

Table S1. ITC data studies 1 and 3 - Quasilikelihood under the Independence model Criterion (QIC) statistics comparing model fit for unstructured versus exchangeable correlation matrices for analyses where Generalised Estimating Equations (GEE) were used.

Analysis	QIC unstructured	QIC exchangeable
1. Usual tobacco product is FM	20075	20084
2. Usual tobacco product is FM - last purchase = usual	6110	6110
3. Usual tobacco product is RYO	did not converge	16706
4. Usual tobacco product is RYO - last purchase = usual	did not converge	2025
5. Usual tobacco product is mixed	11129	11138
6. Usual tobacco product is mixed - last purchase = usual	did not converge	1968
7. Last purchase = FM-P	21834	21835
8. Last purchase = FM-P within UK store-based sources	did not run (ceiling %)	did not run (ceiling %)
9. Last purchase = FM-P within non-UK/ non-store sources	did not converge	1732
10. Last purchase = FM-C	did not converge	16252
11. Last purchase = FM-C within UK store-based sources	did not converge	4553
12. Last purchase = FM-C within non-UK/ non-store sources	4547	4547
13. Last purchase source = UK store-based	15020	15014
14. Last purchase source = convenience store	17722	17722
15. Last purchase source = supermarket	17908	17909
16. Last purchase source = UK store-based other	5265	266
17. Last purchase source = non-UK/ non-store	did not converge	14753
18. Last purchase source = outside the UK	did not converge	3819
19. Last purchase source = duty free	did not converge	3408
20. Last purchase source = informal sellers	did not converge	1715
21. Last purchase source = friends/ relatives	did not converge	1813
22. Last purchase source = non-UK/ non-store other	did not run (floor %)	did not run (floor %)
23. Last purchase source = Other sources	did not run (floor %)	did not run (floor %)
24. Median prices for FM-P from UK store-based sources	did not converge	100533
25. Median prices for FM-P from non-UK/ non-store sources	did not converge	101465
26. Median prices for FM-C from UK store-based sources	did not converge	100849
28. Median prices for FM-C from no-UK/ non-store sources	did not converge	103217
29. Median prices for RYO from UK store-based sources	37579	37581
30. Median prices for RYO from non-UK/ non-store sources	38394	38397

Notes: Lower QIC values indicate better model fit. FM = factory-made (cigarettes); RYO = roll-your-own (tobacco); FM-P = factory-made cigarettes sold by the pack; FM-C = factory-made cigarettes sold by the carton. Analyses 1 through 23 pertain to GEE analyses of linear trends over time for proportion of participants within each (binary) category, using a binomial distribution and logit link. Analyses 24 through 30 pertain to GEE analyses of linear trends over time in median prices, using a gaussian distribution and identity link. All analyses used robust standard errors (see main report text for more details).

The analyses presented in Table S1 pertain to ITC data studies 1 and 3, presented in Chapters 4, 6, and 8, where Generalised Estimating Equations (GEE) were used on population-weighted data to

test for linear trends over time. For clustered data, GEE requires the specification of a correlation matrix estimating the relationship between responses within a cluster. The Quasilikelihood under the Independence Criterion (QIC) statistic is a data-driven method for comparing model fit using different types of correlation matrices. Only two options were available for our data: unstructured and exchangeable correlation matrices. We used a theory-driven approach to decide that the unstructured correlation was a better fit for our data. We reasoned that participants responses would become less correlated further apart in time. The exchangeable correlation option imposes equal correlations between responses over differing time-periods, whereas the unstructured option statistically estimates the associations at each time-point, and we thought this was preferable. We therefore specified an unstructured correlation matrix whenever possible, and used an exchangeable correlation matrix whenever the unstructured version failed to converge (indicated in Table S1).

However, we compared the model fit using the QIC statistic of the unstructured versus exchangeable options. Lower QIC values indicate better model fit, and it may be seen in Table S1 that in all instances except one (analysis 13, shown in bold) the fit provided by the unstructured correlation matrix was better than or equal to that provided by the exchangeable correlation matrix. The exception was the analysis of the proportion of participants purchasing tobacco from UK store-based sources over time, which, using an unstructured correlation matrix indicated that the linear trend was not statistically significant ($\beta = 0.019$, 95% CI: -0.002, 0.041, $p = 0.081$), but using the exchangeable correlation matrix indicated a significant increase in UK store-based purchases over time ($\beta = 0.018$, 95% CI: 0.0025, 0.033, $p = 0.023$). The implications of this are discussed in more detail within the main report (see *Chapter 6* and *Chapter 8*).

Table S2. Nielsen data study 1 - Brand families for factory-made (FM) cigarettes by allocated price segment and price-related terms used each year in the commercial literature.

Price segment	Brand Families with commercial literature price-related terms by year
Premium	Dunhill "premium" (2009); Vogue superslims "premium" (2009, 11, 12); Embassy "premium" (2008, 11, 12, 13,14); Regal "premium" (2008. 9, 10, 11, 13); Benson & Hedges (B&H) Gold "premium" (all years); Camel "premium" (all years); Park Drive "higher priced" (2015); Silk Cut "premium" (all years); Superkings (originally JPSK) "main stream" (2008)
Sub-premium	Lambert & Butler "value" (2008), "mid price" (2008, 9, 10, 12, 13, 14), "low price" (2008), "budget" (2008), "economy" (2008, 9, 12), "premium" (2013, 14), "sub premium" (2009, 2013); B&H Dual "sub-premium" (2012, 14); B&H Silver "sub-premium" (2009, 2012), "midprice" (2011), "premium" (2012); B&H White "sub-premium" (2011), "premium" (2011); Vogue Perle "mid price" (2011), "premium" (2012);
Value	Royals "low price" (2010), "value" (2012); Richmond "discount" (2008), "ultra low price" (2008), "value" (2008, 9, 10, 11, 12, 13), "mid price" (2010), "lowest price" (2010), "premium" (2011), "economy" (2008, 10, 13, 14); Mayfair "discount" (2008), "value" (2008, 14), "economy" (2008, 10), "budget" (2008, 9), "mid price" (2011, 12, 13, 14), "premium" (2014); Sovereign [Black] "value" (2014), "economy" (2014); Marlboro Bright Leaf "mid price/ mid range" (2009, 10, 12, 13), "lower priced" (2009), "economy" (2009)
Vestigial ULP	Pall Mall "deep discount" (2008), "ultra discount brand" (2010), "economy" (2008, 10, 12, 13, 14), "low price" (2008, 10), "value" (2009, 11, 12, 13); JPS (except Black and White) "economy" (all years), "super value" (2009), "ulp" (2009, 10), "lowest price sectors" (2010, 11), "discount" (2011), "value" (2009, 10, 11, 12, 13, 14), "budget" (2013); Windsor [Blue] "value" (2008, 10, 11, 12), "low price" (2008, 11, 12), "economy" (all years), "discount" (2008), "ultra low price" (2008, 10), "ultra discount brand" (2010), "budget" (2013); Ronson "ultra discount brand" (2011); Sterling "supervalue" (2008), "ultra low price" (2009), "ultra discount brand" (2010), "value" (2008, 10, 11, 12, 13, 14), "low priced" (2008, 10), "economy" (2008, 10, 12, 13, 14), "budget" (2008, 13, 14); Winston "budget" (2010), "value" (2010, 11, 13)
New ULP	B&H Blue "value" (2014); Sovereign Blue "value" (2013, 14), "sub-£6" (2013); Lambert & Butler Blue "sub-economy" (2014), "budget" (2014), "value" (2014), "economy" (2014); Chesterfield "value" (2011, 12, 13), "economy" (2013), "sub-£6" (2013); Marlboro Touch "more affordable" (2011, 13)
Sub ULP	Rothmans of London "low priced" (2012), "value" (2012, 13, 14), "sub economy" (2014), "sub value" (2014), "economy" (2014); Carlton "lowest price sectors" (2013), "economy/ budget" (2013); Players "sub value" (2012, 13, 14), "value" (2013, 14), "economy" (2014), "sub economy" (2013, 14)
Unclassified	Berkeley (king size, and superkings) "premium" (2009), "mid price" (2010), "value" (2011, 12), "super value" (2014)

Notes: Not all brand families that were allocated to price segments were mentioned in the commercial literature regarding segmentation (for a full list of all FM brand families within each price segment, see Table 6 in the main report). ULP = Ultra Low Price. All Berkeley SKUs and wholesaler and retailer brands were excluded from segmentation (see main text for details).

Table S3. Nielsen data study 1 - Brand variants for roll-your-own (RYO) tobacco by allocated price segment and price-related terms used each year in the commercial literature.

