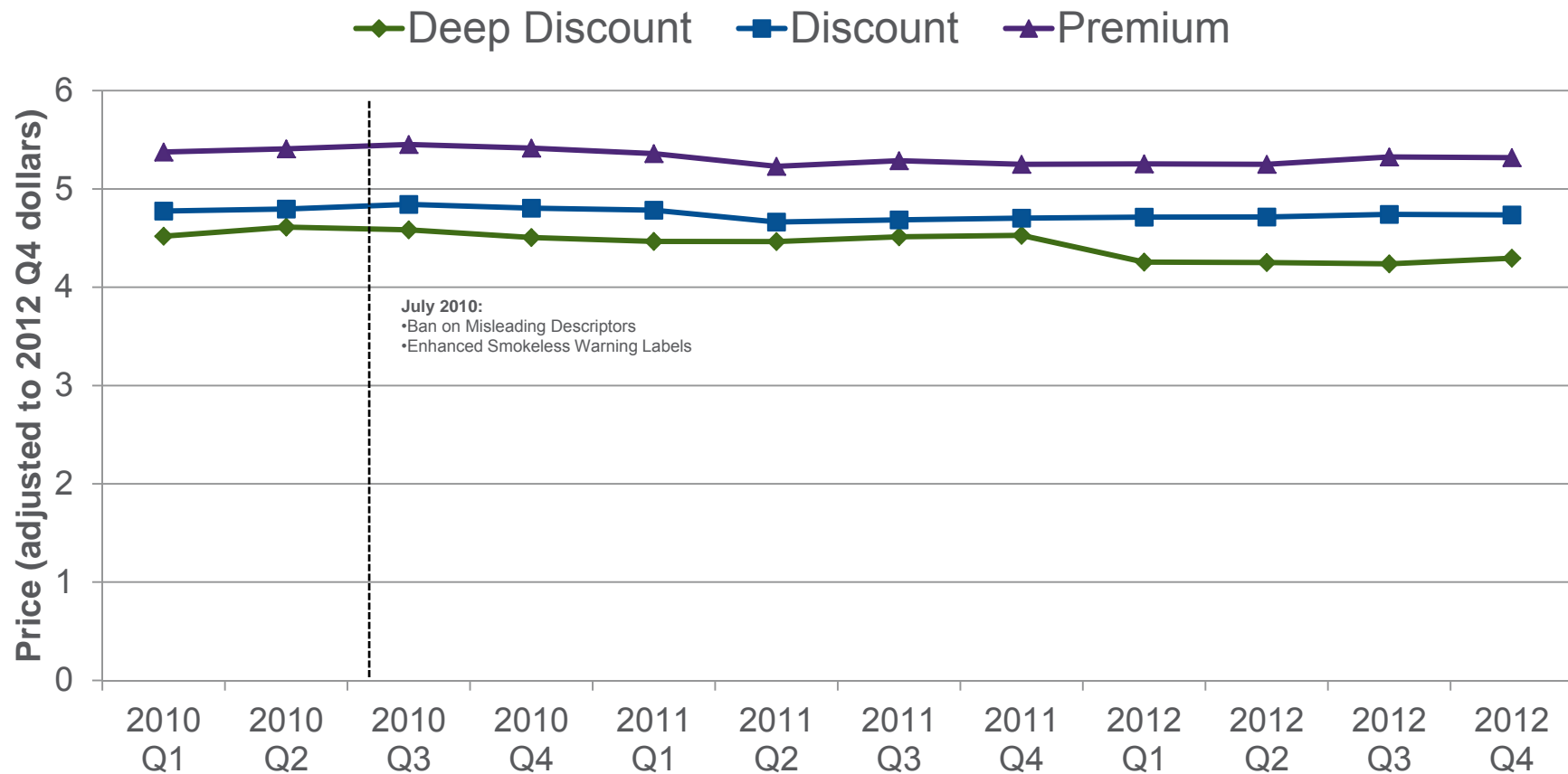
Total US Market – Combined Convenience and FDM Stores (in billions of pieces)



bridging the gap

Cigarette Per Pack Price by Brand Type:

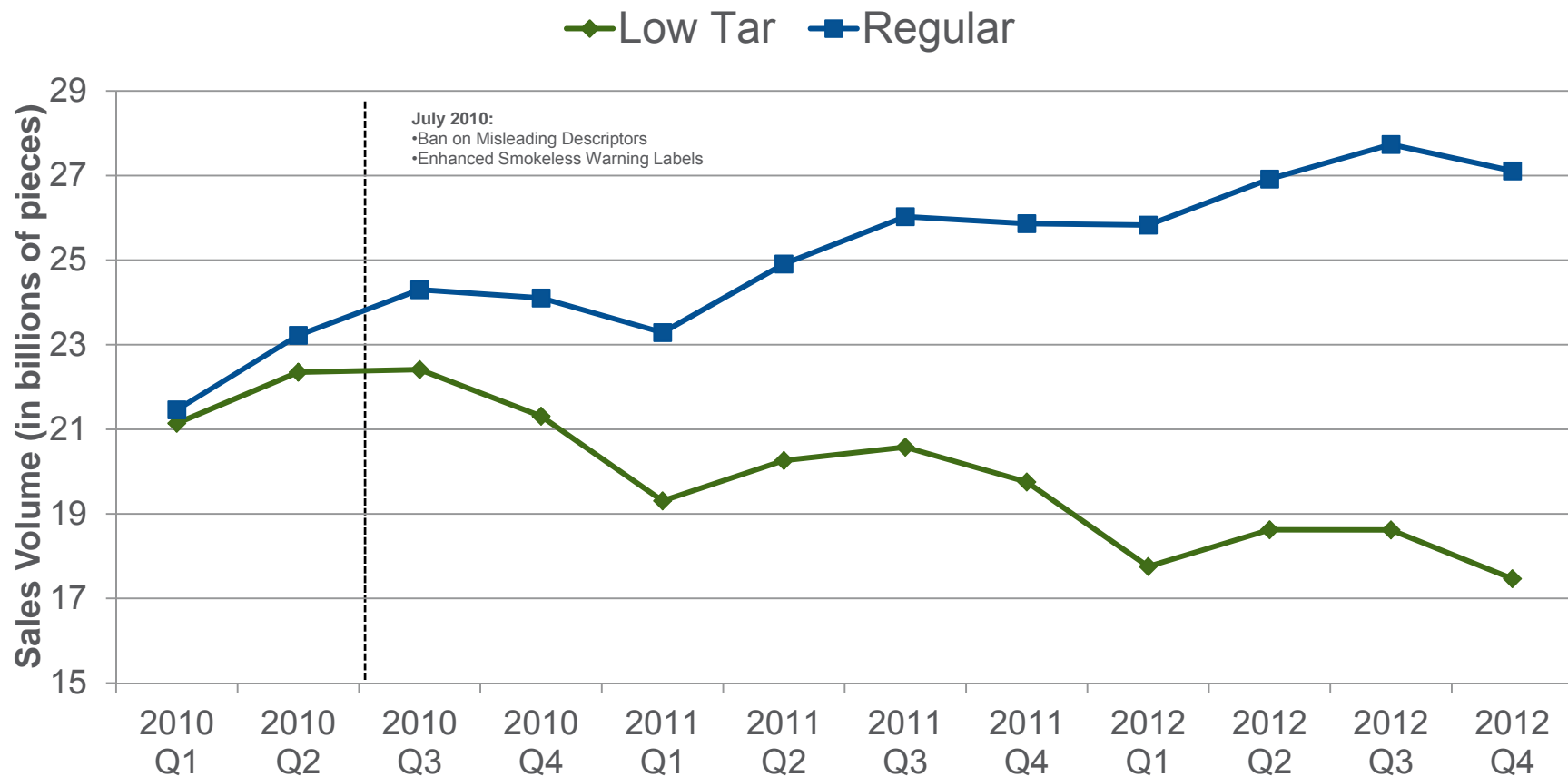
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Cigarette Sales by Type:

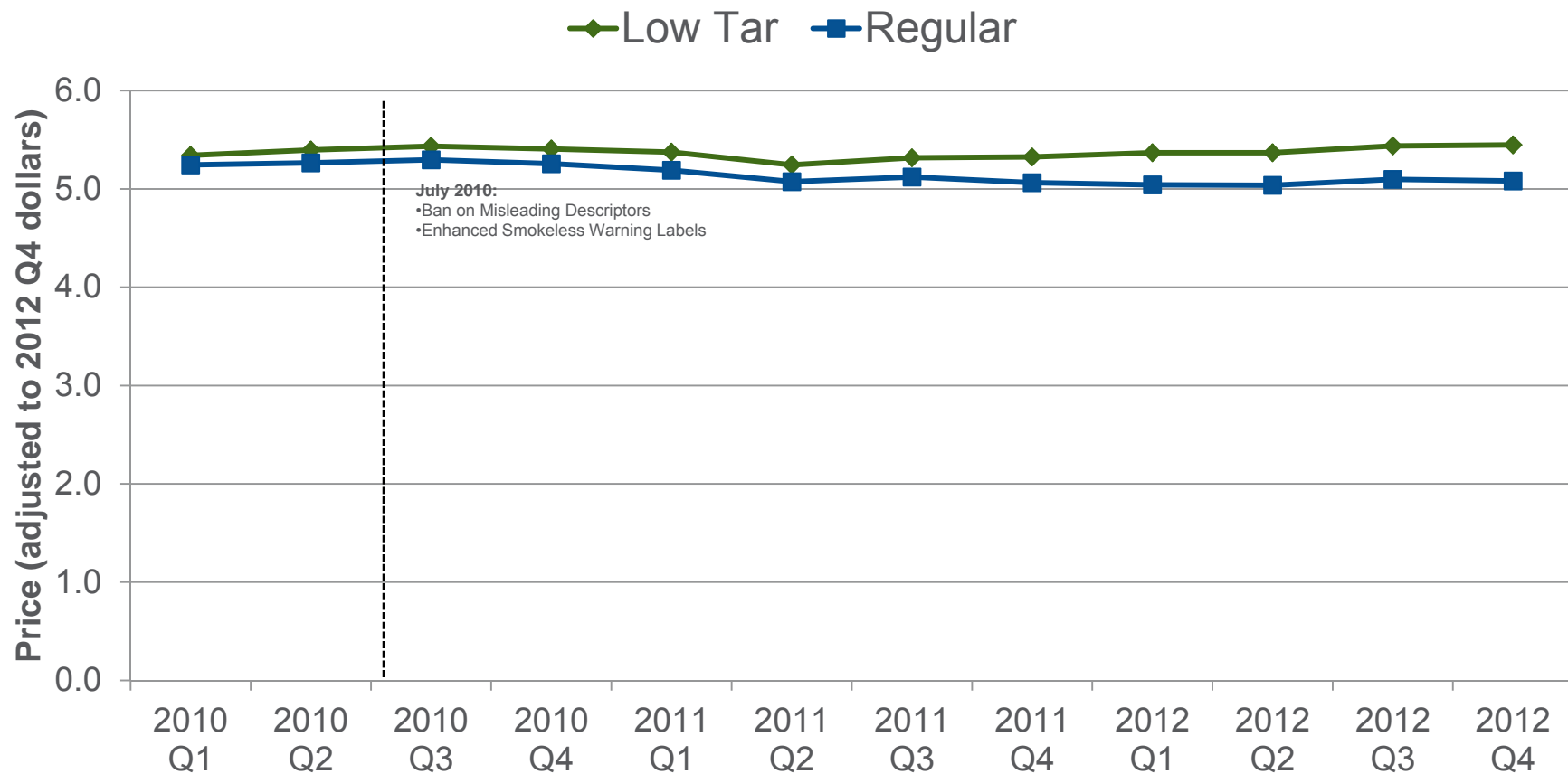
Total US Market – Combined Convenience and FDM Stores (in billions of pieces)



bridging the gap

Cigarette Price Per Pack by Type:

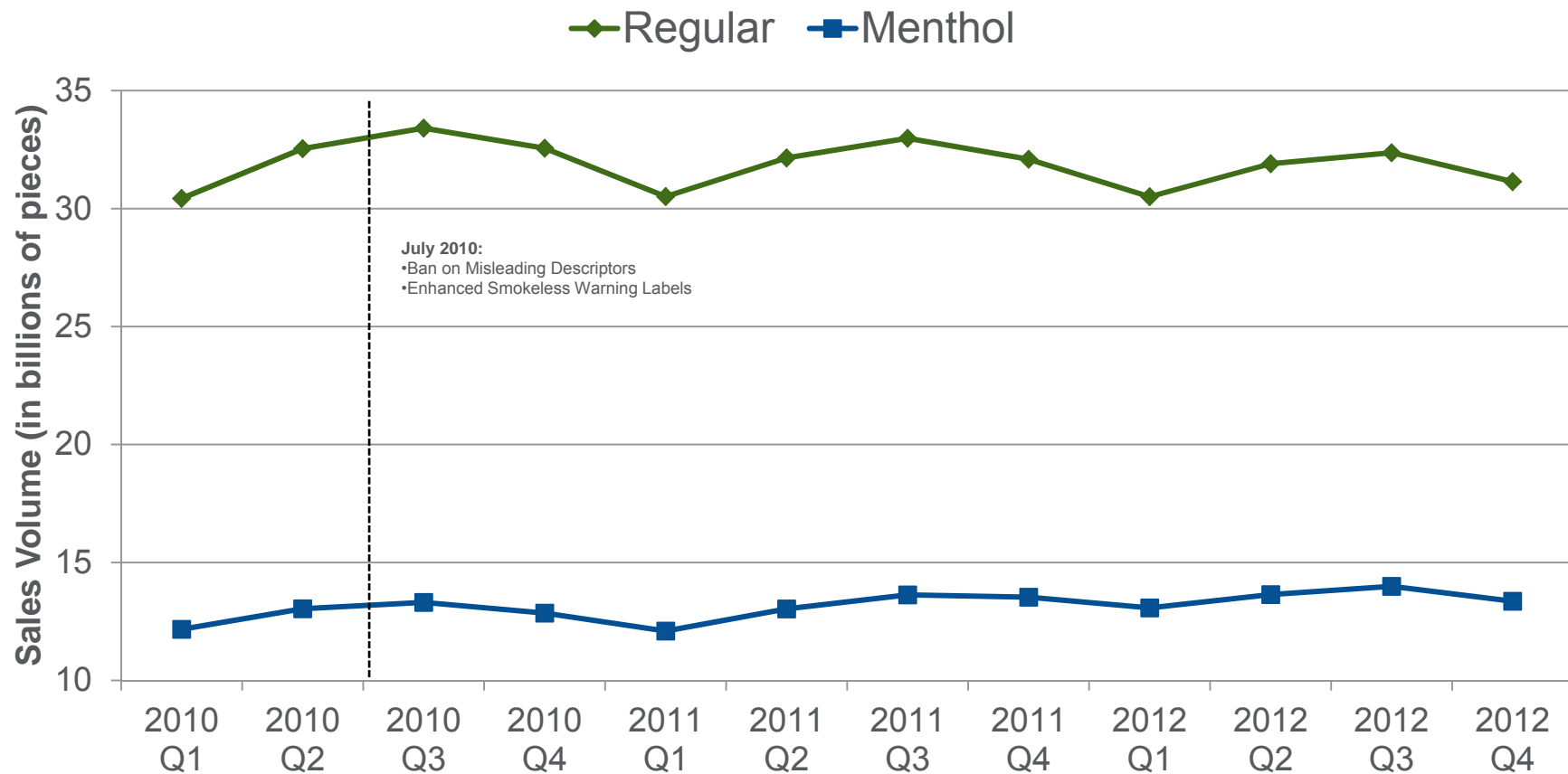
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Cigarette Sales by Flavor:

