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Price-based measures to reduce alcohol consumption

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Cardiff Business School, 30 January 2013

Introduction

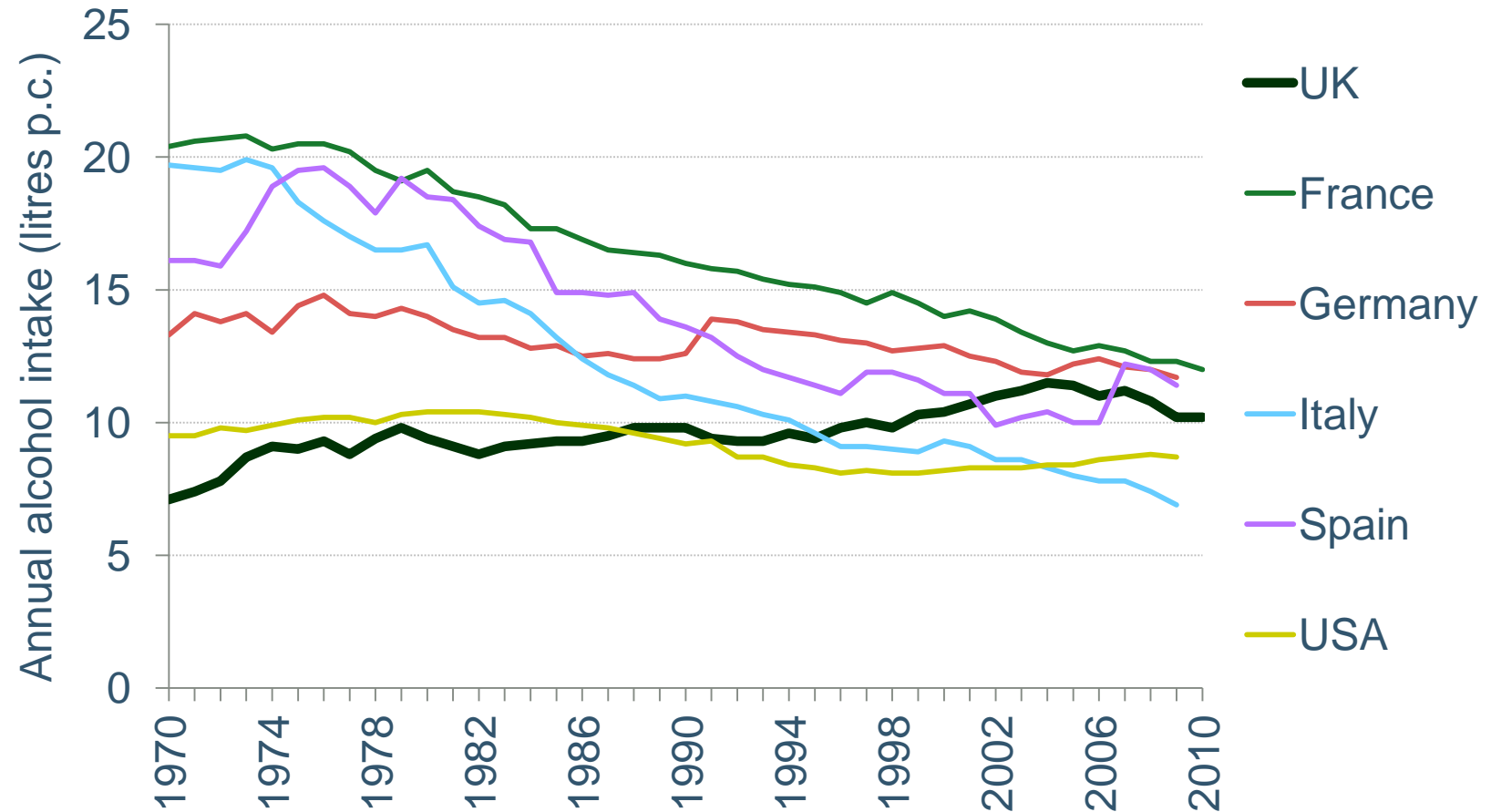
- Governments long been concerned about excess alcohol intake
- Excise taxes main price-based measure since 17th Century
- Recent plans consider alternative price interventions:
 1. Minimum unit pricing (MUP)
 - floor price based on alcohol content (unit = 10ml alcohol)
 - 50p rate in Scotland, 45p rate planned for England & Wales
 2. Banning quantity-based deals on alcohol
 - prohibit multi-buy deals, discounts on multi-packs
 - Scotland introduced (off-trade) Oct 2011, consultation for E&W
- Plan for ban on ‘below-cost’ (tax) sale of alcohol in E&W superseded by intended minimum price
 - would have impacted only 1% of off-licence units