Price segment	Brand Variants with commercial literature price-related terms by year
Premium	Amber Leaf Signature high price terms (2014); Benson & Hedges (B&H) Gold high price terms (2009, 10, 12); Drum, Drum Additive Free, and Drum Gold high price terms (2009); Golden Virginia high price terms (2009, 10, 11, 13); Natural American Spirit high price terms (2013); Old Holborn high price terms (2014)
Mid-price	Amber Leaf low price terms (2009, 11, 12), mid-price terms (2012, 13); Amber Leaf Blonde high price terms (2012, 13); B&H Silver low price terms (2014), mid-price terms (2009), high price terms (2010); Cutters Choice (+ Extra Smooth, Gold, Exquisite Blend, A True Blend) low price terms (2009, 10, 12); Golden Virginia Smooth low price terms (2009, 10, 11, 12, 13); Old Holborn Yellow high price terms (2013); Samson Virginia low price terms (2010, 14)
Value	Ashford Gold Bright Virginia low price terms (2014); Carlton low price terms (2014); Gold Leaf low price terms (all years); Holborn Smooth Taste low price terms (2013, 14); JPS Silver low price terms (2014); Pall Mall low price terms (2010, 11, 12); Players Gold Leaf low price terms (2014); Salsa [Virginia Blend] low price terms (2012, 13, 14), high price terms (2012); Sterling low price terms (2012, 13, 14)

Notes: **Low price terms** = "value", "[greater] value for money", "lower end of the market", "lower cost", "lower priced", "economy", "discount", "budget"; **Mid-price terms** = "mid-price", "mid market", "sub premium"; **High price terms** = "premium", "targeting higher end of the market".

Not all brand variants that were allocated to price segments were mentioned in the commercial literature regarding segmentation (for a full list of all RYO brand variants within each price segment, see Table 6 in the main report). Make-your-own tobacco products, combi-packs, retailer and wholesaler brands, and all Swan SKUs were excluded from segmentation (see main text for details).

Tables S2 and S3 were used to check convergent validity between the allocation of FM and RYO SKUs to price segments using the Nielsen data, and price-related terms found in the commercial literature.

Table S4. Factory-made (FM) cigarette SKUs partially excluded from price segment boundaries for allocating brand variants to price segments in the ITC data, due to anomalous pricing.

SKU	Dates	Usual Segment	Anomalous Segment
ITL Lambert & Butler Gold king size 20's X1 PMP	Sep – Dec 12	Sub premium	Orig ulp
ITL Richmond king size 20's X1 No Promotion	Sep 15 – Jan 16	Value	Sub ulp
ITL Richmond superkings 20's X1 No Promotion	Jan 16	Value	Sub ulp
JTI Sterling superkings 20's X1 No Promotion	Aug 14 – Apr 15	Orig ulp	Sub ulp
JTI Benson & Hedges Blue king size 18's X1 PMP	Apr 15 – Feb 16	New ulp	Sub ulp
JTI Benson & Hedges Blue Sky Blue king size 18's X1 PMP	Apr 15 – Feb 16	New ulp	Sub ulp
JTI Benson & Hedges Blue superkings 18's X1 PMP	Apr 15 – Feb 16	New ulp	Sub ulp
JTI Benson & Hedges Blue Sky Blue superkings 18's X1 PMP	Apr 15 – Feb 16	New ulp	Sub ulp
JTI Sterling superkings 20's X1 PMP	May – Jul 14	Orig ulp	Sub ulp
JTI Sterling superkings 20's X1 No Promotion	Jul-14	Orig ulp	Sub ulp
Sterling 18's Packs	Jun – Dec 15	Orig ulp	Value
JTI Sterling Duel king size 19's X1 No Promotion	Aug – Sep 15	Orig ulp	Value
ITL John Player Special Blue 20's X1 No Promotion	May 14	Orig ulp	Sub ulp
ITL John Player Special Blue 20's X1 PMP	May 14	Orig ulp	Sub ulp
ITL John Player Special Blue superkings Blue 20's X1 PMP	May 14	Orig ulp	Sub ulp
ITL John Player Special Silver superkings 20's X1 No Promotion	Sep 13	Orig ulp	Sub ulp
PMI Raffles White 100s 20's X1 No Promotion	Jul 09	Vestigial mid-price	Premium
ITL Richmond king size 20's X1 PMP	May – Jun 14	Value	Orig ulp
ITL Richmond Menthol superkings 20's X1 No Promotion	May 14	Value	Orig ulp
Royals 20's Packs PMP	Apr – Jul 2	Value	Orig ulp
Royals 20's Packs	Aug 12 – Dec 14	Value	Orig ulp
Pall Mall 19's Packs PMP	Feb – Oct 13	Orig ulp	Sub ulp
Winston 19's Packs PMP	Feb – Oct 13	Orig ulp	Sub ulp

Note: ITL = Imperial Tobacco Limited; JTI = Japan Tobacco International; PMP = price-marked pack; ITC = International Tobacco Control; ulp = ultra low price; orig = original.

Table S5. Nielsen data study 2 - Real (base year = 2014) weighted average price changes over time (packs and sticks) by price segment.

	Jan-09	Jan-10	Jan-11	Jan-12	Jan-13	Jan-14	Jan-15	Dec-15
Price per stick								
FM premium	£0.29	£0.30	£0.31	£0.33	£0.35	£0.37	£0.40	£0.42
FM mid-price	£0.25	£0.26	£0.27	£0.29	£0.31	£0.33	£0.35	£0.36
FM value	£0.22	£0.22	£0.23	£0.26	£0.28	£0.30	£0.31	£0.33
FM sub value					£0.26	£0.27	£0.28	£0.29
RYO premium	£0.12	£0.12	£0.12	£0.14	£0.14	£0.15	£0.16	£0.17
RYO mid-price	£0.11	£0.11	£0.11	£0.13	£0.13	£0.14	£0.15	£0.15
RYO value	£0.10	£0.10	£0.11	£0.12	£0.12	£0.13	£0.13	£0.14
Difference in stick price								
FM premium to RYO value	£0.15	£0.16	£0.16	£0.17	£0.19	£0.20	£0.22	£0.22
Price per pack								
FM premium	£4.78	£4.97	£5.15	£5.32	£5.67	£5.99	£6.50	£6.76
FM mid-price	£4.05	£4.19	£4.33	£4.60	£4.87	£5.11	£5.36	£5.61
FM value	£3.80	£3.81	£3.97	£4.34	£4.65	£4.79	£5.05	£5.10
FM sub value					£4.75	£4.66	£4.71	£4.68
RYO premium	£4.42	£4.75	£4.96	£5.42	£5.81	£6.16	£6.63	£6.97
RYO mid-price	£3.64	£3.96	£4.13	£4.67	£4.96	£5.24	£5.51	£5.81
RYO value	£3.04	£2.92	£3.45	£3.94	£4.26	£4.16	£4.24	£4.28
Difference in pack price								
FM premium to RYO value	£1.74	£2.05	£1.70	£1.38	£1.41	£1.83	£2.26	£2.48

Note: FM = factory-made (cigarette); RYO = roll-your-own (tobacco).

Table S6. Nielsen data study 2 - Annual total volume of sticks and packs sold (millions) by price segment, and percentage of price-marked packaging (pmp), for factory-made (FM) cigarettes and roll-your-own (RYO) tobacco.

	non price marked	pmp	% pmp	non price marked	pmp	% pmp	non price marked	pmp	% pmp	non price marked	pmp	% pmp
Sticks	2012			2013			2014			2015		
FM premium	6,598	139	2.1%	5,907	21	0.4%	5,340	-	0%	4,509	-	0%
FM mid-price	9,307	4396	32.1%	7,572	4186	35.6%	6,147	3637	37.2%	4,956	2866	36.6%
FM value	5,509	5121	48.2%	5,003	5984	54.5%	4,530	7047	60.9%	4,644	6573	58.6%
FM sub value	91	193	68.0%	382	835	68.6%	908	1868	67.3%	1,571	2752	63.7%
RYO premium	2,833	1056	27.2%	2,659	772	22.5%	2,437	716	22.7%	2,186	655	23.1%
RYO mid-price	4,274	1617	27.4%	4,007	2271	36.2%	3,654	2529	40.9%	3,315	2697	44.9%
RYO value	731	632	46.4%	948	923	49.3%	1,073	1113	50.9%	1,158	1147	49.8%
Packs	2012			2013			2014			2015		
FM premium	409	7	1.7%	366	1	0.3%	332	-	0%	279	-	0%
FM mid-price	600	277	31.6%	489	270	35.6%	401	240	37.4%	323	190	37.0%
FM value	331	312	48.5%	305	367	54.6%	289	433	60.0%	297	411	58.1%
FM sub value	5	11	68.8%	20	50	71.4%	51	113	68.9%	93	173	65.0%
RYO premium	65	33	33.7%	64	21	24.7%	59	19	24.4%	52	17	24.6%
RYO mid-price	112	49	30.4%	103	68	39.8%	95	73	43.5%	87	76	46.6%
RYO value	20	19	48.7%	26	30	53.6%	30	38	55.9%	33	41	55.4%

Table S7. Nielsen data study 2 - Annual total volume of sticks and packs sold (millions) by pack size, and percentage of price-marked packaging (pmp), for factory-made (FM) cigarettes and roll-your-own (RYO) tobacco.