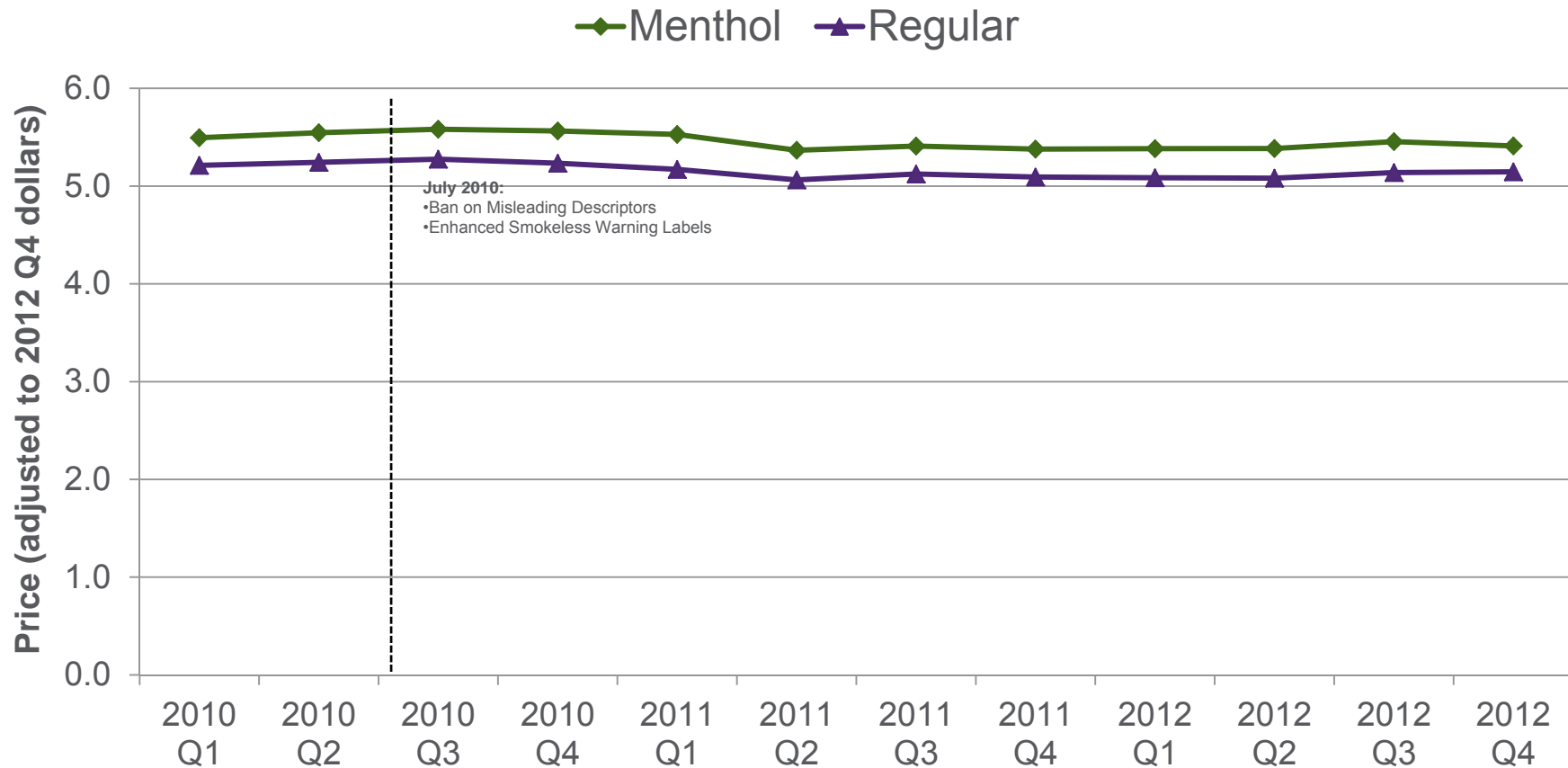
Total US Market – Combined Convenience and FDM Stores (in billions of pieces)



bridging the gap

Cigarette Price Per Pack by Flavor:

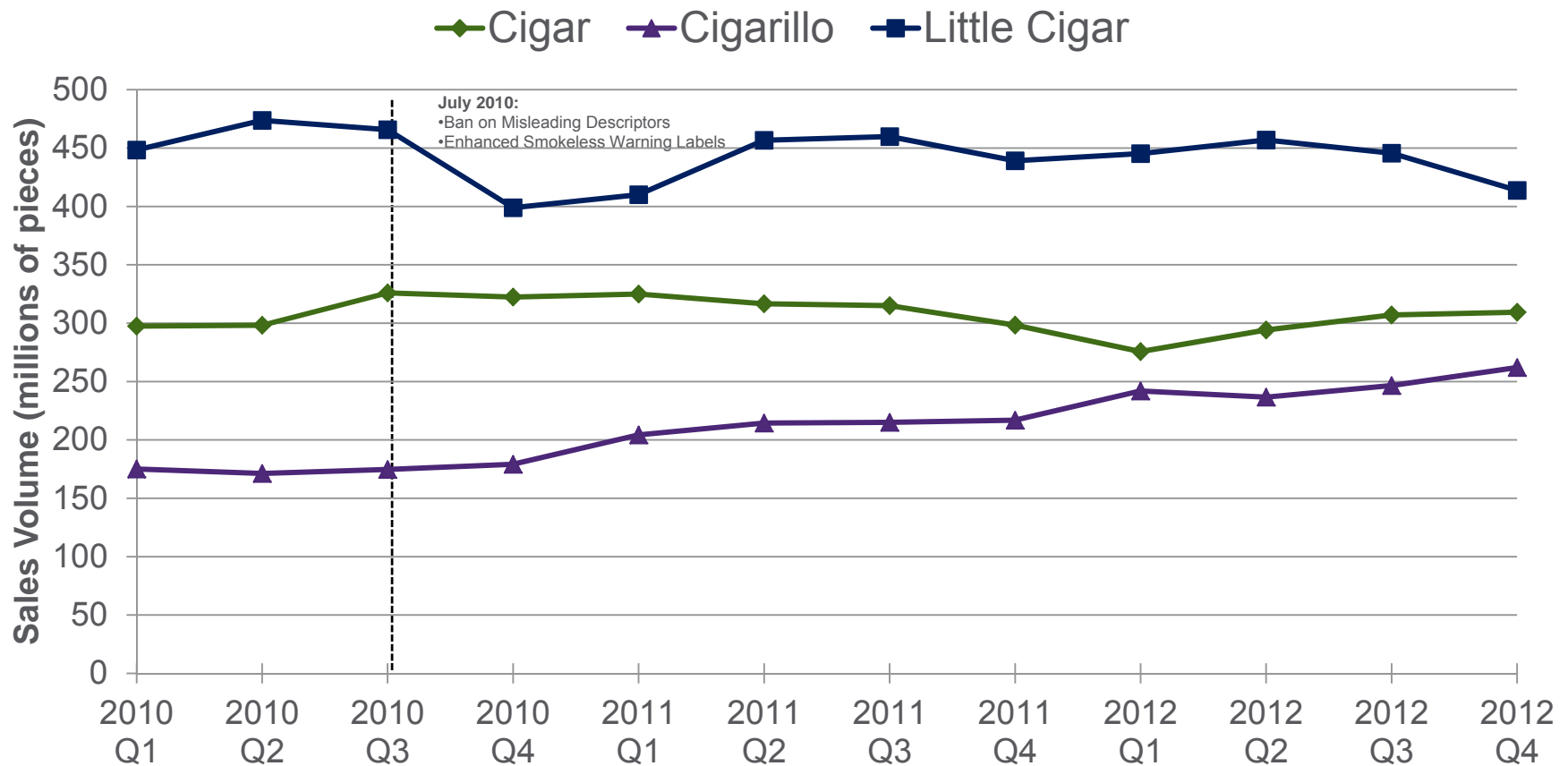
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Cigar Sales

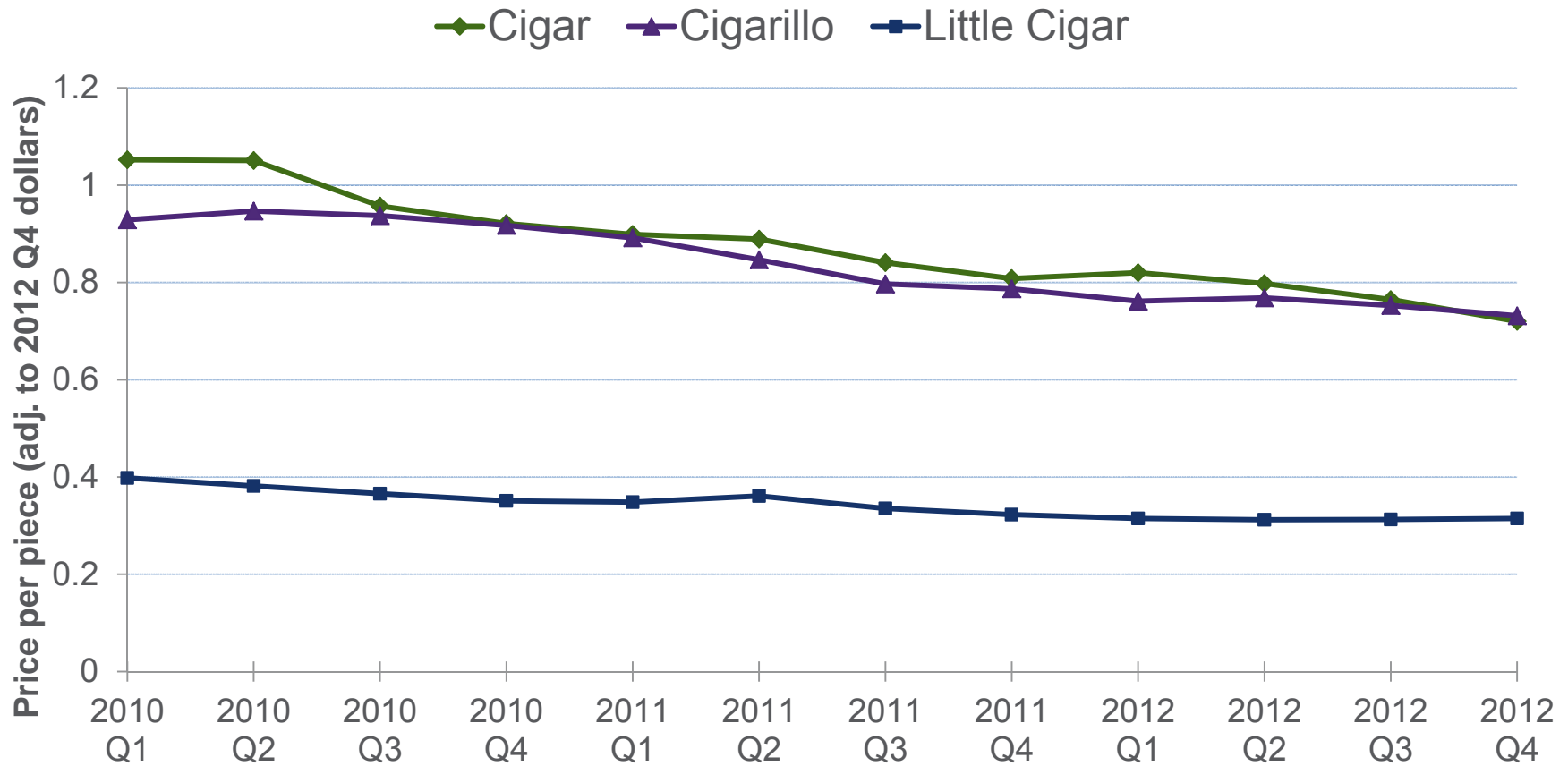
Total US Market – Combined Convenience and FDM Stores (in millions of pieces)



bridging the gap

Cigar Price (Per Piece)