Today's presentation

- Background evidence on alcohol consumption and prices
- Economics of price-based alcohol interventions
 - rationale for intervention
 - price as an instrument
- Current system of alcohol taxation
 - what might a more rational system look like?
 - what are the constraints on reform?
- Descriptive analysis of MUP and quantity discount ban
 - draw on detailed household-level off-licence purchase data
 - impact on households by average alcohol purchasing and income
 - how might households and firms respond?

Alcohol intake, 1970 to 2010

Recent fall in UK, but different long-term trend to other EU countries

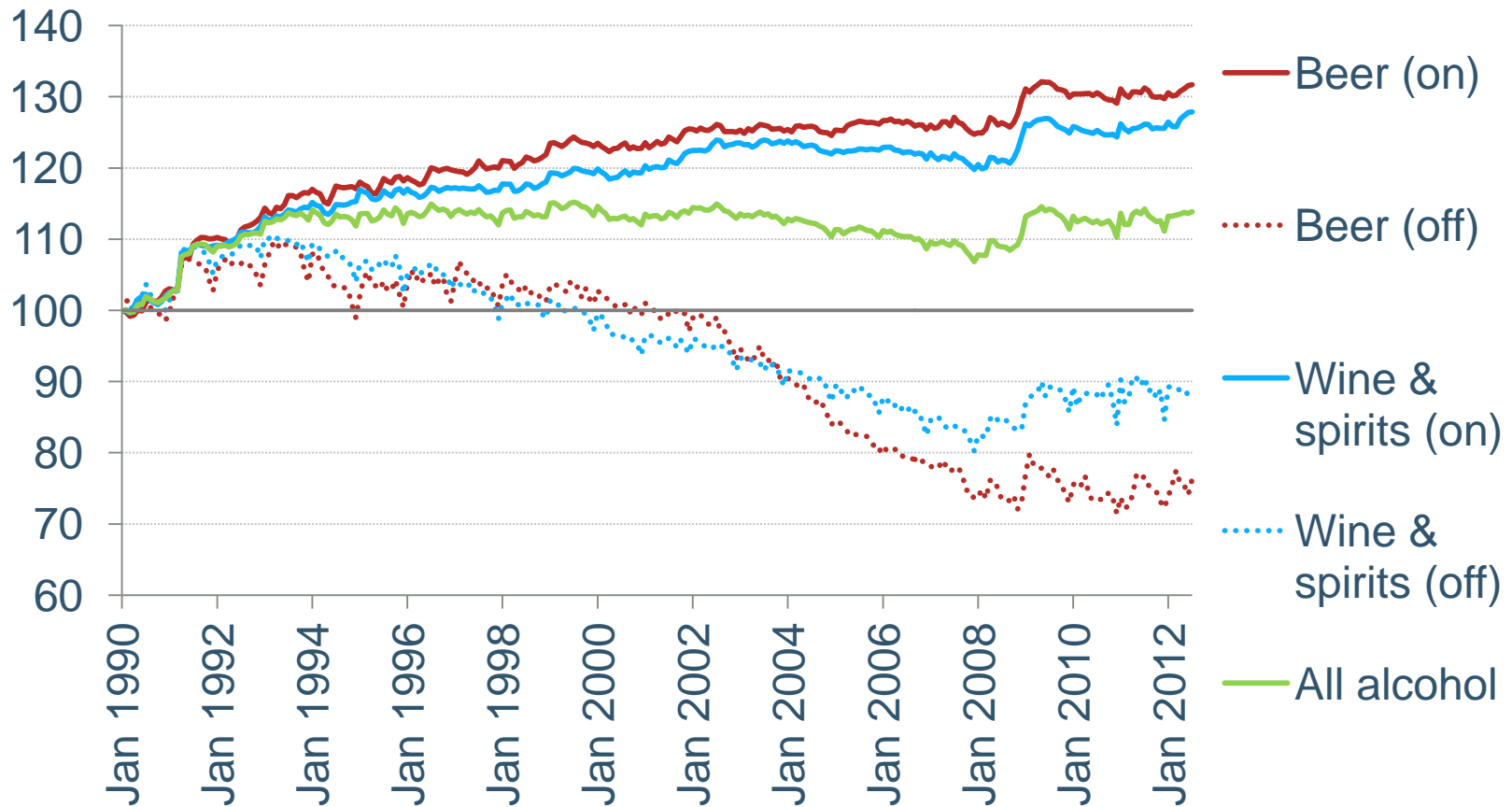


Source: OECD Health Statistics 2012

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Real alcohol price index, 1990 to 2012

Relative to all-items Retail Prices Index, by type (Jan 1990 = 100)



Source: Calculated from ONS Retail Prices Index data

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Economics of alcohol price interventions

- Key economic rationale is externality argument
 - alcohol consumption imposes social costs
 - increase in price can align private and social incentives