	non price marked	pmp	% pmp	non price marked	pmp	% pmp	non price marked	pmp	% pmp	non price marked	pmp	% pmp
Sticks	2012			2013			2014			2015		
FM 10 sticks	5,316	2249	29.7%	4,690	2637	36.0%	4,313	2804	39.4%	3,692	2640	41.7%
FM 17 to 20 sticks	15,932	7469	31.9%	13,993	8257	37.1%	12,473	9643	43.6%	11,891	9476	44.3%
RYO 10g	28	49	63.6%	55	167	75.2%	195	342	63.7%	323	362	52.8%
RYO 12.5g	2,966	1851	38.4%	2,882	1928	40.1%	2,484	1773	41.6%	1,868	1405	42.9%
RYO 25g	2,811	1047	27.1%	2,712	1307	32.5%	2,487	1363	35.4%	2,169	1378	38.8%
RYO 50g	2,000	380	16.0%	1,946	487	20.0%	1,703	615	26.5%	1,575	687	30.4%
Packs	2012			2013			2014			2015		
FM 10 sticks	531	225	29.8%	469	264	36.0%	431	280	39.4%	369	264	41.7%
FM 17 to 20 sticks	798	375	32.0%	702	417	37.3%	635	500	44.1%	619	506	45.0%
RYO 10g	1	2	66.7%	3	8	72.7%	10	17	63.0%	16	18	52.9%
RYO 12.5g	119	74	38.3%	115	77	40.1%	99	71	41.8%	75	56	42.7%
RYO 25g	56	21	27.3%	54	26	32.5%	50	27	35.1%	43	28	39.4%
RYO 50g	20	4	16.7%	19	5	20.8%	17	6	26.1%	16	7	30.4%

Table S8. Nielsen data study 2 - Annual real (base year = 2014) weighted average price per pack, by price segment and percentage of price-marking.

	Factory-made cigarettes				Roll-your-own tobacco		
	Premium	Mid-price	Value	Sub-value	Premium	Mid-price	Value
2011							
Non price-marked	£5.30	£4.60	£4.42		£6.02	£4.89	£4.33
Price-marked pack	£6.27	£4.60	£4.25		£4.35	£4.13	£3.59
% difference	-15.5	0	4.0		38.4	18.4	20.6
2012							
Non price-marked	£5.66	£4.93	£4.75	£5.19	£6.05	£5.29	£4.68
Price-marked pack	£6.85	£4.78	£4.56	£4.54	£5.07	£4.41	£3.89
% difference	-17.4	3.1	4.2	14.3	19.3	20.0	20.3
2013							
Non price-marked	£5.99	£5.19	£4.87	£4.92	£6.30	£5.54	£4.63
Price-marked pack		£4.96	£4.73	£4.54	£5.69	£4.76	£3.79
% difference		4.6	3.0	8.4	10.7	16.4	22.2
2014							
Non price-marked	£6.50	£5.47	£5.07	£5.00	£6.81	£5.74	£4.82
Price-marked pack		£5.17	£5.03	£4.57	£6.09	£5.24	£3.79
% difference		5.8	0.8	9.4	11.8	9.5	27.2
2015							
Non price-marked	£6.76	£5.76	£5.21	£4.98	£7.16	£6.08	£4.86
Price-marked pack		£5.34	£5.01	£4.51	£6.37	£5.52	£3.83
% difference		7.9	4.0	10.4	12.4	10.1	26.9

Table S9. Nielsen data study 3 - Net real (base year 2014) revenue per pack by calendar month and price segment for typical pack sizes of factory-made (FM) cigarettes and roll-your-own (RYO) tobacco.

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
2009 FM												
Premium	£1.36	£1.37	£1.39	£1.38	£1.38	£1.38	£1.38	£1.37	£1.37	£1.37	£1.38	£1.39
Mid-price	£0.86	£0.88	£0.89	£0.89	£0.88	£0.89	£0.90	£0.90	£0.90	£0.90	£0.90	£0.91
Value					£0.44	£0.45	£0.46	£0.47	£0.47	£0.47	£0.47	£0.49
2009 RYO												
Premium	£1.09	£1.04	£1.04	£1.04	£1.03	£1.03	£1.03	£1.03	£1.04	£1.04	£1.04	£1.04
Mid Price	£0.87	£0.82	£0.84	£0.84	£0.83	£0.83	£0.85	£0.85	£0.85	£0.85	£0.85	£0.87
Value	£0.86	£0.62	£0.76	£0.76	£0.65	£0.65	£0.57	£0.65	£0.60	£0.60	£0.59	£0.59
2010 FM												
Premium	£1.40	£1.41	£1.41	£1.38	£1.40	£1.40	£1.41	£1.41	£1.41	£1.43	£1.45	£1.45
Mid-price	£0.91	£0.93	£0.94	£0.91	£0.92	£0.93	£0.94	£0.94	£0.95	£0.96	£0.98	£0.98
Value	£0.43	£0.45	£0.46	£0.42	£0.45	£0.46	£0.47	£0.48	£0.49	£0.49	£0.49	£0.49
2010 RYO												
Premium	£1.08	£1.09	£1.09	£1.08	£1.09	£1.09	£1.10	£1.09	£1.10	£1.13	£1.13	£1.13
Mid Price	£0.85	£0.87	£0.88	£0.86	£0.87	£0.88	£0.89	£0.89	£0.89	£0.89	£0.90	£0.90
Value	£0.66	£0.65	£0.72	£0.65	£0.67	£0.69	£0.70	£0.73	£0.73	£0.74	£0.75	£0.75
2011 FM												
Premium	£1.43	£1.44	£1.45	£1.40	£1.44	£1.44	£1.44	£1.44	£1.46	£1.49	£1.50	£1.51
Mid-price	£0.95	£0.96	£0.98	£0.87	£0.89	£0.92	£0.95	£0.95	£0.96	£0.98	£1.00	£1.01
Value	£0.46	£0.48	£0.50	£0.32	£0.36	£0.44	£0.51	£0.51	£0.49	£0.48	£0.51	£0.56
2011 RYO												
Premium	£1.12	£1.11	£1.13	£1.03	£1.07	£1.07	£1.09	£1.11	£1.11	£1.14	£1.15	£1.15
Mid Price	£0.89	£0.91	£0.92	£0.81	£0.83	£0.86	£0.90	£0.91	£0.93	£0.94	£0.94	£0.95
Value	£0.73	£0.74	£0.76	£0.58	£0.58	£0.57	£0.61	£0.62	£0.69	£0.74	£0.76	£0.77
2012 FM												
Premium	£1.51	£1.51	£1.56	£1.48	£1.50	£1.52	£1.56	£1.57	£1.61	£1.64	£1.64	£1.64
Mid-price	£1.03	£1.03	£1.06	£0.92	£0.94	£0.97	£1.03	£1.05	£1.08	£1.09	£1.11	£1.13
Value	£0.57	£0.57	£0.58	£0.42	£0.44	£0.46	£0.47	£0.50	£0.58	£0.61	£0.61	£0.62
2012 RYO												
Premium	£1.17	£1.17	£1.19	£1.14	£1.14	£1.16	£1.21	£1.21	£1.23	£1.22	£1.22	£1.23
Mid Price	£0.97	£0.98	£1.00	£0.93	£0.93	£0.95	£0.97	£0.98	£1.00	£1.01	£1.02	£1.02
Value	£0.77	£0.77	£0.78	£0.68	£0.69	£0.72	£0.74	£0.76	£0.78	£0.77	£0.77	£0.79
2013 FM												
Premium	£1.65	£1.64	£1.66	£1.64	£1.67	£1.68	£1.70	£1.70	£1.73	£1.79	£1.82	£1.83
Mid-price	£1.15	£1.15	£1.17	£1.07	£1.08	£1.09	£1.15	£1.15	£1.17	£1.21	£1.22	£1.24
Value	£0.62	£0.63	£0.65	£0.53	£0.55	£0.58	£0.62	£0.59	£0.59	£0.59	£0.63	£0.69
Sub-value	£0.61	£0.64	£0.63	£0.50	£0.48	£0.47	£0.54	£0.53	£0.52	£0.53	£0.54	£0.55
2013 RYO												
Premium	£1.25	£1.25	£1.26	£1.22	£1.23	£1.24	£1.27	£1.28	£1.28	£1.32	£1.34	£1.34
Mid Price	£1.05	£1.06	£1.07	£1.01	£1.02	£1.03	£1.06	£1.06	£1.07	£1.09	£1.10	£1.13
Value	£0.80	£0.79	£0.78	£0.65	£0.68	£0.70	£0.71	£0.74	£0.76	£0.77	£0.79	£0.81
2014 FM												
Premium	£1.85	£1.87	£1.91	£1.86	£1.90	£1.93	£1.98	£2.00	£2.04	£2.05	£2.09	£2.10
Mid-price	£1.27	£1.28	£1.30	£1.20	£1.22	£1.27	£1.31	£1.32	£1.37	£1.40	£1.42	£1.43
Value	£0.70	£0.71	£0.75	£0.63	£0.65	£0.72	£0.76	£0.78	£0.80	£0.81	£0.82	£0.86
Sub-value	£0.55	£0.58	£0.60	£0.48	£0.48	£0.47	£0.47	£0.46	£0.48	£0.51	£0.53	£0.53
2014 RYO												
Premium	£1.35	£1.35	£1.38	£1.35	£1.35	£1.35	£1.37	£1.40	£1.44	£1.46	£1.47	£1.48
Mid Price	£1.14	£1.14	£1.15	£1.10	£1.10	£1.11	£1.12	£1.13	£1.17	£1.18	£1.19	£1.22
Value	£0.83	£0.84	£0.87	£0.83	£0.84	£0.84	£0.85	£0.85	£0.88	£0.90	£0.90	£0.92