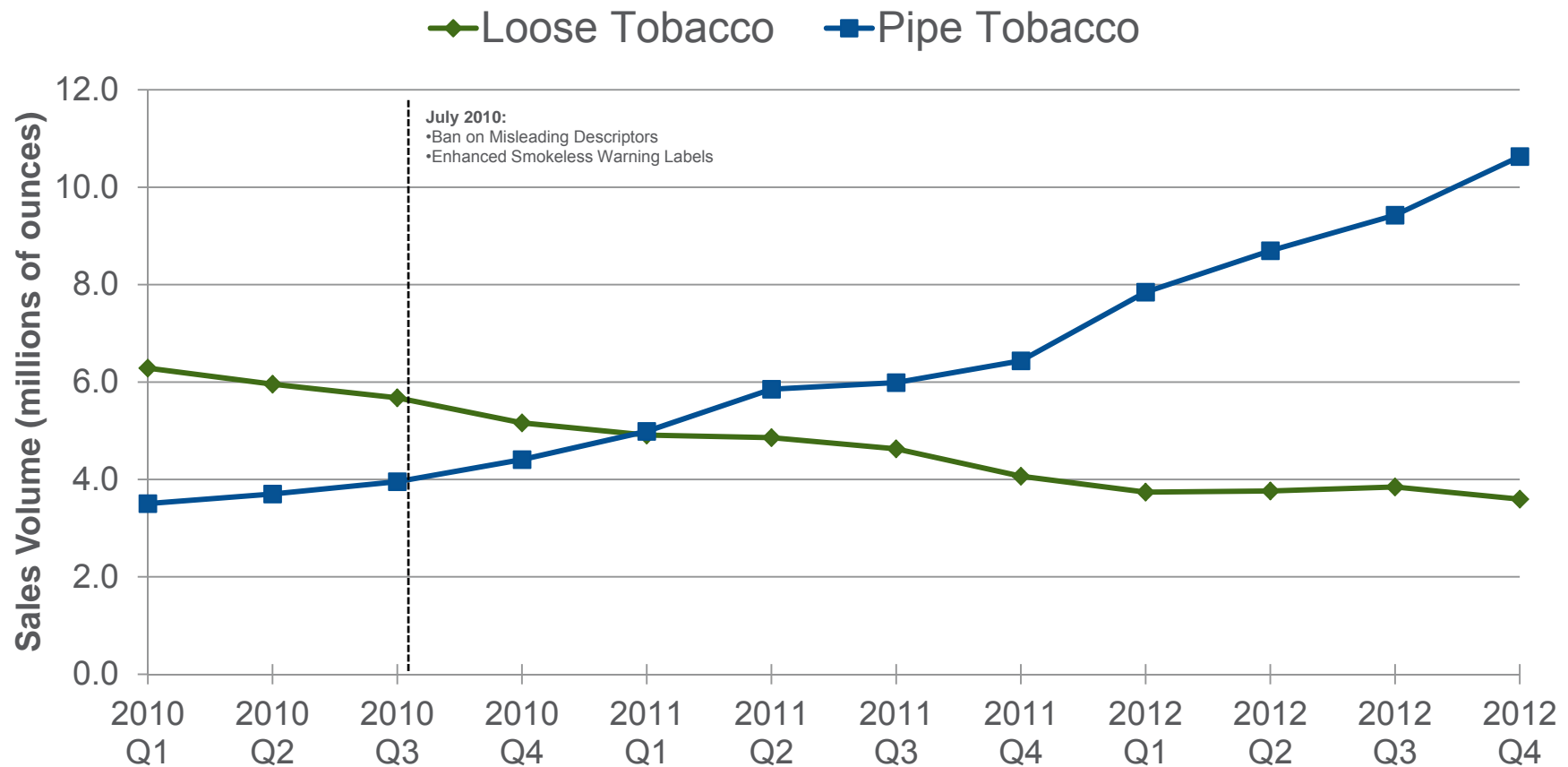
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Loose and Pipe Tobacco Sales

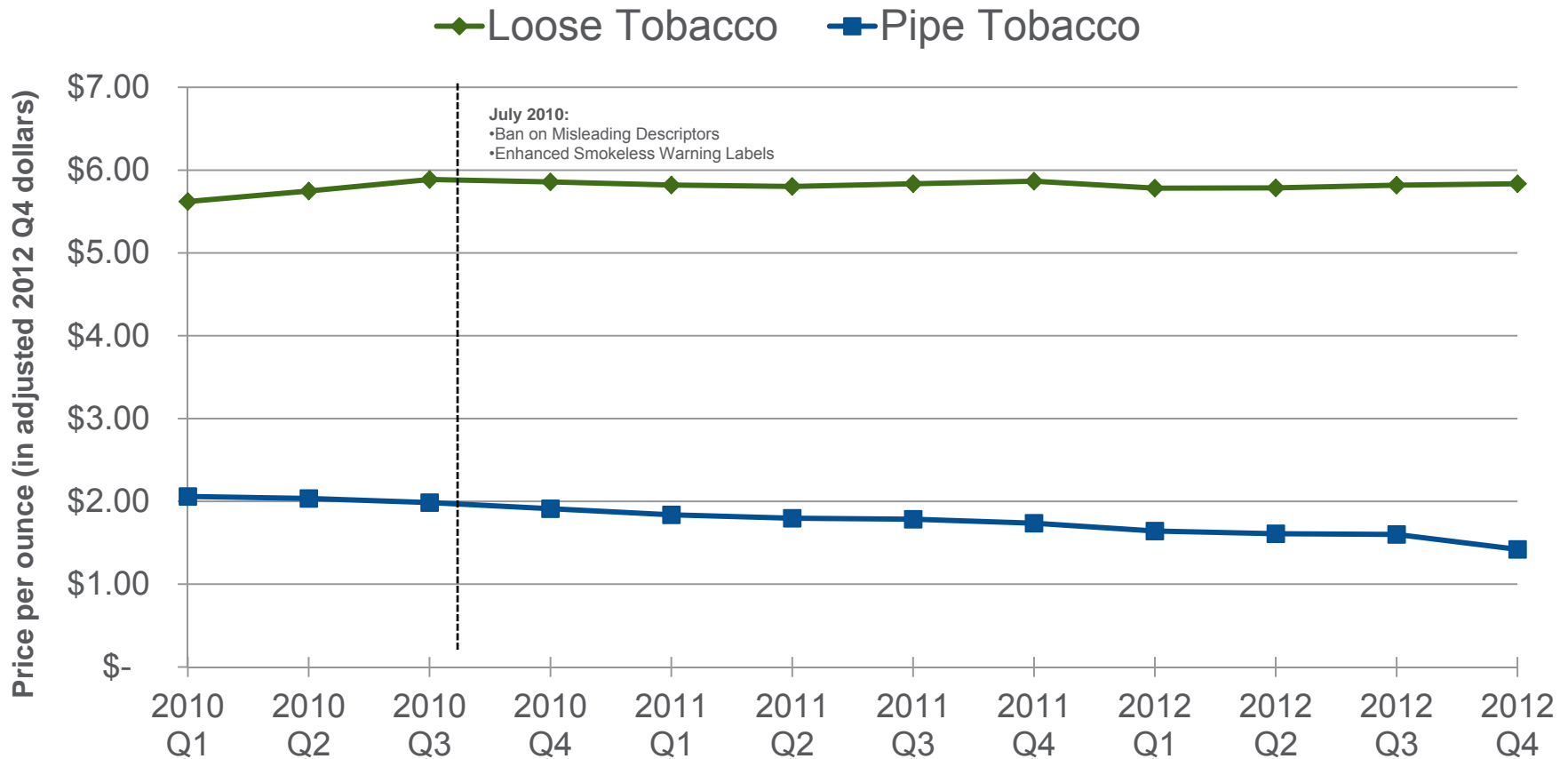
Total US Market – Combined Convenience and FDM Stores (in millions of ounces)



bridging the gap

Loose and Pipe Tobacco Products Price (per ounce)

Total US Market – Combined Convenience and FDM Stores

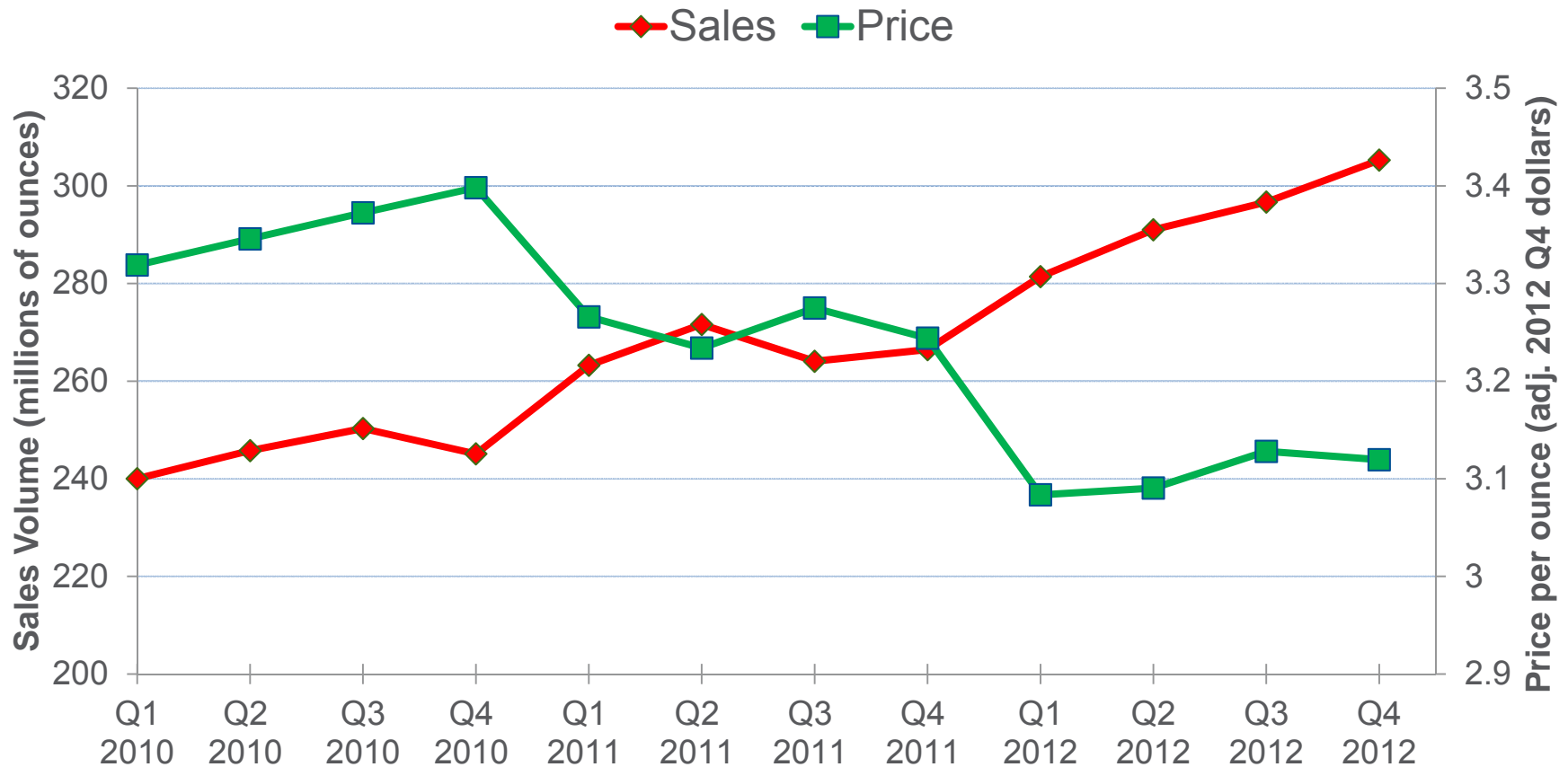


bridging the gap

Smokeless Tobacco Products: Moist Snuff Sales and Price

Sales (in millions of ounces) and Price (per ounce)