- External costs include crime, family problems, costs of treatment
 - health costs partly private, but include costs to NHS (tax cost)
 - lost productivity private cost (low wage) but may be social spillovers
- Behavioural economics insights – ‘internality’ rationale
 - self-control: desire to drink less but hard to do so (cf. smoking)
 - higher prices welfare-improving? Little evidence for alcohol

Alcohol consumption and externalities

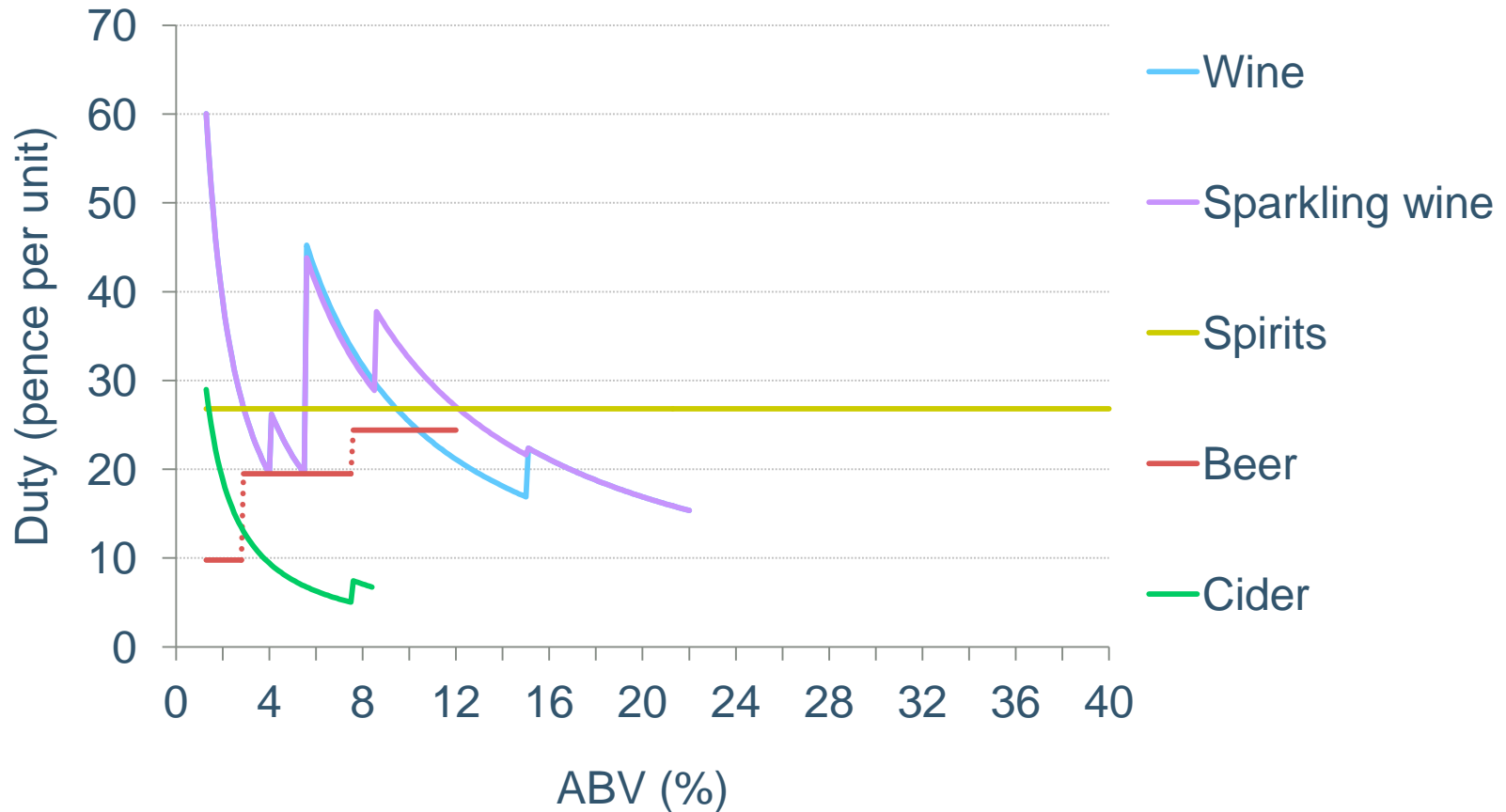
- What matters for policy is the *marginal* external cost
 - extra social harm caused by an additional unit drunk
- Marginal externality could vary across individuals or drinks
 - ‘abusers’ and ‘non-abusers’, first unit versus thirtieth unit
- Optimal policy would vary along these dimensions
 - relatively little information on variation in externalities
 - any price-based policy will be somewhat blunt
- Theoretical papers have usually assumed costs vary by drinker
 - Pogue and Sgontz (1989): trade-off benefit from reducing harmful consumption and cost of reducing non-harmful intake
- If variation across drinks, marginal cost \gg average cost