2015 FM

Premium	£2.12	£2.12	£2.14	£2.10	£2.12	£2.13	£2.14	£2.13	£2.17	£2.20	£2.22	£2.22
Mid-price	£1.45	£1.46	£1.48	£1.42	£1.46	£1.49	£1.51	£1.52	£1.53	£1.55	£1.57	£1.57
Value	£0.90	£0.92	£0.92	£0.84	£0.85	£0.84	£0.84	£0.84	£0.85	£0.85	£0.85	£0.85
Sub-value	£0.54	£0.52	£0.52	£0.43	£0.45	£0.46	£0.46	£0.46	£0.50	£0.53	£0.55	£0.57

2015 RYO

Premium	£1.51	£1.52	£1.53	£1.50	£1.51	£1.51	£1.51	£1.52	£1.53	£1.57	£1.60	£1.61
Mid Price	£1.25	£1.26	£1.27	£1.23	£1.23	£1.25	£1.26	£1.26	£1.29	£1.31	£1.32	£1.33
Value	£0.93	£0.95	£0.98	£0.92	£0.92	£0.93	£0.94	£0.93	£0.93	£0.94	£0.96	£0.96

Note: FM premium and FM mid-price are 20 stick packs, FM value and FM sub-value are 19 stick packs (except in 2009 FM value are 20 stick packs because 19 stick packs were not available), and RYO is 12.5g pouches. The sub-value price segment for FM tobacco only emerged from 2013 onwards.

Table S10. Nielsen data study 3 - Change in net real (base year = 2014) revenue per pack from budget month, by price segment for typical pack sizes for factory-made (FM) cigarettes and roll-your-own (RYO) tobacco.

Budget year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2009 FM												
Premium		£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.01	£0.02	£0.03	£0.03
Mid-price		£0.00	£0.00	£0.01	£0.01	£0.01	£0.01	£0.02	£0.03	£0.02	£0.04	£0.06
Value		-£0.02	-£0.02	-£0.01	£0.00	£0.00	£0.00	£0.01	£0.02	£0.01	£0.02	£0.04
2009 RYO												
Premium		-£0.01	-£0.01	-£0.01	£0.00	£0.00	£0.00	£0.00	£0.00	£0.04	£0.06	£0.05
Mid-price		-£0.01	-£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	£0.03	£0.01	£0.03	£0.04
Value		-£0.11	-£0.11	-£0.19	-£0.11	-£0.16	-£0.16	-£0.17	-£0.17	-£0.10	-£0.11	-£0.04
2010 FM												
Premium	-£0.03	-£0.01	-£0.01	-£0.01	£0.00	£0.00	£0.02	£0.04	£0.04	£0.02	£0.03	£0.04
Mid-price	-£0.04	-£0.02	-£0.01	£0.00	£0.00	£0.01	£0.02	£0.04	£0.04	£0.01	£0.01	£0.03
Value	-£0.04	-£0.02	£0.00	£0.01	£0.02	£0.02	£0.03	£0.03	£0.03	£0.00	£0.02	£0.03
2010 RYO												
Premium	-£0.01	£0.00	£0.00	£0.00	£0.00	£0.01	£0.04	£0.04	£0.03	£0.02	£0.02	£0.04
Mid-price	-£0.02	-£0.01	£0.00	£0.01	£0.01	£0.01	£0.01	£0.02	£0.02	£0.01	£0.03	£0.04
Value	-£0.08	-£0.06	-£0.03	-£0.03	£0.00	£0.01	£0.01	£0.02	£0.02	£0.00	£0.01	£0.03
2011 FM												
Premium	-£0.05	-£0.01	-£0.01	-£0.01	-£0.01	£0.01	£0.04	£0.05	£0.06	£0.06	£0.06	£0.11
Mid-price	-£0.11	-£0.08	-£0.06	-£0.02	-£0.02	-£0.02	£0.00	£0.02	£0.04	£0.06	£0.06	£0.09
Value	-£0.18	-£0.13	-£0.05	£0.01	£0.01	-£0.01	-£0.02	£0.01	£0.06	£0.07	£0.07	£0.08
2011 RYO												
Premium	-£0.10	-£0.06	-£0.06	-£0.03	-£0.02	-£0.02	£0.01	£0.03	£0.02	£0.04	£0.04	£0.07
Mid-price	-£0.11	-£0.09	-£0.07	-£0.02	-£0.01	£0.01	£0.02	£0.02	£0.03	£0.05	£0.05	£0.08
Value	-£0.18	-£0.18	-£0.19	-£0.15	-£0.13	-£0.07	-£0.01	£0.00	£0.01	£0.01	£0.01	£0.03
2012 FM												
Premium	-£0.08	-£0.06	-£0.04	£0.00	£0.01	£0.05	£0.08	£0.08	£0.08	£0.09	£0.08	£0.11
Mid-price	-£0.14	-£0.13	-£0.09	-£0.04	-£0.02	£0.02	£0.03	£0.05	£0.07	£0.09	£0.09	£0.10
Value	-£0.16	-£0.14	-£0.12	-£0.11	-£0.08	£0.00	£0.02	£0.03	£0.04	£0.04	£0.05	£0.06
2012 RYO												
Premium	-£0.06	-£0.05	-£0.03	£0.01	£0.02	£0.03	£0.03	£0.03	£0.03	£0.06	£0.05	£0.06
Mid-price	-£0.07	-£0.06	-£0.04	-£0.02	-£0.02	£0.00	£0.01	£0.02	£0.02	£0.05	£0.06	£0.07
Value	-£0.10	-£0.09	-£0.07	-£0.04	-£0.03	-£0.01	-£0.01	-£0.01	£0.01	£0.02	£0.00	-£0.01
2013 FM												
Premium	-£0.03	£0.00	£0.01	£0.04	£0.04	£0.07	£0.13	£0.16	£0.16	£0.18	£0.21	£0.24
Mid-price	-£0.10	-£0.09	-£0.07	-£0.02	-£0.01	£0.01	£0.04	£0.06	£0.08	£0.11	£0.11	£0.13
Value	-£0.12	-£0.10	-£0.07	-£0.03	-£0.05	-£0.06	-£0.05	-£0.01	£0.05	£0.06	£0.06	£0.10
Sub-value	-£0.13	-£0.15	-£0.16	-£0.09	-£0.10	-£0.11	-£0.10	-£0.09	-£0.08	-£0.08	-£0.05	-£0.03
2013 RYO												
Premium	-£0.04	-£0.03	-£0.02	£0.01	£0.02	£0.02	£0.06	£0.09	£0.08	£0.09	£0.10	£0.13
Mid-price	-£0.05	-£0.05	-£0.03	-£0.01	-£0.01	£0.00	£0.02	£0.03	£0.06	£0.07	£0.07	£0.08
Value	-£0.13	-£0.09	-£0.08	-£0.07	-£0.04	-£0.02	-£0.01	£0.01	£0.04	£0.05	£0.06	£0.09
2014 FM												
Premium	-£0.05	£0.00	£0.02	£0.07	£0.09	£0.13	£0.15	£0.18	£0.20	£0.21	£0.22	£0.23
Mid-price	-£0.10	-£0.07	-£0.03	£0.01	£0.03	£0.08	£0.10	£0.12	£0.14	£0.15	£0.17	£0.19
Value	-£0.11	-£0.09	-£0.03	£0.02	£0.04	£0.06	£0.06	£0.08	£0.12	£0.15	£0.17	£0.18
Sub-value	-£0.12	-£0.12	-£0.13	-£0.13	-£0.14	-£0.12	-£0.09	-£0.08	-£0.07	-£0.07	-£0.08	-£0.08
2014 RYO												
Premium	-£0.04	-£0.03	-£0.03	-£0.01	£0.02	£0.06	£0.08	£0.09	£0.09	£0.13	£0.13	£0.14
Mid-price	-£0.05	-£0.04	-£0.03	-£0.02	-£0.02	£0.02	£0.04	£0.04	£0.07	£0.10	£0.11	£0.12
Value	-£0.04	-£0.03	-£0.03	-£0.02	-£0.02	£0.01	£0.03	£0.03	£0.05	£0.06	£0.07	£0.11
2015 FM												

Premium	-£0.04	-£0.01	-£0.01	£0.00	-£0.01	£0.03	£0.06	£0.08	£0.09
Mid-price	-£0.06	-£0.02	£0.01	£0.03	£0.03	£0.05	£0.07	£0.09	£0.09
Value	-£0.08	-£0.08	-£0.08	-£0.08	-£0.08	-£0.08	-£0.07	-£0.08	-£0.07
Sub-value	-£0.09	-£0.07	-£0.06	-£0.06	-£0.06	-£0.02	£0.01	£0.03	£0.05

2015 RYO

Premium	-£0.03	-£0.02	-£0.02	-£0.01	-£0.01	£0.00	£0.04	£0.08	£0.08
Mid-price	-£0.04	-£0.03	-£0.02	£0.00	£0.00	£0.03	£0.05	£0.05	£0.07
Value	-£0.05	-£0.06	-£0.05	-£0.04	-£0.05	-£0.05	-£0.04	-£0.02	-£0.02

Note: 2009 begins in May because the Budget was in April rather than March, and 2015 ends in December because this was the end of the data series. FM premium and FM mid-price are 20 stick packs, FM value and FM sub-value are 19 stick packs (except in 2009 FM value are 20 stick packs because 19 stick packs were not available), RYO is 12.5g pouches. The sub-value price segment for FM tobacco only emerged from 2013 onwards.