Total US Market – Combined Convenience and FDM Stores

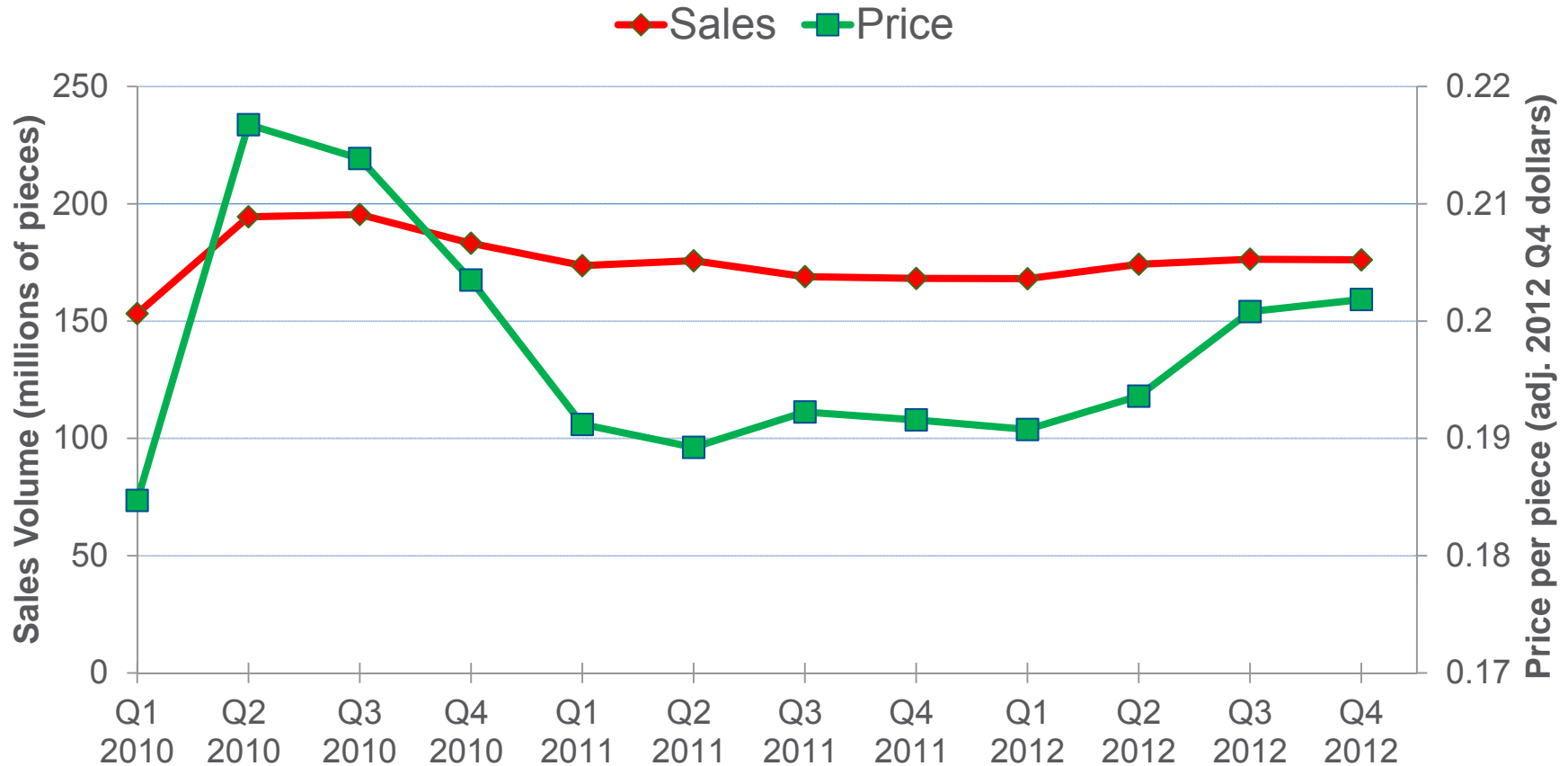


bridging the gap

Smokeless Tobacco Products: Snus Sales and Price

Sales (in millions of pieces) and Price (per piece)

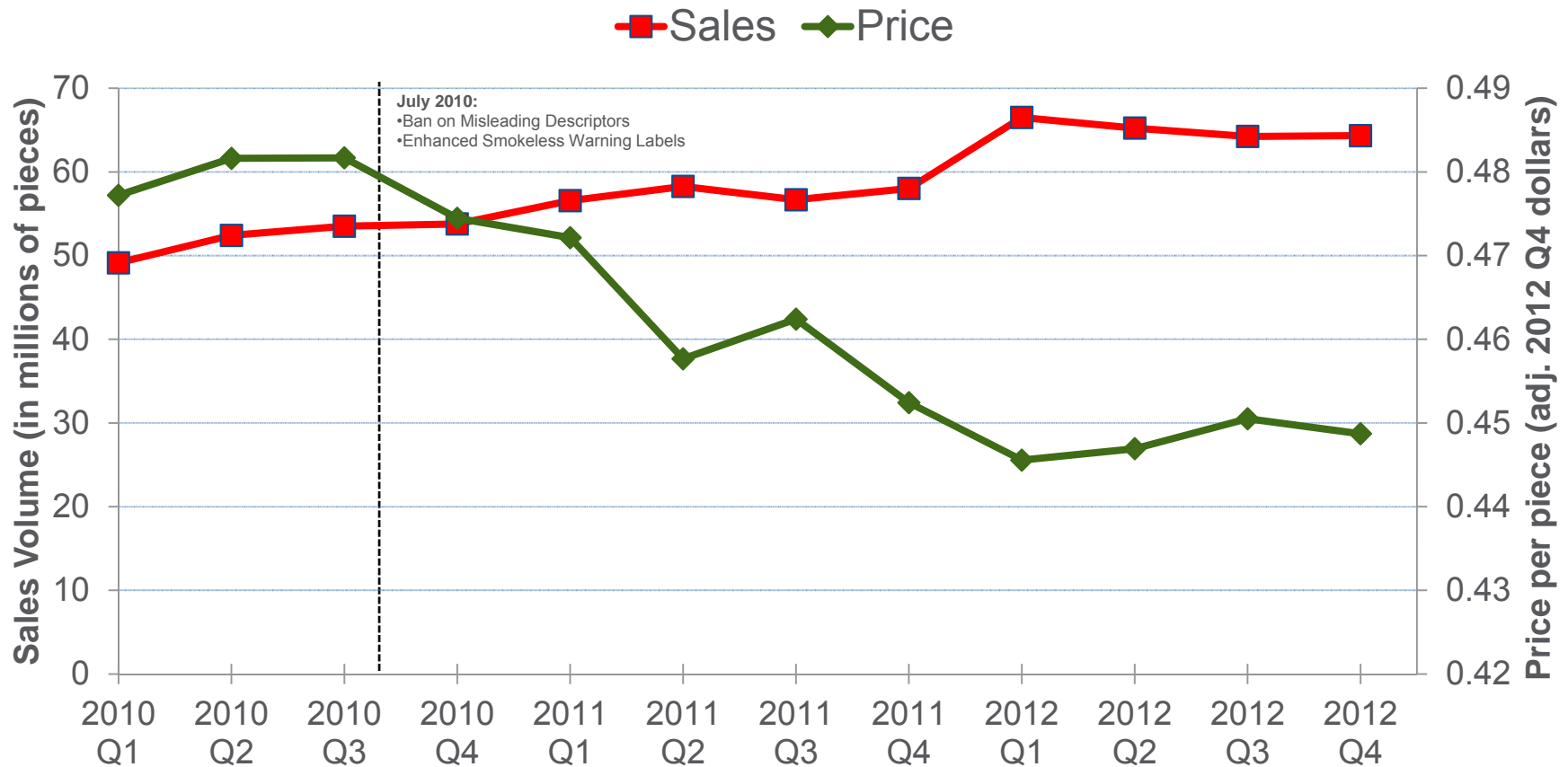
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Dissolvable Lozenge Sales and Price

Total US Market – Combined Convenience and FDM Stores (in millions of pieces)