Alcohol excise taxation

- Specific excise taxes apply to alcohol, vary by type and strength
 - ideally want larger tax on drinks with larger marginal externality
- Estimated to raise £10.1 billion in 2012/13 (1.7% of revenue)
- Subject to EU Directive (92/83/EEC) governing broad structure
 - beer and spirits taxed according to alcohol content
 - wine and cider taxed according to volume of product
- Changes to beer tax structure in 2011
 - additional tax on strong beer (>7.5% ABV)
 - reduced rate on low strength beer (<=2.8% ABV)
- Taxes have been rising in real terms since 2008
 - before that had been flat (beer, wine) or falling (cider, spirits)

Current structure of alcohol excise duties

By alcohol type and strength, pence per unit



Source: Calculated from HMRC figures

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Key issues for alcohol excise taxes

- Seems plausible that tax base should be alcohol for all types
- Should tax per alcohol unit vary across types?
 - Saffer and Chaloupka (1994): cannot reject equivalence as optimal
 - Parry et al (2009): case to tax beer > wine > spirits
 - both based on elasticity estimates and complementarity with leisure
 - neither assumes any variation in marginal externality
- Are tax increases passed through to consumer prices?
 - empirical evidence suggests *over*-shifting on average
 - Young and Bielińska-Kwapisz (2002); Kenkel (2005); Bergman and Hansen (2010)
 - may vary across products
 - under-shift on cheap products if consumers price-sensitive?

Analysis of alternative policies: data

- Market research data from Kantar Worldpanel
- Ongoing household-level panel, sample size c. 25,000
- Record grocery purchases with in-home scanner
 - includes off-trade alcohol
- Households can drop out at any time, mean duration c. 2 years
- Quota sampling, roughly consistent panel composition
 - demographics recorded at sign up, update approx. every 9 months
- Data records each item purchased on each trip at barcode level
 - price matched in from till receipts, includes deal information
 - calculate ABV% from product characteristics, online searches and (where necessary) ONS conversion factors
 - gives number of units and price per unit