Table S11. ITC data study 2 - Linear random effects clustered regression analyses of individualised affordability regressed on time (tax year) and other covariates, for factory-made (FM) cigarette smokers, full data.

	Model 1 Unadjusted <i>N</i> = 3420, <i>Obs</i> = 7475			Model 2 Fully-adjusted <i>N</i> = 3420, <i>Obs</i> = 7475			Model 3 UK store based only <i>N</i> = 3174, <i>Obs</i> = 6439		
	<i>β</i>	<i>SE</i>	<i>p</i>	<i>β</i>	<i>SE</i>	<i>p</i>	<i>β</i>	<i>SE</i>	<i>p</i>
Time (tax year)	$\chi^2(1) = 118.76, p < .0001$			$\chi^2(1) = 59.84, p < .0001$			$\chi^2(1) = 54.29, p < .0001$		
2002	ref	---	---	ref	---	---	ref	---	---
2003	-0.05	0.23	0.833	-0.05	0.23	0.842	0.02	0.26	0.945
2004	-0.47	0.41	0.250	-0.44	0.40	0.267	-0.41	0.46	0.374
2005	-0.17	0.27	0.535	-0.07	0.27	0.806	-0.05	0.30	0.873
2006	-0.56	0.29	0.052	-0.36	0.28	0.208	-0.42	0.32	0.186
2007	-0.80	0.30	0.008	-0.54	0.30	0.069	-0.60	0.34	0.078
2008	-0.84	0.31	0.007	-0.38	0.31	0.224	-0.53	0.35	0.135
2010	-1.80	0.35	< .001	-1.11	0.35	0.002	-1.18	0.40	0.003
2012	-3.10	0.66	< .001	-2.45	0.66	< .001	-2.57	0.77	0.001
2013	-3.42	0.44	< .001	-2.56	0.44	< .001	-2.58	0.48	< .001
2014	-3.71	0.41	< .001	-2.82	0.42	< .001	-3.10	0.47	< .001
Time (tax year), reverse adjacent contrasts	$\chi^2(10) = 141.43, p < .0001$			$\chi^2(10) = 78.73, p < .0001$			$\chi^2(10) = 69.53, p < .0001$		
2003 vs 2002	-0.05	0.23	0.833	-0.05	0.23	0.842	0.02	0.27	0.945
2004 vs 2003	-0.42	0.42	0.309	-0.40	0.40	0.326	-0.43	0.46	0.359
2005 vs 2004	0.31	0.38	0.426	0.38	0.38	0.314	0.36	0.43	0.407
2006 vs 2005	-0.39	0.26	0.141	-0.29	0.26	0.264	-0.38	0.30	0.204
2007 vs 2006	-0.24	0.27	0.378	-0.18	0.27	0.495	-0.17	0.31	0.574
2008 vs 2007	-0.05	0.28	0.865	0.16	0.28	0.561	0.07	0.32	0.816
2010 vs 2008	-0.95	0.32	0.003	-0.73	0.31	0.020	-0.65	0.35	0.065
2012 vs 2010	-1.30	0.66	0.047	-1.33	0.65	0.039	-1.39	0.60	0.067
2013 vs 2012	-0.32	0.72	0.659	-0.11	0.71	0.873	-0.01	0.82	0.986
2014 vs 2013	-0.30	0.46	0.522	-0.25	0.45	0.575	-0.52	0.50	0.299
Sex									
Female	ref	---	---	ref	---	---	ref	---	---
Male	2.11	0.34	< .001	1.93	0.31	< .001	2.05	0.34	< .001
Age (continuous)									
Age	0.22	0.058	< .001	0.23	0.05	< .001	0.23	0.06	< .001
Age squared	-0.0036	0.00059	< .001	-0.0033	0.00060	< .001	-0.0034	0.00060	< .001
Region	$\chi^2(11) = 53.60, p < .0001$			$\chi^2(11) = 31.12, p = 0.0011$			$\chi^2(11) = 29.89, p = 0.0016$		
London	ref	---	---	ref	---	---	ref	---	---
Yorkshire & The Humber	-1.00	0.69	0.149	-0.45	0.64	0.481	-0.49	0.70	0.487

East Midlands	-0.77	0.74	0.293	-0.46	0.69	0.505	-0.56	0.75	0.454
Eastern	-1.09	0.68	0.110	-0.29	0.64	0.648	-0.34	0.70	0.624
North East	-2.71	0.86	0.002	-1.82	0.81	0.024	-2.43	0.89	0.006
South East	-0.42	0.59	0.471	0.19	0.55	0.729	0.35	0.60	0.559
South West	-1.84	0.77	0.017	-0.71	0.72	0.322	-0.65	0.78	0.401
West Midlands	-1.57	0.70	0.024	-0.82	0.65	0.210	-0.91	0.71	0.197
North West	-1.85	0.65	0.004	-0.85	0.61	0.163	-0.96	0.66	0.148
Wales	-1.59	0.85	0.062	-0.33	0.80	0.681	-0.35	0.86	0.680
Scotland	-3.07	0.65	< .001	-1.50	0.61	0.013	-1.44	0.65	0.028
Northern Ireland	-5.51	1.00	< .001	-4.09	0.93	0.000	-3.90	0.97	< .001
Ethnicity									
White	ref	---	---	ref	---	---	ref	---	---
Not white	1.65	0.72	0.021	-0.26	0.68	0.698	-0.22	0.73	0.761
Education									
	$\chi^2(2) = 139.46, p < .0001$			$\chi^2(2) = 95.14, p < .0001$			$\chi^2(2) = 90.82, p < .0001$		
Low	ref	---	---	ref	---	---	ref	---	---
Moderate	2.17	0.36	< .001	1.45	0.35	< .001	1.58***	0.38	< .001
High	5.14	0.45	< .001	4.23	0.44	< .001	4.48***	0.48	< .001
Time To First Cigarette (TTFC)									
	$\chi^2(3) = 111.47, p < .0001$			$\chi^2(3) = 116.41, p < .0001$			$\chi^2(2) = 120.96, p < .0001$		
Over 60 mins	ref	---	---	ref	---	---	ref	---	---
31 to 60 mins	-1.25	0.31	< .001	-1.19	0.30	< .001	-1.23***	0.34	< .001
6 to 30 mins	-2.33	0.31	< .001	-2.21	0.30	< .001	-2.39***	0.34	< .001
Within 5 mins	-3.87	0.38	< .001	-3.83	0.37	< .001	-4.33***	0.41	< .001
Purchase source									
UK store-based	ref	---	---	ref	---	---	ref	---	---
Non-UK/ non-store	4.15	0.25	< .001	4.10	0.25	< .001	---	---	---
Constant	---	---	---	88.83	1.36	< .001	88.92***	1.47	< .001

Notes: Model 1 is the unadjusted effects of affordability regressed separately on each predictor variable, Model 2 is adjusted for all covariates, and Model 3 is adjusted for all covariates but excludes purchases from non-UK/ non-store sources. Chi-square (χ^2) statistics are for overall effects of linear trends (time) and any variables with 3 or more categories

Table S12. ITC data study 2 - Linear random effects clustered regression analyses of individualised affordability regressed on time (tax year) and other covariates, for roll-your-own (RYO) cigarette smokers, full data.