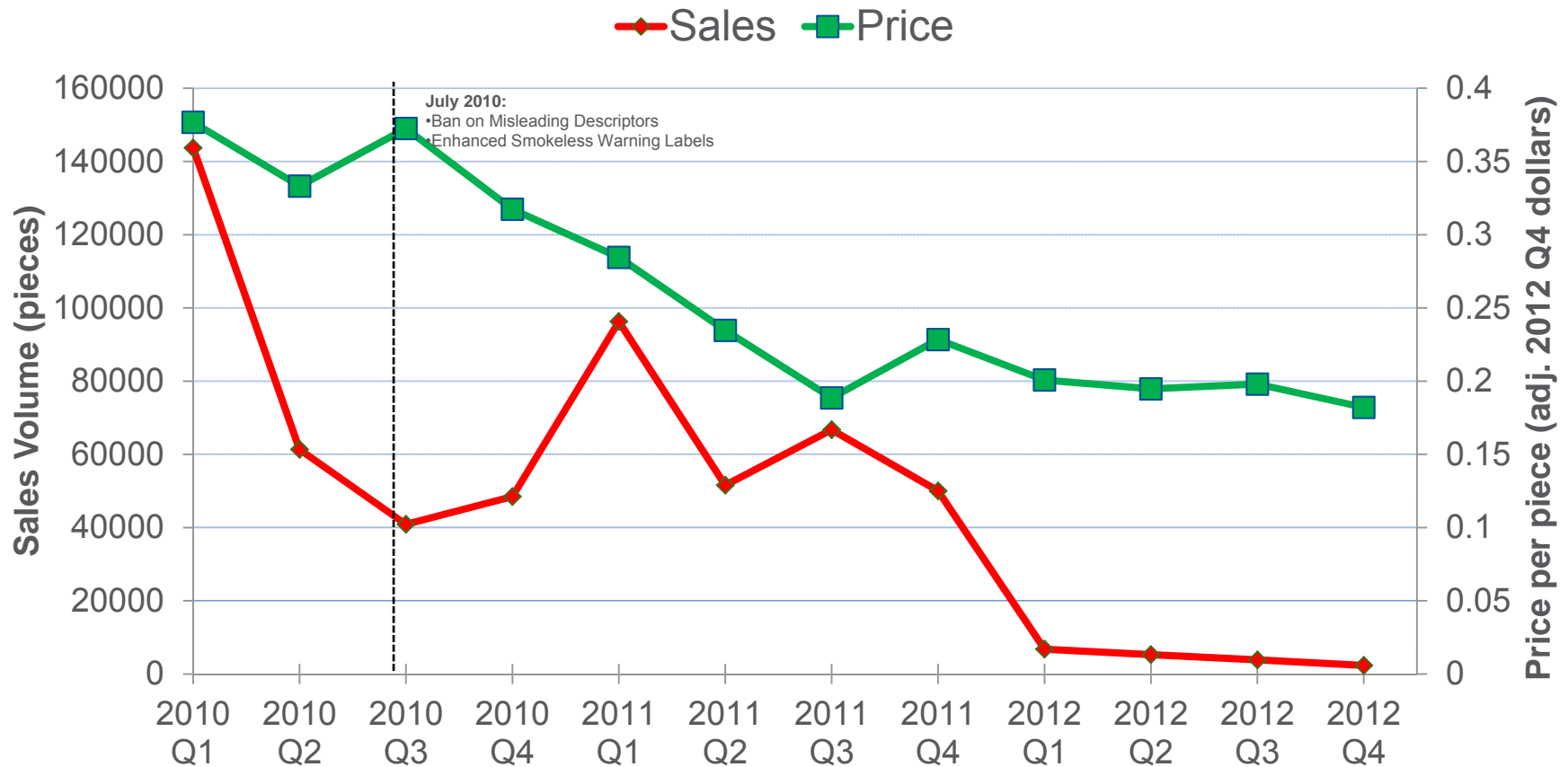


bridging the gap

Dissolvable Tobacco Products: Sticks Sales and Price

Sales in pieces and Price per piece

Total US Market – Combined Convenience and FDM Stores

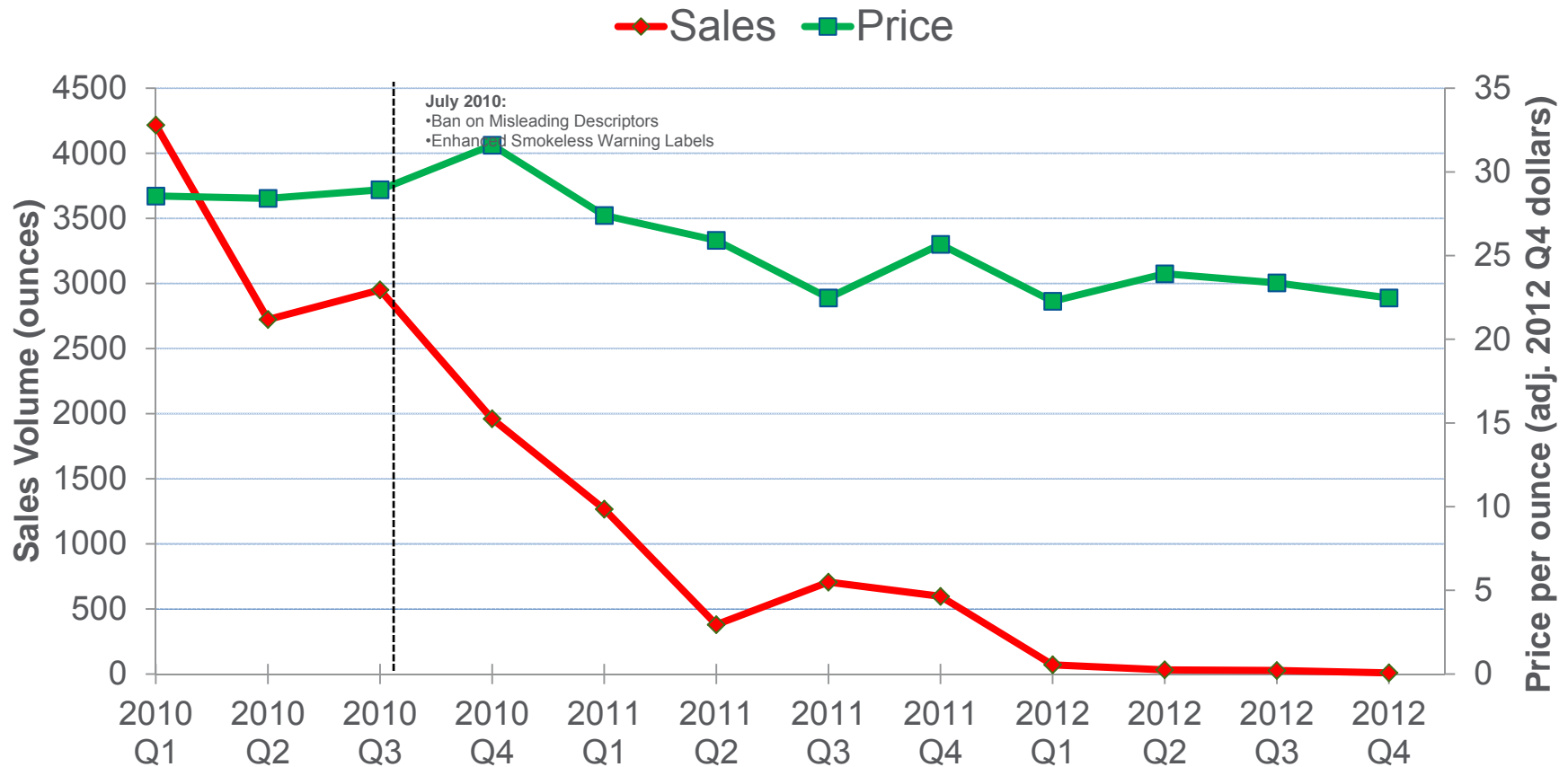


bridging the gap

Dissolvable Tobacco Products: Orbs

Sales in ounces and Price per ounce

Total US Market – Combined Convenience and FDM Stores

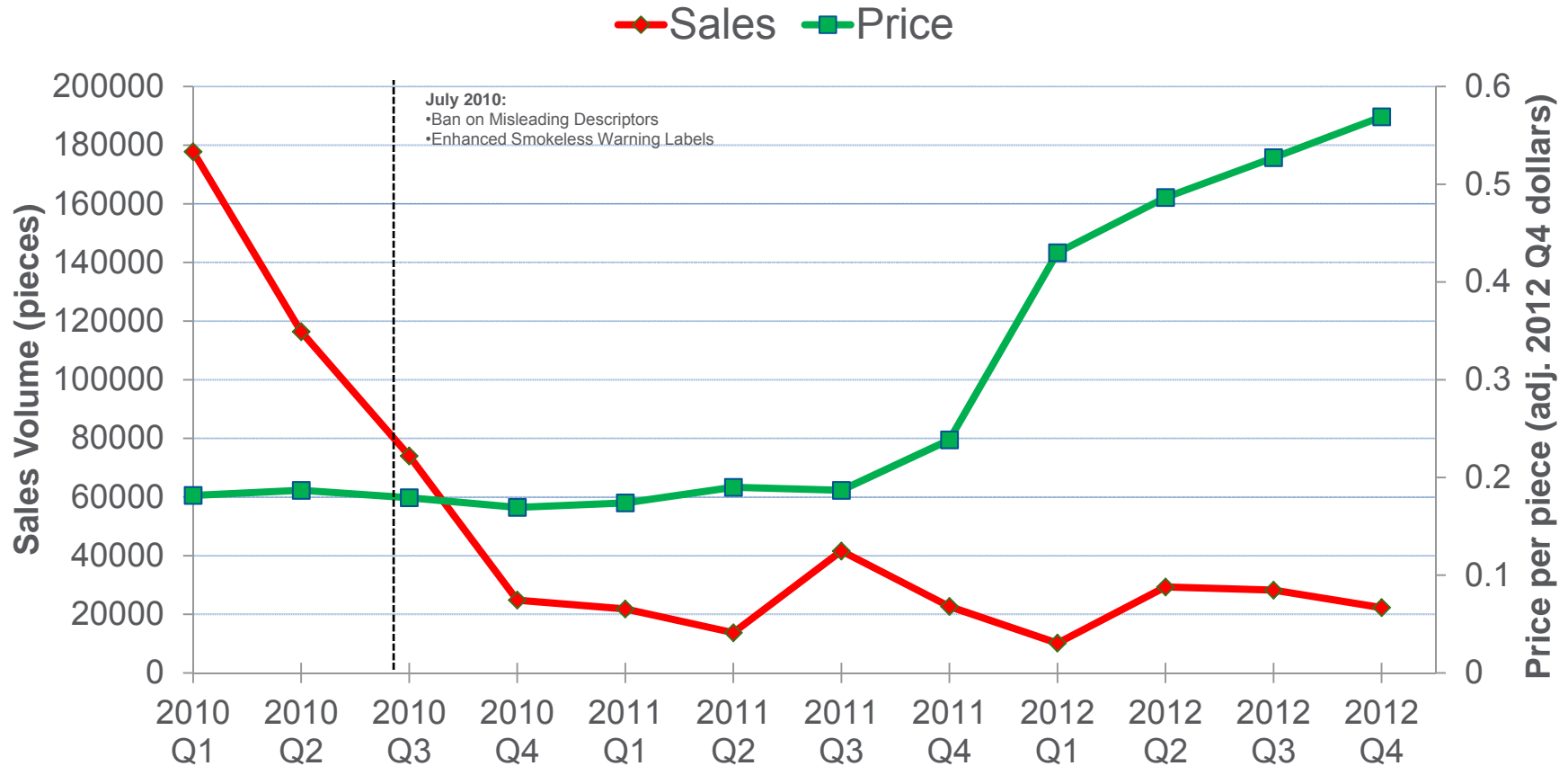


bridging the gap

Dissolvable Tobacco Products: Strips

Sales in pieces and Price per piece

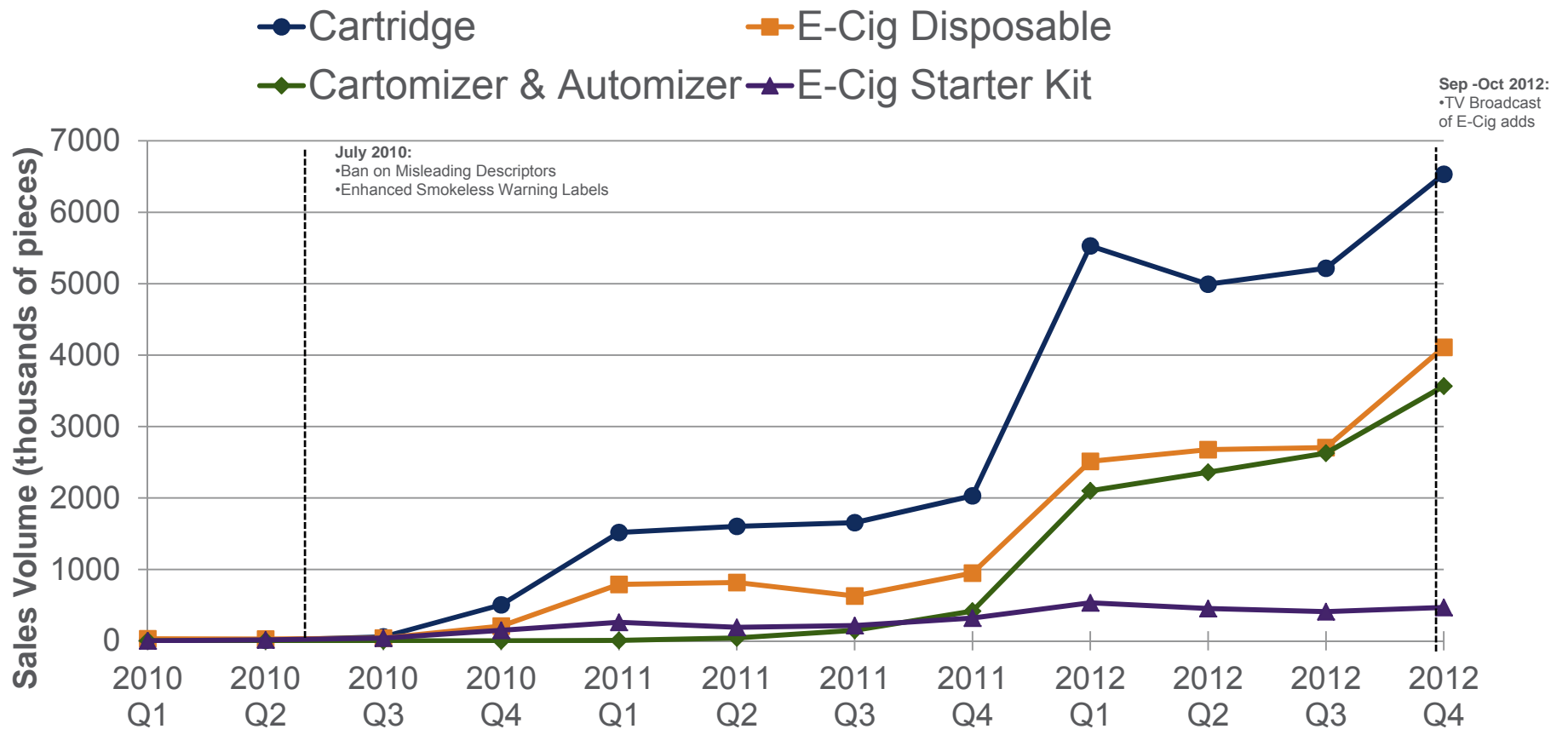
Total US Market – Combined Convenience and FDM Stores



bridging the gap

Electronic Cigarette Sales

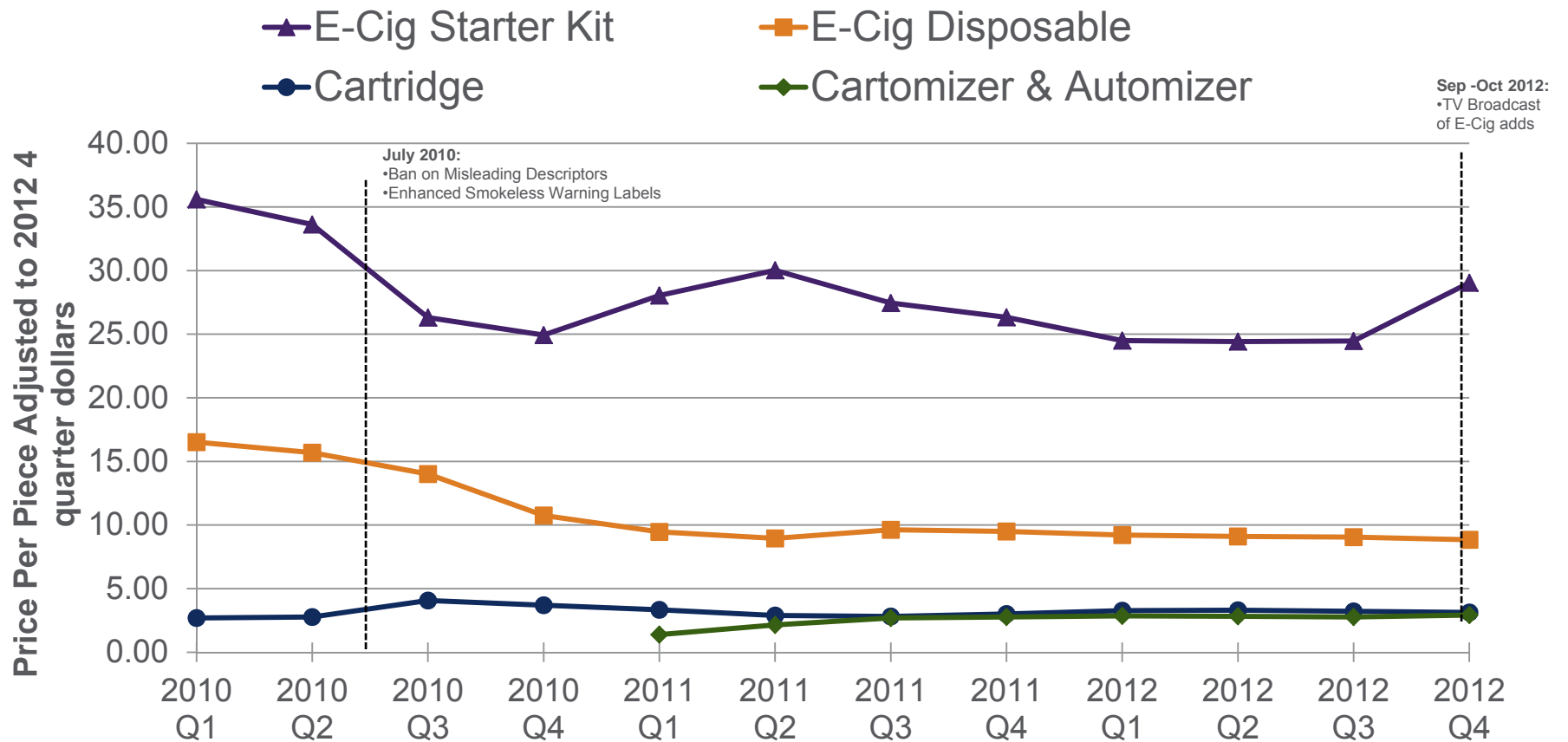
Total US Market – Combined Convenience and FDM Stores (in thousands of pieces)