Analysis of alternative policies: data

- Take 52 weeks from Nov 2009 to Oct 2010
 - adjust prices and spending to October 2012 values using RPI
- Select sample of households who report spending consistently
 - 21,542 hhs (median: 301 day duration), 522,125 alcohol purchases
- Calculate units purchased per adult per week for each household
 - take as a measure of how well targeted various policies might be
- Key strengths
 - long observation period: purchases should approximate intake
 - large sample size, detailed purchase and price information
- Key weaknesses
 - no on-trade purchases: but policies have little on-trade impact
 - household-level not individual-level data

Off-trade alcohol purchasing behaviour

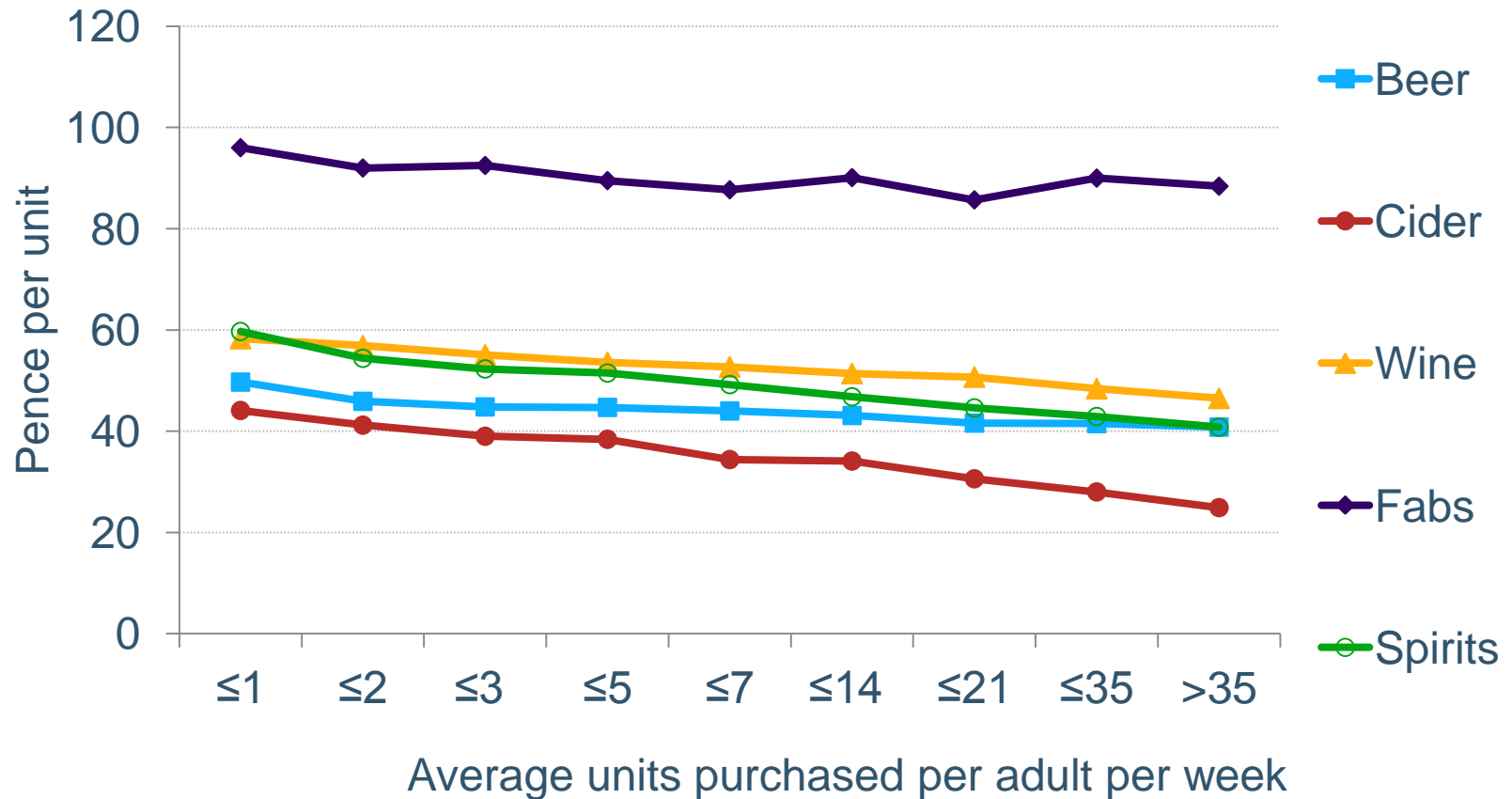
By average units purchased per adult per week, 2010 data