	Model 1 Unadjusted <i>N</i> = 734, <i>Obs</i> = 1468			Model 2 Fully-adjusted <i>N</i> = 734, <i>Obs</i> = 1468			Model 3 UK store based only <i>N</i> = 598, <i>Obs</i> = 1056		
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>
Time (tax year)	$\chi^2(1) = 69.91, p < .0001$			$\chi^2(1) = 39.45, p < .0001$			$\chi^2(2) = 37.45, p < .0001$		
2006	ref	---	---	ref	---	---	ref	---	---
2007	0.02	0.31	0.938	0.26	0.30	0.388	0.32	0.42	0.444
2008	-0.02	0.33	0.952	0.18	0.32	0.568	0.20	0.45	0.663
2010	-0.78	0.35	0.025	-0.36	0.34	0.305	-0.35	0.46	0.450
2012	-1.68	0.64	0.009	-0.92	0.63	0.141	-1.50	0.83	0.073
2013	-2.44	0.42	< .001	-1.94	0.41	< .001	-2.37	0.53	< .001
2014	-2.58	0.40	< .001	-1.80	0.40	< .001	-2.16	0.51	< .001
Time (tax year), reverse adjacent contrasts	$\chi^2(6) = 76.70, p < .0001$			$\chi^2(6) = 48.45, p < .0001$			$\chi^2(6) = 46.68, p < .0001$		
2007 vs 2006	0.02	0.31	0.938	0.26	0.30	0.388	0.32	0.42	0.444
2008 vs 2007	-0.04	0.32	0.889	-0.08	0.31	0.799	-0.12	0.42	0.770
2010 vs 2008	-0.76	0.33	0.022	-0.54	0.33	0.100	-0.55	0.44	0.210
2012 vs 2010	-0.88	0.63	0.161	-0.57	0.62	0.354	-1.15	0.82	0.160
2013 vs 2012	-0.77	0.68	0.258	-1.01	0.67	0.128	-0.87	0.86	0.310
2014 vs 2013	0.14	0.42	0.744	0.13	0.41	0.745	0.21	0.50	0.676
Sex									
Female	ref	---	---	ref	---	---	ref	---	---
Male	0.64	0.41	0.120	0.90	0.39	0.021	0.98	0.48	0.040
Age (continuous)									
Age	0.16	0.087	0.075	0.16	0.08	0.047	0.14	0.10	0.157
Age squared	-0.0024	0.0008	0.006	-0.0023	0.0008	0.006	-0.0020	0.0010	0.038
		8			3		0		
Region	$\chi^2(11) = 19.59, p = 0.051$			$\chi^2(11) = 18.87, p = 0.064$			$\chi^2(11) = 18.96, p = 0.062$		
London	ref	---	---	ref	---	---	ref	---	---
Yorkshire & The Humber	-0.87	1.02	0.391	-0.84	0.97	0.385	-0.98	1.18	0.410
East Midlands	-0.38	0.92	0.675	-0.64	0.88	0.465	-0.88	1.08	0.418
Eastern	0.49	0.87	0.573	0.67	0.83	0.421	0.89	1.03	0.389
North East	-0.84	1.18	0.479	-0.77	1.12	0.492	-0.91	1.32	0.492
South East	0.72	0.83	0.382	0.41	0.79	0.600	0.45	0.98	0.648
South West	0.64	0.83	0.440	0.57	0.79	0.473	0.79	0.95	0.404
West Midlands	-0.99	0.93	0.288	-0.82	0.88	0.350	-0.76	1.06	0.474
North West	1.14	0.91	0.209	0.89	0.86	0.300	0.74	1.04	0.472
Wales	-1.83	0.97	0.060	-1.94	0.93	0.037	-2.63	1.12	0.020

Scotland	-0.44	0.96	0.651	0.18	0.92	0.844	0.22	1.10	0.845
Northern Ireland	-1.15	1.39	0.409	-0.38	1.32	0.771	-0.02	1.49	0.988
Ethnicity									
White	ref	---	---	ref	---	---	ref	---	---
Not white	-0.89	1.19	0.452	-0.08	1.13	0.947	-0.22	1.30	0.865
Education									
	$\chi^2 (2) = 19.78, p = 0.0001$			$\chi^2 (2) = 17.15, p = 0.0001$			$\chi^2 (2) = 19.78, p = 0.0001$		
Low	ref	---	---	ref	---	---	ref	---	---
Moderate	1.60	0.45	< .001	1.49	0.43	< .001	1.98	0.52	< .001
High	2.01	0.55	< .001	1.75	0.54	0.001	2.26	0.66	0.001
Time To First Cigarette (TTFC)									
	$\chi^2 (3) = 16.20, p = 0.0010$			$\chi^2 (3) = 23.89, p < .0001$			$\chi^2 (3) = 26.52, p < .0001$		
Over 60 mins	ref	---	---	ref	---	---	ref	---	---
31 to 60 mins	0.03	0.51	0.949	-0.05	0.48	0.913	-0.18	0.62	0.779
6 to 30 mins	-0.81	0.49	0.098	-1.10	0.40	0.019	-1.42	0.60	0.019
Within 5 mins	-1.68	0.56	0.003	-2.00	0.53	< .001	-2.79	0.69	< .001
Purchase source									
UK store-based	ref	---	---	ref	---	---	ref	---	---
Non-UK/ non-store	2.50	0.31	< .001	2.35	0.30	< .001	---	---	---
Constant	---	---	---	93.00	2.10	< .001	93.75	2.52	< .001

Notes: Model 1 is the unadjusted effects of affordability regressed separately on each predictor variable, Model 2 is adjusted for all covariates, and Model 3 is adjusted for all covariates but excludes purchases from non-UK/ non-store sources. Chi-square (χ^2) statistics are for overall effects of linear trends (time) and any variables with 3 or more categories

Table S13. Nielsen data study 4 - Annual volume of sticks and packs (millions) sold for factory-made (FM) cigarettes, roll-your-own (RYO) tobacco, and make-your-own (MYO) cigarettes.

	2009	2010	2011	2012	2013	2014	2015	% change 2009-2015
Sticks^a								
FM	41,831	40,951	39,148	36,545	34,055	32,883	30,710	-17
RYO	8,671	9,691	10,830	11,262	11,824	11,980	11,775	46
MYO	20	17	24	78	114	119	108	437
Total	50,522	50,659	50,003	47,885	45,993	44,982	42,593	-13
Packs^b								
FM	2,277	2,233	2,179	2,063	1,954	1,932	1,828	-15
RYO	239	262	291	303	323	336	335	40
MYO	1	1	1	2	2	2	2	132
Total	2,517	2,495	2,470	2,367	2,279	2,270	2,165	-12

Note: Sticks includes all SKUs > 0.008% market share. Packs includes all SKUs > 0.008%market share (providing this market share was achieved for three months) but excludes cartons, retailer & wholesaler brands, combi-packs, Berkeley and Swan.

Table S14. Nielsen data study 5 - Annual volumes of sticks and packs (millions) sold, by price segment, for factory-made (FM) cigarettes and roll-your-own (RYO) tobacco.

	2009	2010	2011	2012	2013	2014	2015	% change 2009-15	% change 2012-15
Sticks									
FM premium	9,904	8,739	7,587	6,737	5,927	5,340	4,509	-54	-33
FM mid-price	20,022	18,207	15,962	13,702	11,758	9,783	7,822	-61	-43
FM value	4,960	7,329	9,725	10,630	10,987	11,577	11,217	126	6
FM sub-value				284	1,217	2,777	4,323		1422
RYO premium	4,964	4,793	4,407	3,889	3,431	3,154	2,841	-43	-27
RYO mid-price	3,374	4,419	5,512	5,891	6,278	6,182	6,012	78	2
RYO value	333	479	885	1,363	1,871	2,187	2,305	592	69
Packs									
FM premium	603	532	466	415	367	332	279	-54	-33
FM mid-price	1,251	1,143	1,013	877	758	641	514	-59	-41
FM value	288	430	582	643	673	722	708	146	10
FM subvalue				16	70	165	266		1586
RYO premium	130	122	111	98	85	77	69	-47	-30
RYO mid-price	97	124	152	161	171	168	163	68	1
RYO value	12	15	27	40	56	68	74	519	86

Table S15. ITC data study 6 - survey collection dates by country

	Survey 5	Survey 6	Survey 7	Survey 8	Survey 9	Survey 10
United Kingdom						
Start date	Oct, 2006	Sep, 2007	Oct, 2008	Jul, 2010	Feb, 2013	Aug, 2014
End date	Feb, 2007	Feb, 2008	Mar, 2009	Jan, 2011	Sep, 2013	Dec, 2014
Australia						
Start date	Oct, 2006	Sep, 2007	Oct, 2008	Jul, 2010	Feb, 2013	Aug, 2014
End date	Feb, 2007	Feb, 2008	Mar, 2009	May, 2011	May, 2013	Dec, 2014
Canada						
Start date	Oct, 2006	Sep, 2007	Nov, 2008	Jul, 2010	Aug, 2013	No survey
End date	Feb, 2007	Feb, 2008	Jul, 2009	May, 2011	Oct, 2014	No survey
United States of America (USA)						
Start date	Oct, 2006	Sep, 2007	Nov, 2008	Jul, 2010	Aug, 2013	No survey
End date	Feb, 2007	Feb, 2008	Jul, 2009	Jun, 2011	Apr, 2015	No survey

Note: ITC-4C = International Tobacco Control 4-country study.