bridging the gap

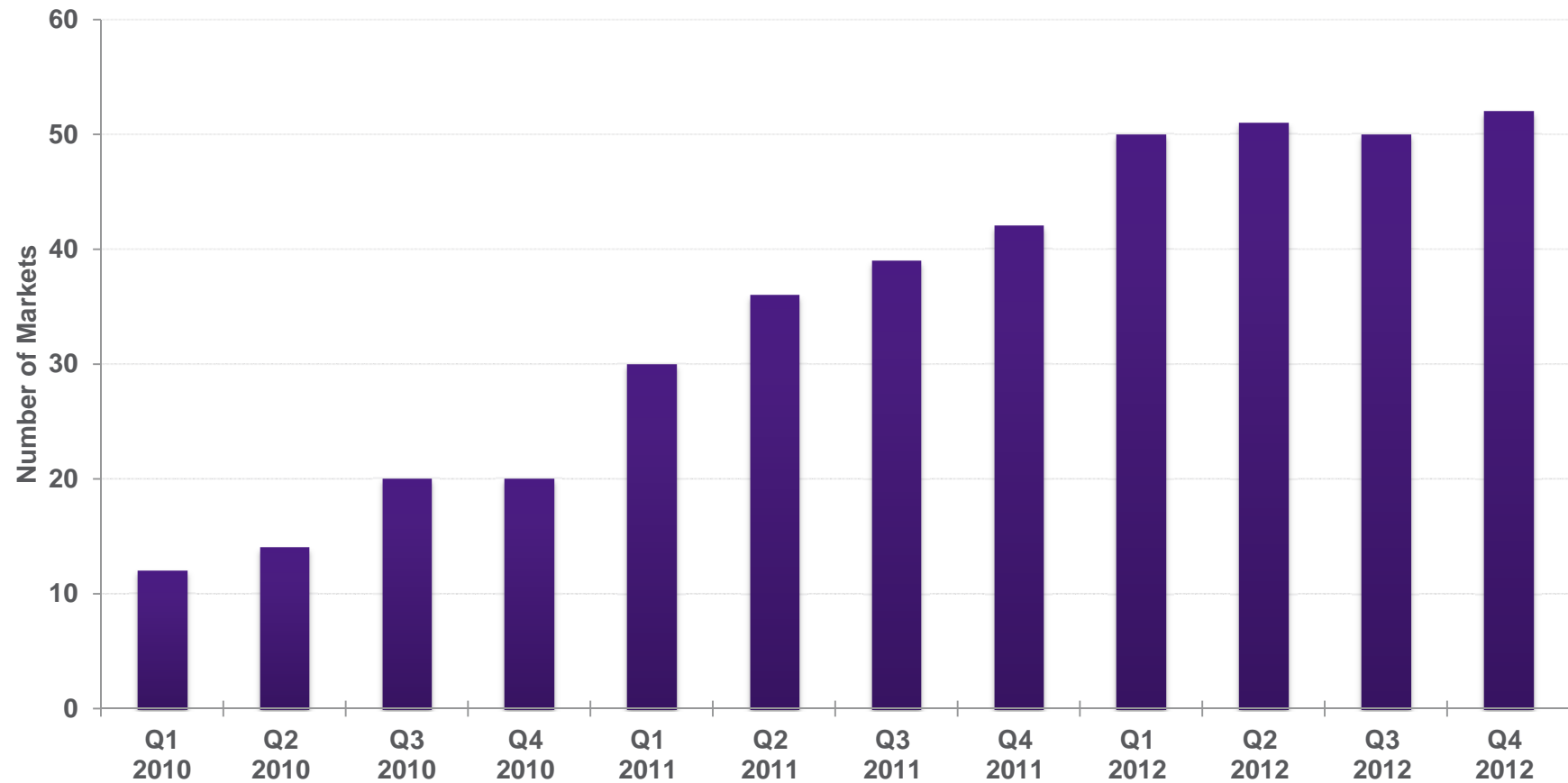
Electronic Cigarettes Price

Total US Market – Combined Convenience and FDM Stores (dollars per piece adjusted to 2012 4 quarter dollars)



bridging the gap

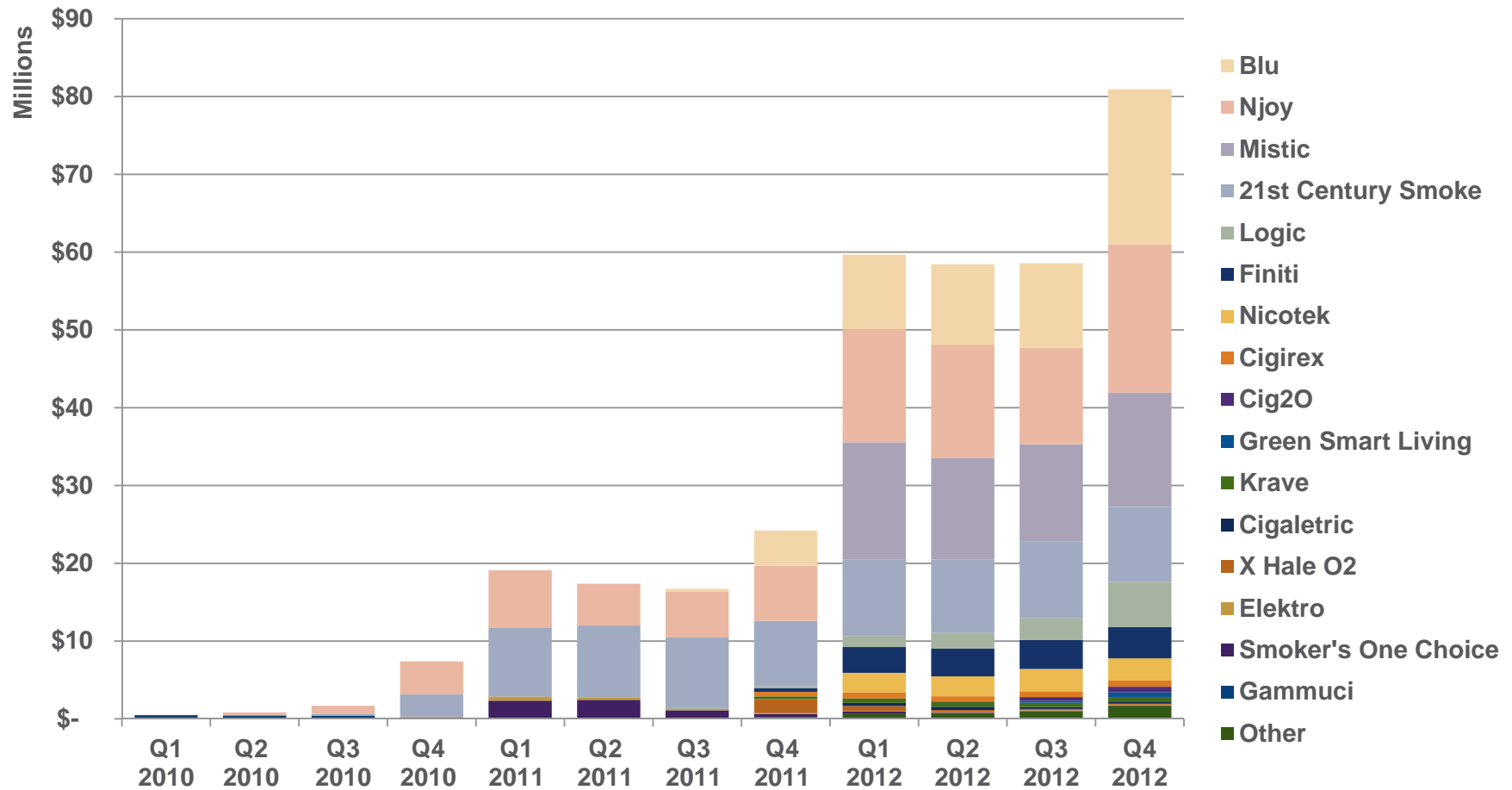
Number of Markets with E-cig Sales 2010 - 2012