Units group	N	Avg. budget share (%)	Avg. units (adult/week)	Avg. pence/unit
None	2,786	0.0	0.0	—
≤1	4,959	1.4	0.5	56.0
≤2	2,831	3.7	1.5	52.3
≤3	1,872	5.7	2.5	50.6
≤5	2,406	8.4	3.9	49.7
≤7	1,573	11.7	5.9	48.6
≤14	2,586	17.0	9.9	47.2
≤21	1,103	24.9	17.1	45.8
≤35	898	31.7	26.6	43.8
>35	528	44.3	53.2	41.5
<i>All</i>	<i>21,542</i>	<i>8.8</i>	<i>5.9</i>	<i>45.9</i>

Source: Calculated from Kantar Worldpanel

Average per-unit price by alcohol type

By units per adult per week, 2010 data (Oct 2012 values)



Source: Calculated from Kantar Worldpanel

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Off-trade alcohol purchasing behaviour

By household gross income group, 2010 data (prices in Oct 2012 values)

Income group	N	% buy alcohol	Avg. budget share (%)	Avg. units (adult/week)	Avg. pence/unit
Not recorded	5,016	86.3	8.3	5.2	46.6
<£10k	2,100	76.9	7.3	5.4	42.9
£10-20k	4,494	84.9	8.4	5.9	43.2
£20-30k	3,500	88.6	9.2	6.4	45.3
£30-40k	2,556	90.5	9.3	6.2	46.6
£40-50k	1,673	92.0	9.7	6.0	47.5
£50-60k	1,015	91.8	10.0	6.2	48.8
£60k+	1,188	93.8	10.7	6.4	52.8
<i>All</i>	<i>21,542</i>	<i>87.1</i>	<i>8.8</i>	<i>5.9</i>	<i>45.9</i>

Source: Calculated from Kantar Worldpanel

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Minimum unit pricing (MUP)

- Idea took hold with Donaldson report (2009)
 - generally supported by medical community (NICE, RCP, HoC HSC)
- Scottish government attempted to legislate in 2010
 - minority SNP administration had measure voted down
 - majority administration passed bill for 50p MUP in 2012
- Now has wide support at Westminster for England and Wales
 - Home Office Alcohol Strategy suggested 40p rate in March 2012
 - consultation document in November increased to 45p
- Concerns about legality of MUP under EU trade Directives
 - ongoing legal challenges will delay implementation in Scotland
 - need to demonstrate clear public health rationale

MUP examples (off-trade)

Average prices from 2010 Worldpanel data (Oct 2012 prices)

Item	Units	Avg. sale price	40p MUP	45p MUP	50p MUP
Single can 500ml lager, 5% ABV	2.5	£1.15	£1.00	£1.13	£1.25
Single can 500ml cider, 8.2% ABV	4.1	£1.50	£1.64	£1.85	£2.05
2 litre bottle cider, 5.3% ABV	10.6	£2.40	£4.24	£4.77	£5.30
4×440ml cans beer, 3.8% ABV	6.7	£3.42	£2.68	£3.01	£3.34
750ml bottle wine, 12.5% ABV	9.4	£4.41	£3.75	£4.22	£4.69
4×275ml bottles fabs, 4% ABV	4.4	£3.81	£1.76	£1.98	£2.20
70cl bottle spirits, 40% ABV	28	£12.51	£11.20	£12.60	£14.00