Table S16. ITC data study 6 - Missing data comparisons using univariate clustered logistic regressions indicating the odds of being in the valid sample (versus the sample excluded for misreported or incomplete data). (Total $N = 1924$, *observations* = 3793: total missing observations = 617, total valid observations = 3176)

	Missing (%)	Valid (%)	OR	95% CI low	95% CI high
Country			Overall effect: $\chi^2 (3) = 148.1, p < .0001$		
Canada	32.9	67.1	ref	---	---
United States of America	40.9	59.1	0.55	0.34	0.89
United Kingdom	11.2	88.8	6.14	4.10	9.21
Australia	12.0	88.0	5.55	3.58	8.59
Time To First Cigarette (mins)	$m = 62$ $sd = 152$	$m = 46$ $sd = 92$	0.998	0.996	0.999
Sex					
Female	18.6	81.4	ref	---	---
Male	14.8	85.2	1.48	1.12	1.97
Age group			Overall effect: $\chi^2 (2) = 8.2, p < .05$		
18 - 39 years	13.9	86.1	ref	---	---
40 - 54 years	15.1	84.9	0.85	0.59	1.22
55 years and over	18.8	81.2	0.61	0.42	0.88
Ethnicity					
White, English-speaking	15.4	84.6	ref	---	---
Not white/ not English-speaking	27.0	73.0	0.35	0.20	0.59
Education			Overall effect: $\chi (2) = 0.68, p = 0.713$		
Low	15.9	84.1	ref	---	---
Moderate	16.3	83.7	0.96	0.70	1.31
High	14.2	85.8	1.15	0.77	1.73
Income			Overall effect: $\chi (3) = 8.92, p < .05$		
Low	17.6	82.4	ref	---	---
Moderate	16.3	83.7	1.28	0.93	1.76
High	12.6	87.4	1.75	1.19	2.58
Not disclosed	18.5	81.5	1.00	0.62	1.63

Note: Effects are unadjusted univariate effects for each variable; OR = odds ratio; CI = confidence interval; mins = minutes; m = mean, sd = standard deviation. Percentages of missing and valid data are for observations, not individuals. Missing data was excluded on a variable-by-variable basis: education = 24 observations, ethnicity = 13 observations, and time to first cigarette = 88 observations (no missing data on country, sex, age group, or income).

Table S17. ITC data study 6 - Multivariate clustered linear regression analyses predicting the weight of tobacco per roll-your-own cigarette by country (all pairwise comparisons shown).

	Beta	SE (Beta)	p
Country comparisons	Overall effect: $\chi^2(3) = 223.5, p < .0001$		
USA (ref) vs. Canada	-0.31	0.055	< .001
USA (ref) vs. United Kingdom	-0.58	0.045	< .001
USA (ref) vs. Australia	-0.56	0.045	< .001
Canada (ref) vs. UK	-0.27	0.034	< .001
Canada (ref) vs. Australia	-0.25	0.035	< .001
Australia (ref) vs. UK	0.021	0.014	0.142

Notes: SE = standard error; USA = United States of America; ref = reference category. Effects are fully-adjusted clustered effects, controlling for time to first cigarette, sex, age, ethnicity, education, and income (see text for details of covariates).

Table S18. ITC data study 4 (analysis 4a) - Fully adjusted clustered, multinomial logistic regression of tobacco product type (premium FM is reference, with 25.0% using this product) on individual-level predictors, full results. $N = 2418$, $Obs = 4339$

	Mid-price FM (25.6%)				Value FM (19.0%)				RYO tobacco (30.4%)			
	RRR	95% CI low	95% CI high	p	RRR	95% CI low	95% CI high	p	RRR	95% CI low	95% CI high	p
Tobacco tax increase rate	Overall effect for tobacco tax increase rate: $\chi^2(9) = 187.43, p < .0001$											
0	ref	---	---	---	ref	---	---	---	ref	---	---	---
1	0.92	0.76	1.12	0.401	1.58	1.25	2.00	< .001	1.36	1.15	1.61	< .001
2	0.83	0.64	1.08	0.160	4.17	3.13	5.54	< .001	2.24	1.75	2.86	< .001
5	0.81	0.47	1.38	0.434	5.39	3.36	8.67	< .001	3.60	2.32	5.58	< .001
Dependence (HSI)	Overall effect for HSI: $\chi^2(6) = 16.19, p < .05$											
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
Moderate	1.20	0.96	1.49	0.101	1.46	1.15	1.86	0.002	1.42	1.13	1.78	0.002
High	0.90	0.57	1.41	0.636	1.08	0.65	1.79	0.761	1.38	0.90	2.12	0.143
Brand Loyalty												
No	ref	---	---	---	ref	---	---	---	ref	---	---	---
Yes	1.00	0.65	1.55	0.988	0.64	0.41	1.01	0.053	0.62	0.41	0.92	0.017
Product loyalty												
No	ref	---	---	---	ref	---	---	---	ref	---	---	---
Yes	0.95	0.70	1.30	0.762	0.94	0.67	1.32	0.731	0.81	0.60	1.10	0.173
Cheap purchases												
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
High	0.45	0.29	0.67	< .001	0.70	0.35	0.93	0.023	1.68	1.22	2.33	0.002
Sex												
Female	ref	---	---	---	ref	---	---	---	ref	---	---	---
Male	0.64	0.50	0.81	< .001	0.63	0.49	0.83	0.001	1.97	1.53	2.53	< .001
Age	Overall effect for age: $\chi^2(6) = 47.40, p < .0001$											
18 - 39	ref	---	---	---	ref	---	---	---	ref	---	---	---
40 - 54	0.73	0.55	0.96	0.024	1.30	0.94	1.80	0.108	1.00	0.74	1.34	0.975
55 and older	0.54	0.41	0.72	< .001	1.29	0.92	1.80	0.135	0.59	0.43	0.82	0.001
Education	Overall effect for education: $\chi^2(6) = 33.30, p < .0001$											
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
Moderate	0.80	0.61	1.05	0.114	0.59	0.43	0.80	0.001	0.76	0.57	1.02	0.065
High	0.53	0.39	0.73	< .001	0.39	0.27	0.55	< .001	0.66	0.48	0.93	0.015
Income	Overall effect for income: $\chi^2(9) = 63.46, p < .0001$											
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
Moderate	1.00	0.74	1.35	0.998	0.79	0.57	1.08	0.142	0.66	0.49	0.88	0.005
High	0.77	0.55	1.06	0.107	0.43	0.30	0.61	< .001	0.36	0.26	0.50	< .001
Not Disclosed	0.81	0.52	1.28	0.371	0.56	0.34	0.91	0.020	0.94	0.59	1.49	0.791
Region	Overall effect for region: $\chi^2(12) = 73.47, p < .0001$											

London	ref	---	---	---	ref	---	---	---	ref	---	---	---
Northern	2.38	1.55	3.65	< .001	2.64	1.43	3.58	< .001	1.50	0.95	2.36	0.079
Midlands and Eastern	1.40	0.93	2.11	0.108	1.19	0.77	1.85	0.440	1.57	1.04	2.38	0.033
Southern	1.13	0.74	1.70	0.574	1.63	1.04	2.55	0.032	2.03	1.33	3.10	0.001
Outside England	2.13	1.40	3.23	< .001	1.49	0.95	2.34	0.086	1.28	0.82	2.00	0.281
Relationship status												
Single	ref	---	---	---	ref	---	---	---	ref	---	---	---
Partnered	0.85	0.68	1.07	0.161	0.62	0.48	0.80	< .001	0.70	0.55	0.89	0.003
Ethnicity												
White	ref	---	---	---	ref	---	---	---	ref	---	---	---
Not white	0.82	0.32	0.84	0.007	0.51	0.31	0.83	0.006	0.33	0.20	0.54	< .001
Recruitment type												
Replenish	ref	---	---	---	ref	---	---	---	ref	---	---	---
Recontact	0.87	0.70	1.08	0.210	1.05	0.83	1.33	0.707	1.38	1.11	1.72	0.004
Survey mode												
Telephone	ref	---	---	---	ref	---	---	---	ref	---	---	---
Online	0.91	0.80	1.03	0.145	1.04	0.91	1.19	0.592	0.81	0.71	0.92	0.001

Note: FM = factory-made cigarettes; RYO = roll-your-own tobacco; HSI = heaviness of smoking index; RRR = relative risk ratio; CI = confidence interval; Obs = observations; tobacco tax increase rates are presented as percent above inflation. RRRs are for the fully-adjusted model, controlling for all variables listed.

Table S19. ITC data study 4 (analysis 4b) - Fully adjusted clustered, multinomial logistic regression of tobacco purchase changes (trading-up/ staying the same is reference, with 72.0% achieving this outcome) on individual-level predictors, full results. $N = 854$, $Obs = 1397$