bridging the gap

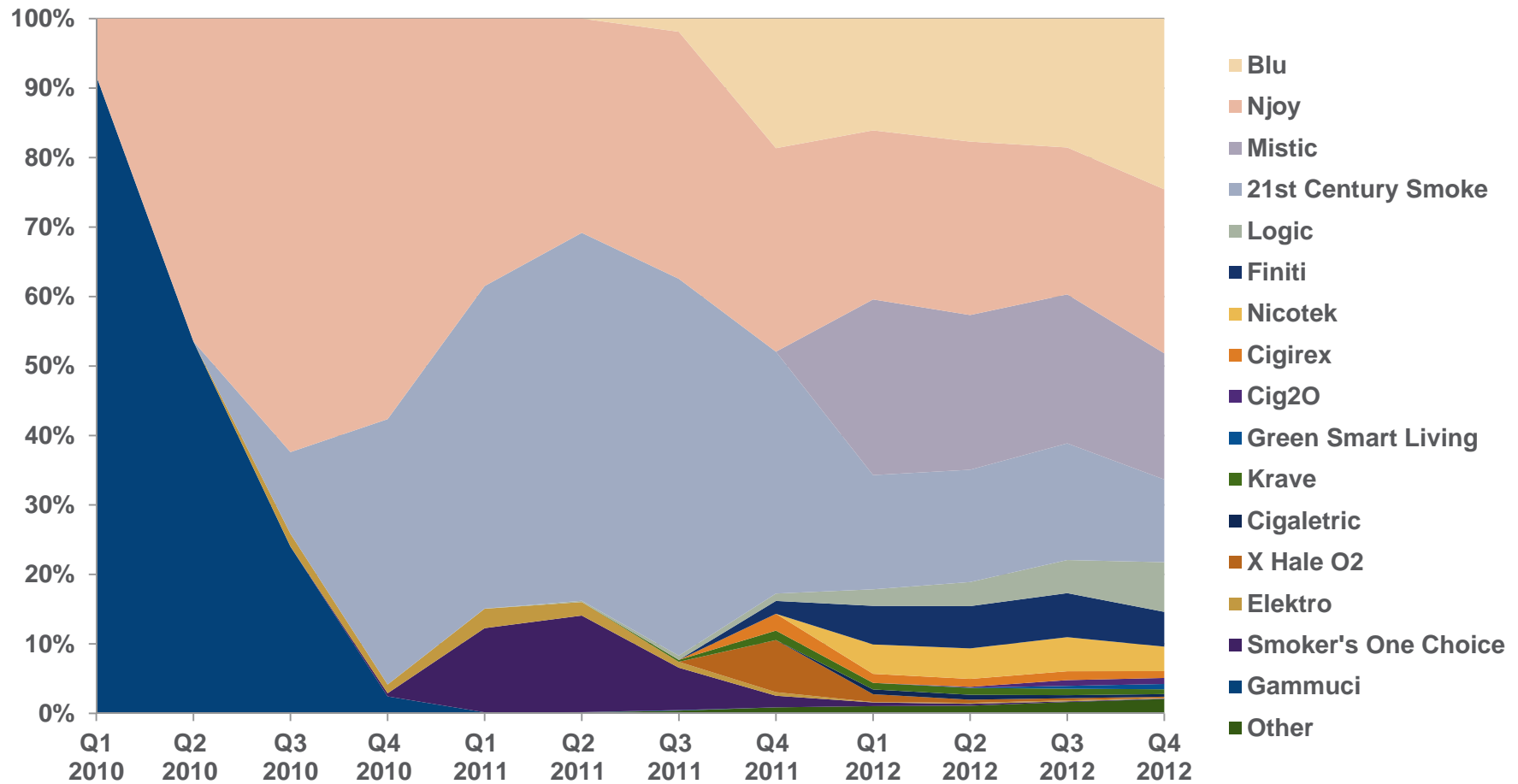
E-Cig Brand Market Share

in millions of sales dollars 2010 - 2012



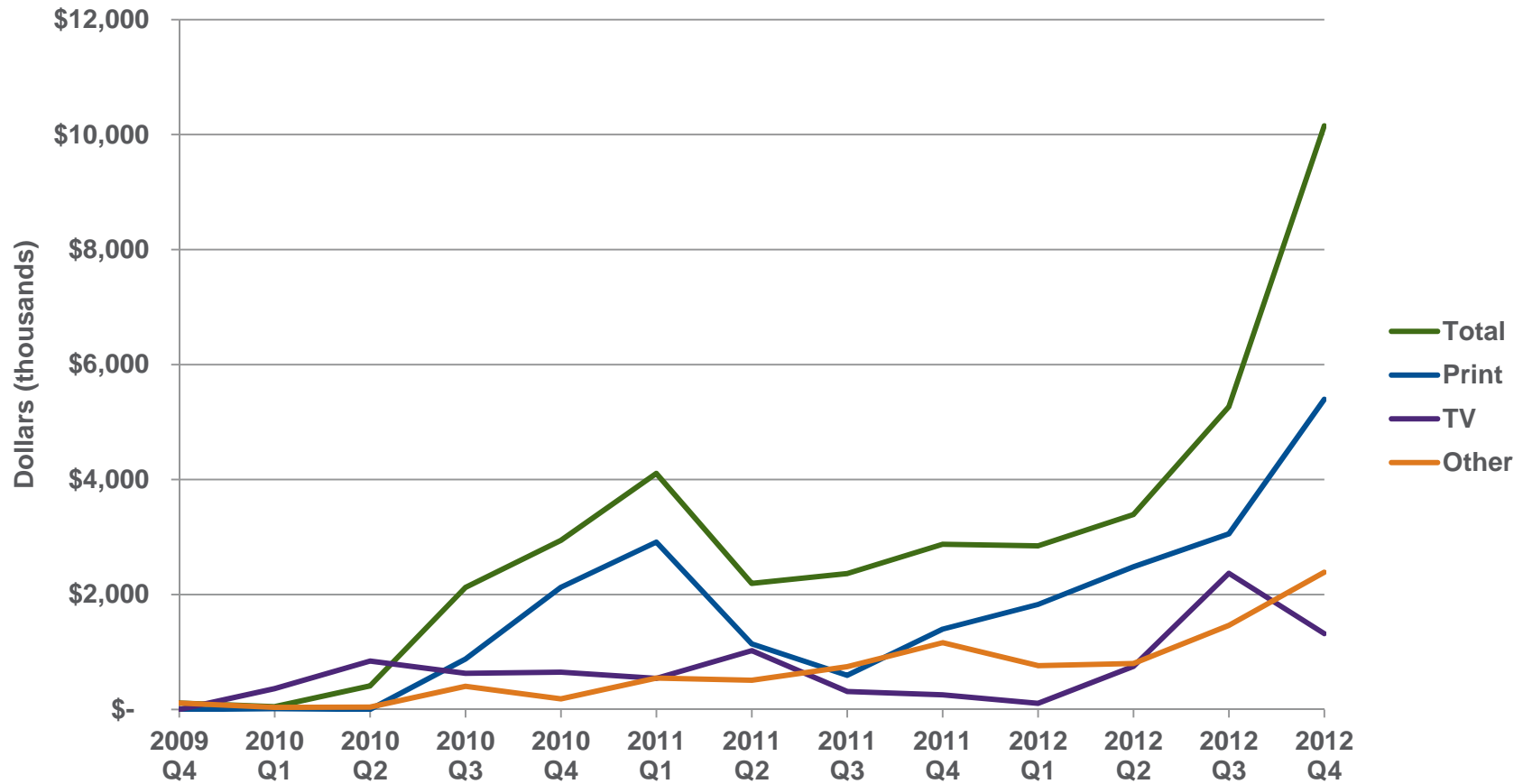
bridging the gap

E-Cig Brand Market Share in percent of sales dollars 2010 - 2012



bridging the gap

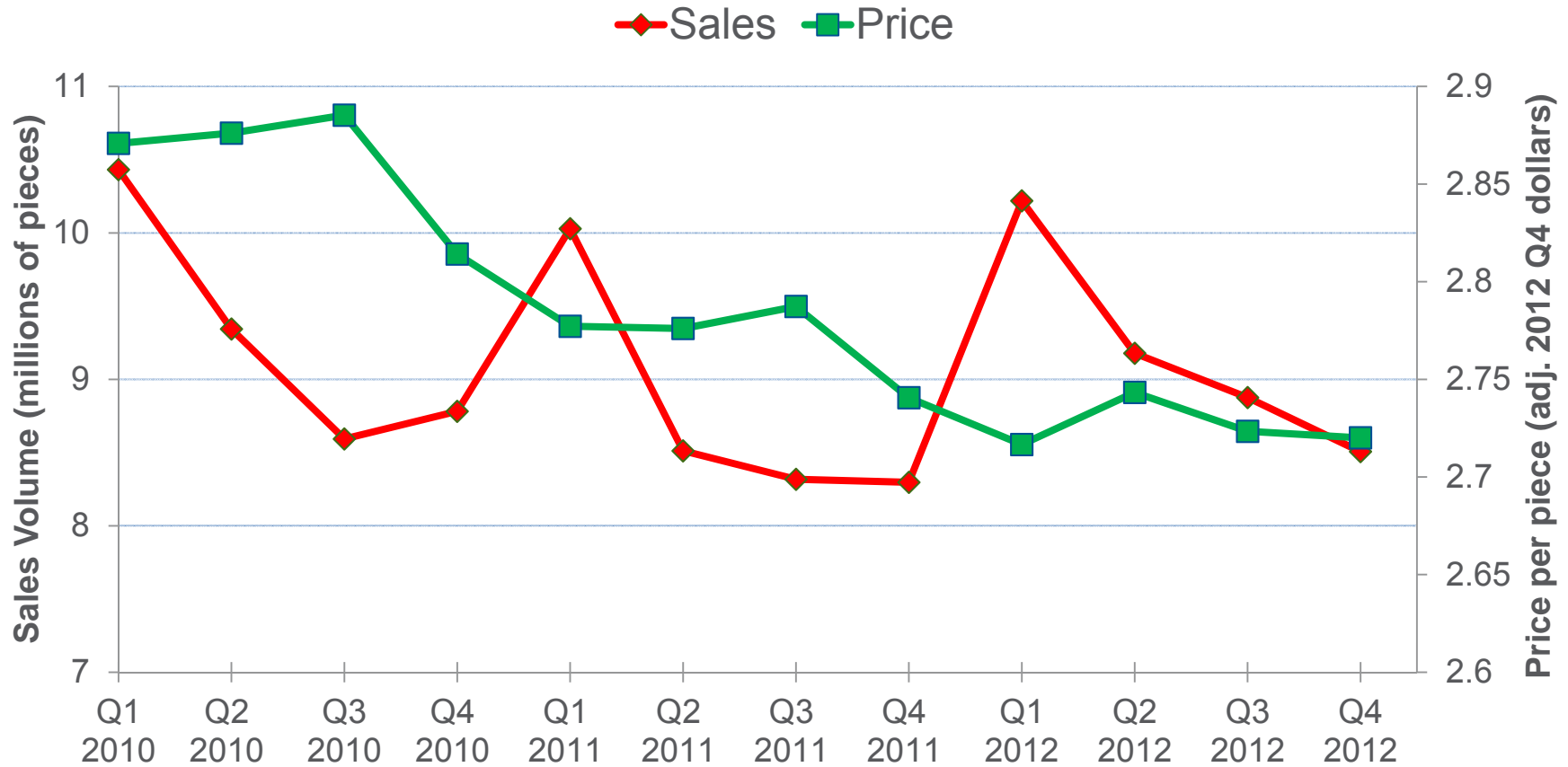
Media Expenditures on Electronic Cigarettes in thousands of dollars 2010 - 2012



bridging the gap

NRT Patch Sales and Price

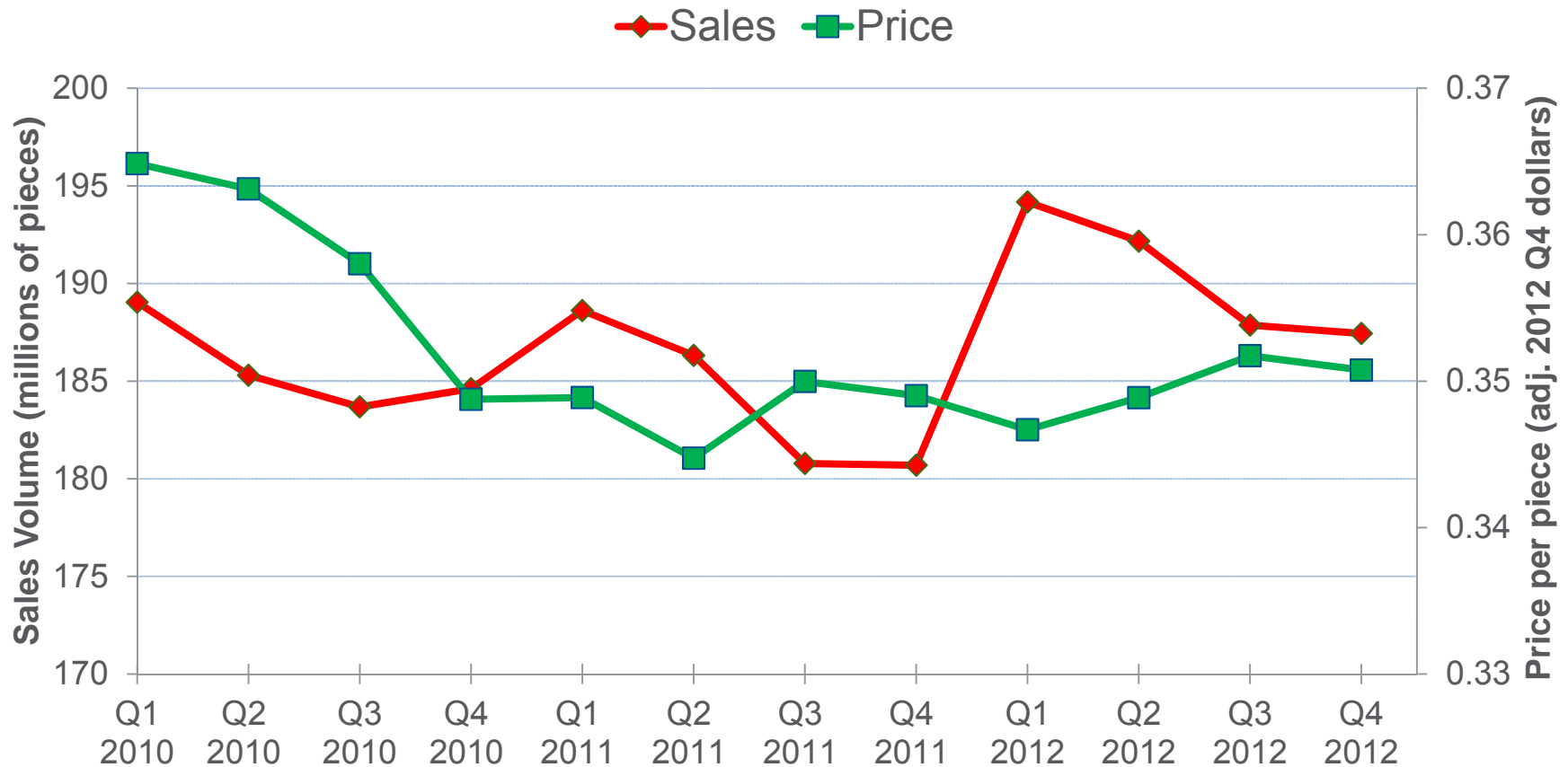
Sales (in millions of pieces) and Price per piece
Total US Market – Combined Convenience and FDM Stores



bridging the gap

NRT Gum

Sales (in millions of pieces) and Price per piece Total US Market – Combined Convenience and FDM Stores



bridging the gap

Demand Model

$$\ln Q_{mt} = f(\ln P_{mt}, D_m, D_t)$$

$\ln Q$: Natural log of Sales volume in market m in year-quarter t

$\ln P$: Natural log of average real price per unit in market m in year-quarter t

D_m : Market level dummies

D_t : Year Quarter dummies

Smoking Tobacco Products

Price Elasticity Estimates

	Cigarette	Cigar	Cigarillo	Little Cigar	Pipe Tobacco	Loose Tobacco
Price Elasticity	-0.767*** (0.186)	-1.204*** (0.0494)	-1.775*** (0.233)	-1.228*** (0.051)	-2.090*** (0.273)	-1.838** (0.904)
Observations	360	320	320	320	306	320
R-squared	0.988	0.965	0.947	0.98	0.817	0.91

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Other Tobacco Products

Price Elasticity Estimates

	Chewing Looseleaf	Moist Snuff	Snus	E-Cig Rechargeable	E-Cig Disposable
Price Elasticity	-1.427*** (0.378)	-1.167*** (0.183)	-0.390** (0.188)	-2.781*** (0.364)	-2.000* (1.094)
Observations	320	320	320	260	265
R-squared	0.962	0.967	0.878	0.739	0.751

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Next Steps: Modeling

- Adding state/local smoke-free air policies to model
 - Preliminary estimates show negative impact on sales of combusted products, but positive impact on sales of some smokeless products (moist snuff, snus)
 - Negative, weak association with e-cig sales
- Develop cross-price elasticity models (e.g., what happens to consumption of OTP when cigarette prices increase?)
 - Early estimates mixed – some evidence of substitution between some products, but not consistent

Aim 6: Household Spending

bridging the gap

Specific Aims

Aim 6: Evaluate the impact of prices, price-reducing promotions, and related policies on other household spending

- builds on Aims 3, 4 and 5 to examine impact of spending on tobacco products on:
 - household spending on food, housing, clothing, health care, education, transportation, and other goods/services
 - focuses on impact of tax changes on low-income households
 - assess differential impact based on use of tobacco tax and other tobacco revenues to support programs targeting low-income populations
- planning to start in 2014

Collaborative/Developmental Projects

bridging the gap

FDA/Merriman – Littered Pack Inspection

- Uses littered packs collected as part of UIC/Chaloupka UO1 and project with NYC Department of Health and Mental Hygiene
 - 2012, national sample of 161 secondary public school catchment areas (BTG-COMP)
 - Late 2011, 5 East Coast cities (New York, Providence, Boston, Philadelphia and Washington DC) (NYC DOHMH)
 - 30 census tracts in each city sample
 - Focus of initial data collections on tax evasion and tax avoidance
 - Focus of FDA collaborative project on cigarette packaging and compliance with FDA policies
 - Use of flavors, descriptors, and warning labels

FDA – Littered Pack Inspection

- UO1/BTG-COMP Sample
 - 3,840 packs collected in 139 catchment areas located in 36 states
 - 55.5% with cellophane
 - Generally high compliance with ban on flavors

Flavor	# of Packs	Percentage
No Flavor	3,073	80.0%
Menthol	755	19.7%
Fruit (illegal)	6	0.2%

- Still coding descriptors, warning labels

FDA – Littered Pack Inspection

- NYC DOHMH Sample
 - Completed coding for 633 cigarette packs from Providence and New York City
 - additional 12 packs in too poor condition to code
 - another 38 packs for little cigars
 - All pack in compliance with bans on flavors and descriptors
 - All packs included warning labels
 - 10 with non-US warning labels
 - Still coding packs from Boston, Philadelphia, and DC

ANRF/Chriqui – Local Tobacco Taxes

- ANRF Local Tobacco Ordinance data
 - Relatively comprehensive data on variety of local tobacco control policies collected from local departments of health and tobacco control advocacy groups; includes
 - smoke-free air policies
 - advertising restrictions
 - conditional use permits
 - Less complete data on local excise taxes
 - 59 localities included in ANRF database as of 12/31/12
 - CTFK reports 39 top local taxes (20 cents per pack and higher)
 - TBOT reports 594 city and county taxes in FY2012
 - only identifies states and number of cities/counties
 - Considerable variability in local taxes
 - From a few cents per pack in many AL, MO, and VA cities to \$3.00 per pack in Cook County IL

ANRF – Local Tobacco Taxes

- Collaborative project aims:
 - Compile local tax and fee data from communities nationwide for inclusion in ANRF local ordinance databases
 - Examine variation in local taxes and fees and construct measures that include both state and local taxes on cigarettes and other tobacco products
 - Use state and local tax measures in analyses linked to tobacco product prices and tobacco use
- 2 Phase project
 - Phase 1 (current phase)
 - collect copies of local tax laws (also requesting licensing laws)
 - Phase 2 (grant year 3)
 - coding and entry of local tax laws collected in Phase 1

ANRF – Local Tobacco Taxes

- Phase 1:
 - 13 target states based on ANRF, CTFK, and TBOT databases
 - States called to identify sources of hard copies of local tax laws
 - Electronic mailing lists obtained from the National League of Cities and National Association of Counties; supplemented with information from Municipal Yellow Pages and news reports
 - Copies of local tax laws requested from city/county clerks and from local tax administrators
 - Second e-mail solicitation, calls to follow up with:
 - non-respondents in jurisdictions known to have local taxes/fees
 - respondents who provided incomplete information
 - random sample of other non-respondents
 - Limited success to date; effort will continue through summer
 - Phase 2 focus likely to change to e-cig related policies

Aim 7: Communication & Dissemination

bridging the gap

Aim 7 – Disseminate & Communicate Widely

- Our approach
 - Identify policy relevant research questions
 - Obtain/collect/analyze data needed to address these questions
 - Include clear statement of key findings and policy implications in resulting publications/products
 - Work with other interested groups and use variety of approaches to disseminate policy relevant findings
 - Listen to policy makers, advocates, and others to identify unanswered questions for further research
- Key partner: Burness Communications
 - media relations
 - policy communications
 - stakeholder communications

Aim 7 – Disseminate & Communicate Widely

- Key products
 - peer reviewed journal articles, book chapters, etc.
 - pre-publication working papers (NBER, Tobacconomics)
 - recent NBER WP on 2009 federal tax increases
 - presentations, webinars, etc.
 - academic conferences (SRNT, APHA, etc.)
 - meetings with broader constituencies (NCTOH, TTAC, state programs, etc.)
 - meetings with key agencies (CDC/OSH, FDA, etc.)
 - Special reports
 - state tax reports, chartbooks, etc.
 - Research briefs & fact sheets
 - syntheses of findings from multiple studies
 - original research findings (recent BTG brief on cigarette pricing)
 - Data
 - state tax/price-related policy data

Aim 7 – Disseminate & Communicate Widely

•Key activities/channels

- engagement with key partners
 - CTFK, ACS-CAN, state/local health departments, state tobacco control programs, NAAG, OSH, FDA, ANRF, others
 - e.g. incorporating findings from analyses into state tobacco excise tax modeling
 - bi-directional: share research findings & learn about questions faced in the trenches
- meetings/briefings with policy makers
- media outreach
 - press releases, video-news releases
- website – tobacconomics.org
- social media
- testimony
- responding to every request

bridging the gap

Report Claims SCHIP Cut Smokers, Increased Revenues

Minnesota anti-tobacco group using findings to push for tax hike

CSP Daily News | May 10, 2012

CHICAGO -- A new study by researchers at the University of Illinois at Chicago claims that a large national tax increase "can influence youth tobacco use prevalence within a very short time period."