45p MUP by off-trade alcohol type

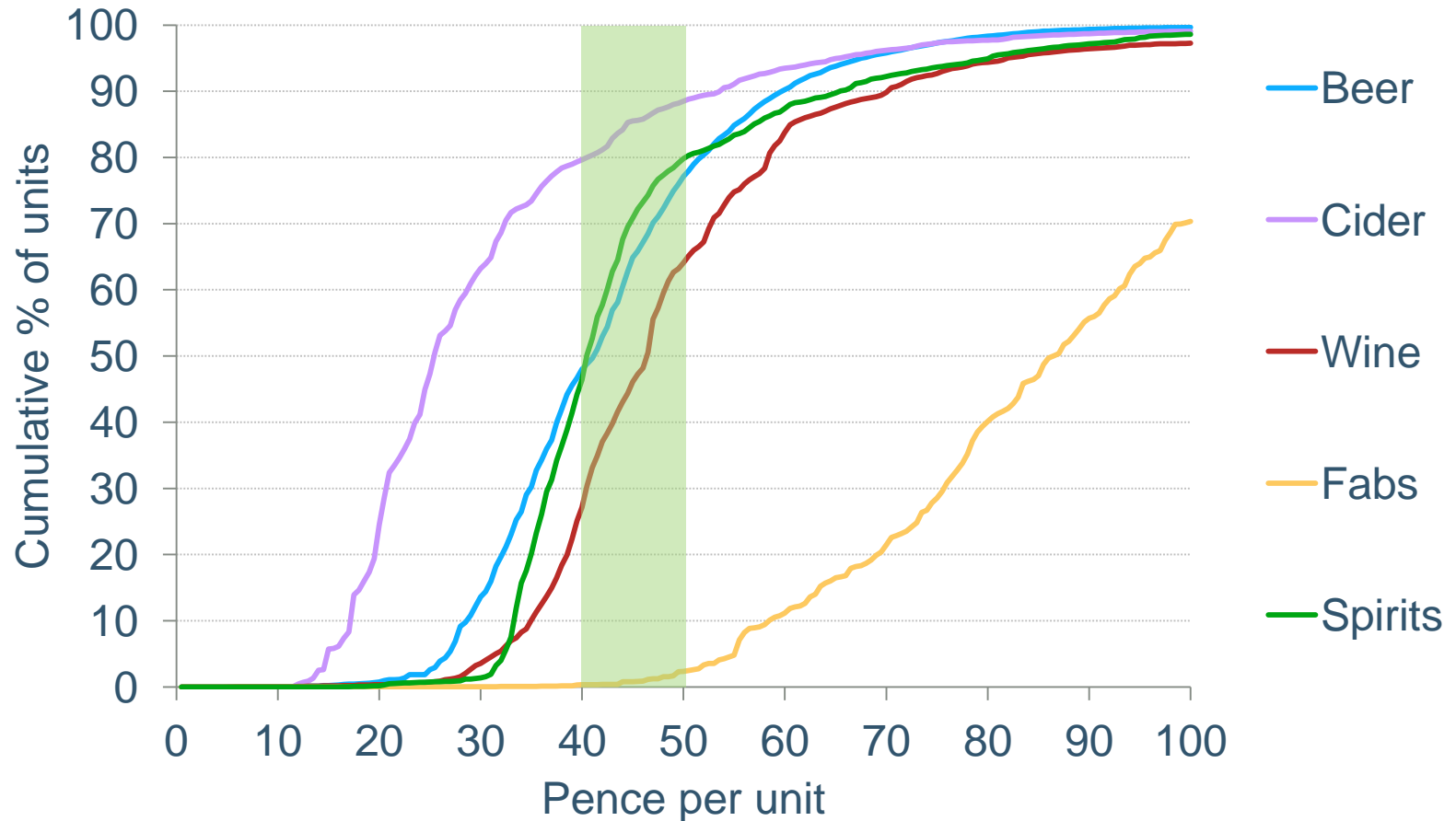
Average price per unit (Oct 2012 values) and % of units affected

Type	% units sold	Avg. pence/unit	% units affected
Beer	21.7	42.9	64.9
Cider	8.8	31.1	85.6
Wine	41.8	50.4	46.1
Fabs	0.6	90.0	0.8
Spirits	27.1	45.1	70.9
<i>All</i>	<i>100.0</i>	<i>45.9</i>	<i>60.1</i>

Source: Calculated from Kantar Worldpanel (2010 data)

Cumulative distribution of per-unit alcohol prices

By off-licence alcohol type (2010 data, October 2012 prices)



Source: Calculated from Kantar Worldpanel

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How significant is a 45p MUP?