	Trade-down FM (13.5%)				Switch to RYO tobacco (6.2%)				Stop purchasing ^a (8.3%)			
	RRR	95% CI low	95% CI high	p	RRR	95% CI low	95% CI high	p	RRR	95% CI low	95% CI high	p
Tobacco tax increase rate	Overall effect for tobacco tax increase rate: $\chi^2(6) = 40.36, p < .0001$											
1	ref	---	---	---	ref	---	---	---	ref	---	---	---
2	1.15	0.78	1.71	0.481	1.48	0.84	2.61	0.179	1.42	0.88	2.30	0.151
5	4.13	2.33	7.35	< .001	5.87	2.66	12.98	< .001	2.89	1.38	6.01	0.005
Dependence (HSI)	Overall effect for HSI: $\chi^2(6) = 8.94, p = 0.18$											
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
Moderate	0.85	0.61	1.19	0.343	1.36	0.83	2.21	0.217	0.80	0.53	1.20	0.280
High	1.00	0.52	1.91	0.999	0.44	0.13	1.56	0.203	0.40	0.13	1.19	0.099
Brand Loyalty												
No	ref	---	---	---	ref	---	---	---	ref	---	---	---
Yes	0.96	0.47	1.96	0.915	0.99	0.36	2.71	0.983	1.15	0.43	3.06	0.782
Cheap Purchases												
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
High	0.96	0.41	2.29	0.935	1.95	0.85	4.51	0.117	1.08	0.43	2.73	0.869
Sex												
Female	ref	---	---	---	ref	---	---	---	ref	---	---	---
Male	0.98	0.72	1.35	0.918	2.30	1.44	3.68	0.001	1.12	0.74	1.71	0.591
Age	Overall effect for age: $\chi^2(6) = 20.90, p < .005$											
18 - 39	ref	---	---	---	ref	---	---	---	ref	---	---	---
40 - 54	0.80	0.52	1.23	0.315	0.55	0.31	0.53	0.043	0.65	0.36	1.16	0.145
55 and older	0.63	0.41	0.98	0.041	0.28	0.15	1.49	< .001	0.84	0.48	1.47	0.594
Education	Overall effect for education: $\chi^2(6) = 6.60, p = 0.360$											
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
Moderate	0.64	0.45	0.91	0.013	0.87	0.50	1.49	0.605	1.03	0.64	1.66	0.896
high	0.86	0.55	1.32	0.487	1.09	0.54	2.19	0.806	0.99	0.53	1.83	0.972
Income	Overall effect for income: $\chi^2(9) = 17.82, p < .05$											
Low	ref	---	---	---	ref	---	---	---	ref	---	---	---
Moderate	1.10	0.75	1.61	0.617	0.57	0.31	1.02	0.059	1.12	0.61	2.04	0.717
High	0.90	0.58	1.40	0.649	0.47	0.24	0.91	0.026	1.83	0.98	3.42	0.058
Not disclosed	1.17	0.66	2.09	0.590	0.73	0.28	1.90	0.526	2.57	1.20	5.01	0.015
Region	Overall effect for region: $\chi^2(12) = 12.32, p = 0.420$											
London	ref	---	---	---	ref	---	---	---	ref	---	---	---
Northern	1.58	0.89	2.80	0.116	2.03	0.81	5.09	0.129	1.36	0.67	2.75	0.352
Midlands and Eastern	1.13	0.62	2.06	0.691	2.34	0.97	5.63	0.057	1.11	0.75	1.66	0.840

Southern	1.52	0.85	2.74	0.161	2.01	0.79	5.11	0.143	0.62	0.22	1.75	0.742
Outside England	1.64	0.92	2.91	0.094	1.53	0.61	3.88	0.367	0.80	0.53	1.20	0.388
Relationship status												
Single	ref	---	---	---	ref	---	---	---	ref	---	---	---
Partnered	0.71	0.52	0.97	0.031	0.64	0.40	1.03	0.068	1.11	0.75	1.66	0.596
Ethnicity												
White	ref	---	---	---	ref	---	---	---	ref	---	---	---
Not white	0.55	0.20	1.47	0.234	0.44	0.17	1.13	0.088	0.62	0.22	1.75	0.365
Recruitment type												
Replenish	ref	---	---	---	ref	---	---	---	ref	---	---	---
Recontact	1.58	1.00	2.51	0.052	1.00	0.55	1.83	0.991	0.96	0.58	1.56	0.857
Survey mode												
Telephone	ref	---	---	---	ref	---	---	---	ref	---	---	---
Online	0.88	0.71	1.09	0.247	0.76	0.55	1.03	0.077	0.90	0.70	1.17	0.443

Notes: FM = factory-made cigarettes; RYO = roll-your-own tobacco; HSI = heaviness of smoking index; RRR = relative risk ratio; CI = confidence interval; tobacco tax increase rates are presented as percent above inflation. RRRs are for the fully-adjusted model, controlling for all variables described in text. All predictors are measured at baseline, except for tobacco tax rates, measured at outcome survey. Participants smoking RYO tobacco at baseline, and those currently quit at outcome but for under 6 months are excluded.

^aNot purchasing because currently (at time of outcome survey) quit for at least six month.

Table S20. ITC data study 5 - Fully adjusted clustered logistic regression of making a quit attempt and achieving at least 6 months of sustained abstinence, full results.

	Analysis 5a Making a quit attempt (N = 1304, Obs = 2202)				Analysis 5b Achieving at least 6 months quit (N = 1194, Obs = 2017)			
	OR	95% CI low	95% CI high	p	OR	95% CI low	95% CI high	p
Tobacco product type	$\chi^2 (3) = 7.95, p < .05$				$\chi^2 (3) = 8.78, p < .05$			
Premium FM	ref	---	---	---	ref	---	---	---
Mid-price FM	1.28	0.90	1.82	0.167	2.31	1.17	4.55	0.016
Value FM	1.31	0.89	1.94	0.174	2.81	1.35	5.88	0.006
RYO tobacco	0.83	0.59	1.18	0.308	2.22	1.15	4.29	0.018
Tobacco tax increase rate	$\chi^2 (2) = 7.79, p < .05$				$\chi^2 (2) = 6.29, p < .05$			
1	ref	---	---	---	ref	---	---	---
2	1.47	1.11	1.93	0.006	1.96	1.07	3.62	0.030
5	1.45	0.93	2.26	0.100	2.66	1.16	6.08	0.020
Dependence (HSI)	$\chi^2 (2) = 9.57, p < .01$				$\chi^2 (2) = 5.36, p = 0.069$			
Low	ref	---	---	---	ref	---	---	---
Moderate	0.67	0.52	0.86	0.002	0.62	0.44	1.09	0.113
High	0.73	0.44	1.20	0.213	0.31	0.10	0.92	0.035
Brand loyalty								
No	ref	---	---	---	ref	---	---	---
Yes	0.66	0.40	1.09	0.108	0.89	0.38	2.07	0.784
Product loyalty								
No	ref	---	---	---	ref	---	---	---
Yes	1.46	0.98	2.17	0.062	1.08	0.54	2.18	0.824
Cheap purchases								
Low	ref	---	---	---	ref	---	---	---
High	0.77	0.48	1.22	0.262	1.16	0.55	2.45	0.692
Sex								
Female	ref	---	---	---	ref	---	---	---
Male	0.87	0.67	1.15	0.328	1.10	0.70	1.74	0.685
Age	$\chi^2 (2) = 8.91, p < .05$				$\chi^2 (2) = 2.57, p = 0.276$			
18 - 39	ref	---	---	---	ref	---	---	---
40 - 54	0.62	0.43	0.88	0.007	0.62	0.34	1.13	0.118
55 and older	0.60	0.42	0.86	0.005	0.80	0.44	1.44	0.457
Education	$\chi^2 (2) = 10.98, p < .005$				$\chi^2 (2) = 3.38, p = 0.184$			
Low	ref	---	---	---	ref	---	---	---
Moderate	1.00	0.73	1.36	0.978	1.42	0.84	2.40	0.187
High	1.82	1.25	2.65	0.002	1.75	0.92	3.33	0.088

Income		$\chi^2 (3) = 0.42, p = 0.935$				$\chi^2 (3) = 3.63, p = 0.305$			
Low	ref	---	---	---	ref	---	---	---	
Moderate	1.00	0.72	1.39	0.989	1.32	0.73	2.40	0.363	
High	1.06	0.73	1.54	0.747	1.69	0.88	3.23	0.113	
Not disclosed	1.14	0.69	1.89	0.607	1.99	0.85	4.68	0.115	
Region		$\chi^2 (4) = 1.4, p = 0.836$				$\chi^2 (4) = 1.41, p = 0.842$			
London	ref	---	---	---	ref	---	---	---	
Northern	1.16	0.71	1.90	0.542	0.85	0.38	1.92	0.693	
Midlands and Eastern	1.08	0.67	1.73	0.746	0.99	0.45	2.15	0.973	
Southern	0.94	0.59	1.51	0.805	0.72	0.32	1.62	0.434	
Outside England	0.97	0.60	1.59	0.915	0.74	0.32	1.69	0.45	
Relationship status									
Single	ref	---	---	---	ref	---	---	---	
Partnered	1.31	1.01	1.70	0.040	1.35	0.87	2.09	0.182	
Ethnicity									
White	ref	---	---	---	ref	---	---	---	
Not white	1.43	0.74	2.77	0.284	1.50	0.50	4.50	0.470	
Recruitment type									
Replenish	ref	---	---	---	ref	---	---	---	
Recontact	0.89	0.67	1.20	0.462	1.35	0.75	2.42	0.3112	
Survey mode									
Telephone	ref	---	---	---	ref	---	---	---	
Online	1.01	0.86	1.18	0.932	0.92	0.72	1.20	0.552	

Notes: In Analysis 5a 39.4% made a quit attempt, and in Analysis 5b 9.7% achieved sustained abstinence for at least six months, between baseline and outcome surveys. FM = factory-made cigarettes; RYO = roll-your-own tobacco; OR = odds ratio; CI = confidence interval; tobacco tax increase rates are presented as percent above inflation. ORs are for the fully-adjusted model, controlling for all variables described in text. Chi-square (χ^2) statistics are for overall effects of any variables with 3 or more categories). All predictors are measured at baseline, except for tobacco tax increase rates, measured at the outcome survey. Achieving at least 6 months quit is defined as achieving at least 6 months of sustained abstinence between the baseline and outcome surveys regardless of status at the outcome survey. Participants currently quit for less than 6 months at the outcome survey were excluded from Analysis 5b (see text).