One anti-tobacco group, the ClearWay Minnesota/Raise It for Health coalition, is already using the report to call for a tobacco price increase in Minnesota of \$1.50 per pack.

Implemented on April 1, 2009, the State Children's Health Insurance Program Reauthorization Act (SCHIP) increased the federal tax rate on cigarettes by 61.66 cents per pack (from 39 cents to \$1.0066 per pack) and on moist snuff, the most common form of smokeless tobacco, by 92.5 cents per pound (from 58.5 cents to \$1.51 per pound). It also increased taxes on other forms of smokeless tobacco.



SCHIP reduced the number of youth smokers by at least 220,000 and the number of youth smokeless tobacco users by at least 135,000 in the first two months, according to the report, published online by the National Bureau of Economic Research.

The study also found that federal tobacco tax revenues increased by 147% in the 12 months following the increase, it said--from \$7.1 billion in the 12 months before to \$17.5 billion in the 12 months after.



THURSDAY, MAY 10, 2012

New Study Shows Higher Tobacco Taxes Greatly Reduce Youth Smoking

Health advocates today urged Illinois leaders to increase the cigarette tax by \$1/pack following a new national study that confirms higher tobacco taxes are very effective at reducing smoking and other tobacco use, especially among kids.



Tax hike cuts tobacco consumption

By Dennis Cauchon, USA TODAY

Updated 9/13/2012 11:12 AM



Reprints & Permissions

A giant federal tobacco tax hike has spurred a historic drop in smoking, especially among teens, poor people and those dependent on government health insurance, a USA TODAY analysis finds.

2009 Federal Tobacco Tax Increase Cut Number of Youth Smokers by At Least 220,000 in First Two Months Alone, New Study Shows

RALEIGH, N.C., May 17 /PRNewswire-USNewswire/ -- As the legislative session begins, a report released today by a tobacco policy expert at the University of Illinois at Chicago confirms that a significant cigarette tax increase in North Carolina will produce a large, sustained increase in state tobacco tax revenues. Several states, including South Carolina, have recently raised tobacco taxes to deal with budget shortfalls.

Press on the Impact of the 2009 tobacco tax hike article



Fewer kids might start smoking, if Quinn's cigarette-tax hike to help Medicaid passes

BY LILI TAN
MAY 10, 2012



"Part of the purpose of the increase in federal tobacco taxes that went into effect in 2009 was to generate revenues, and a big part was the public health impact, and it's certainly having that with respect to kids," said Frank Chaloupka, paper co-author and an economics professor at the University of Illinois at Chicago.

Chaloupka found a 16 to 24 percent drop in youth smoking immediately after the tax increase. He and his researchers culled data from Monitoring the Future surveys, which asked eighth-, 10th- and 12th-graders about their tobacco use, and have tracked youth substance use since the 1970s.

Chaloupka also projected that roughly 78,000 fewer youths would start smoking in Illinois if Gov. Quinn's \$1 cigarette tax hike passes.

"Where price really matters is for kids who are making the transition between experimenting with cigarettes – getting them from their friends or sneaking them from their parents – to buying their own and moving into more regular smoking," he said.

bridging the gap

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

Enhancing the Economic Impact Analysis Used in FDA's Rules for Tobacco Products

Enhancing FDA's Economic Impact Analysis

Aim 1 - Assess the impact of FDA regulatory actions and other tobacco control policies on tobacco use and related knowledge, attitudes, and

Aim 2 - Assess the impact of FDA regulatory actions and other tobacco control policies on the consumer surplus obtained by tobacco users

Aim 3 - Extend the range of costs and benefits including in assessing the economic impact of FDA regulatory actions

Estimating Impact of GWL

FDA Impact Analysis

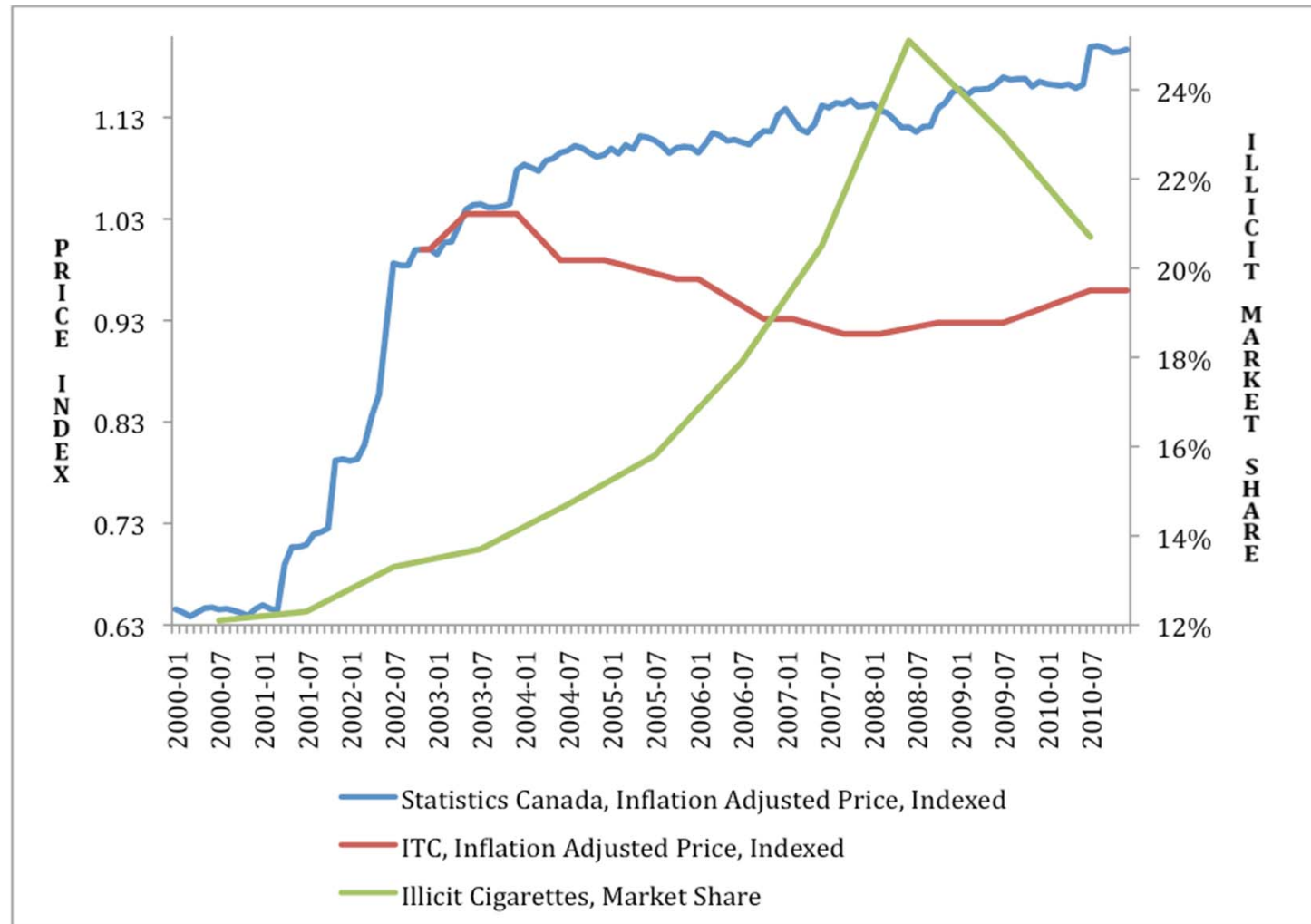
- Comparison of trends in smoking prevalence rates in Canada and US, 1991-2009
- Accounts for changes in prices over time
- Difference between projected and actual prevalence in Canada attributed to labels
- 0.088 percentage point reduction (0.4% reduction in prevalence rate)
 - About 213,000 fewer smokers in US in 2013, growing over time

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



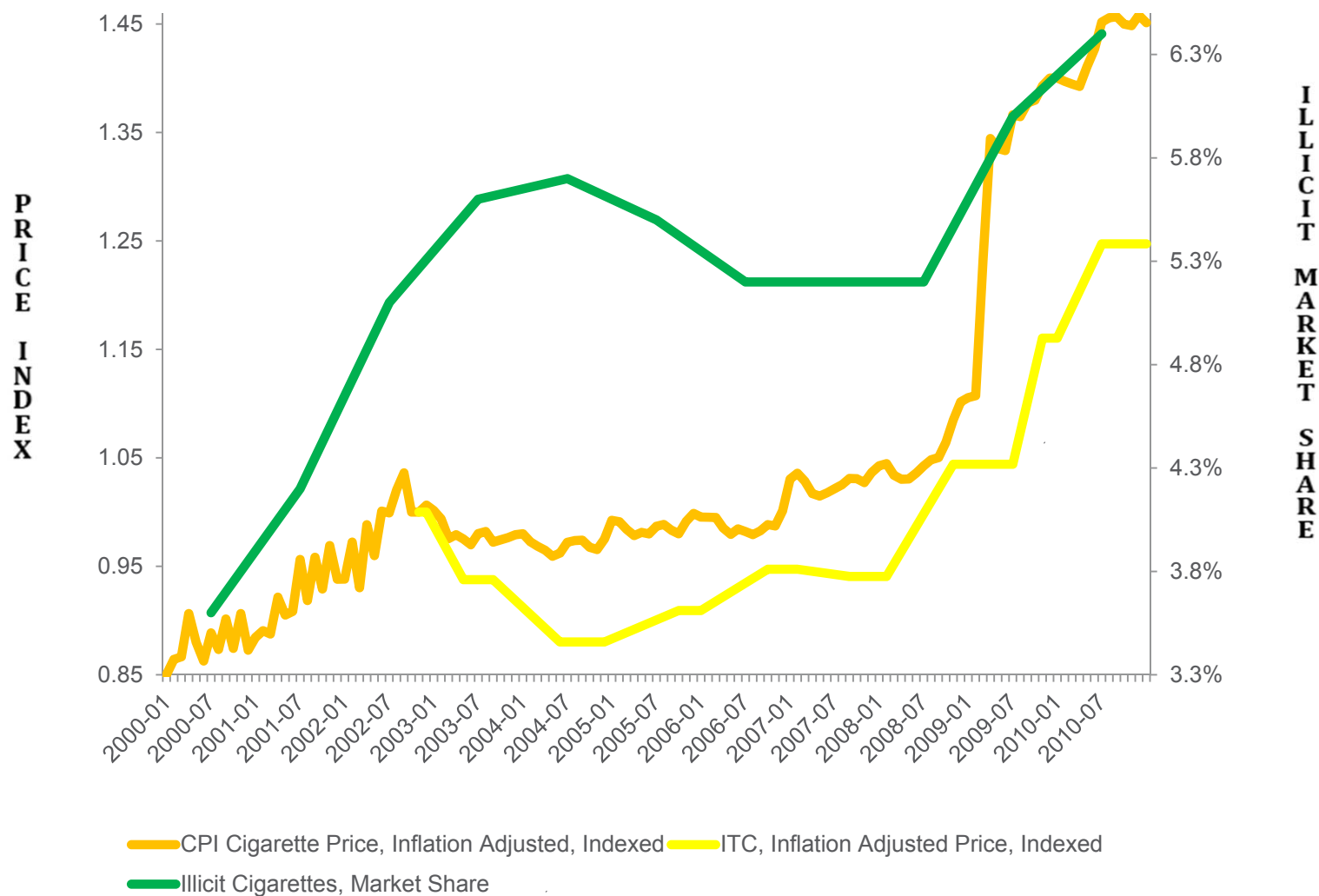
Comparisons of Cigarette Prices in Canada Between BLS and the ITC Canada Survey Over Eight Waves of Survey Data Collection (October 2002 to June 2011)

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%

bridging the gap

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



bridging the gap

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

Estimating Impact of GWL

Our Reanalysis

- Difference-in-difference modeling of combined Canadian/US data
- Accounts for changes in prices paid by smokers over time
- Use estimates to project impact on smoking prevalence rates
- 2.87-4.68 percentage point reduction (12-19.6% reduction in prevalence rate)
 - Does not account for other tobacco control policies & programs in either country

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

www.bridgingthegapresearch.org

coming soon: www.tobacconomics.org