% units affected, by income and purchase level

	≤ 7 units	≤ 14 units	≤ 21 units	≤ 35 units	> 35 units	All
<£10k	53.1	64.2	73.0	72.5	81.6	69.0
£10-20k	53.0	62.0	67.0	73.2	78.5	67.5
£20-30k	51.1	55.9	62.6	60.6	72.4	60.9
£30-40k	47.8	53.0	57.1	64.0	69.2	57.7
£40-50k	45.2	53.2	59.5	66.4	(61.0)	55.7
£50-60k	41.0	48.7	52.7	54.9	(67.4)	50.9
£60k+	35.0	45.1	38.1	(42.8)	(61.6)	43.9
All	48.3	55.8	60.0	65.3	72.9	60.1

Source: Calculated from Kantar Worldpanel. Note: "all" row includes non-recorded incomes. Cells with fewer than 50 observations in parentheses.

Impact of 45p MUP on household budgets

% food-in spending, by income and purchase level, no behaviour change

	≤ 7 units	≤ 14 units	≤ 21 units	≤ 35 units	> 35 units	All
<£10k	0.5	2.7	4.1	6.6	11.9	1.3
£10-20k	0.5	2.3	3.7	5.6	8.7	1.2
£20-30k	0.5	2.0	3.8	4.5	9.8	1.3
£30-40k	0.5	1.9	3.1	4.7	5.8	1.1
£40-50k	0.4	2.1	2.9	4.5	(5.8)	1.1
£50-60k	0.4	1.7	2.6	3.4	(5.5)	0.9
£60k+	0.3	1.6	1.9	(2.1)	(4.0)	0.8
All	0.5	2.0	3.3	4.8	8.5	1.1

Source: Calculated from Kantar Worldpanel. Note: “all” includes non-recorded incomes and non-drinkers. Cells with fewer than 50 observations in parentheses.

45p MUP: key points

- Largest impact on ‘heavy’ drinkers
 - pay less per unit on average, almost $\frac{3}{4}$ off-trade units affected
- But impact still quite large on moderate consumers
 - $\frac{1}{2}$ units affected for those consuming fewer than 7 units/week
- Likely to be mildly regressive
 - poorer households less likely to drink, but pay lower prices
 - not really a key concern of alcohol price interventions?
- Alcohol retailers and manufacturers likely to benefit
 - HO estimates £1 billion increase in industry revenue (year 1)
 - plans to offset through other measures likely to be ill-targeted
 - Scotland: ‘Social Responsibility Levy’ on alcohol retailers
 - England & Wales: “work with industry” to reduce prices on other groceries

45p MUP: consumer and firm responses

- Consumer responses (on average and variation across types)
 - willingness to substitute between alcohol types
 - substitution from alcohol to other ‘problem’ consumption
 - illicit alcohol market, cross-border effects (England/Scotland?)
- Producer and retailer response (little attention in literature)
 - incentives to sell more profitable low cost products
 - advertising and other non-price responses
 - prices of alcohol above MUP: price as indicator of quality
 - range of alcohol offered
 - low quality alcohol less competitive
 - price of non-alcohol products

Quantity discount ban

- Implemented in Scotland (off-trade) in October 2011
 - evidence suggests limited initial impact (Curnock et al, 2012)
- Under consultation in England and Wales
- Policy would affect:
 - quantity-based special offers (BOGOF, 3F2, 5% off 6 bottles, etc.)
 - bulk discounting of a given container size (single 500ml can for £1, 24-pack for £20)
 - assuming the smaller size is available ...
- Policy would *not* affect:
 - price-based special offers (50% off)
 - temporary extra free offers (50% extra free)
 - bulk discounting across container sizes (2 litre bottle costs less than twice a 1 litre bottle)

Economic rationale for quantity discount ban?

- ‘Problem’ drinkers may use deals or multipacks more often
 - regular heavy drinkers / addicts, bingers, underage drinkers
 - would require policy to raise alcohol prices for large quantities
- People may ‘overpurchase’ if tempted by low bulk prices
 - divorce of purchase from consumption in off-trade
 - consume more rapidly from stocks of alcohol than intended
 - value in commitment mechanism to purchase small quantities
 - higher price for large packs
 - lower price for small packs – allows more divisible purchasing
 - behavioural economics story: temptation, self-control etc.
 - need evidence that this is a problem, and for whom?

Multibuy deals in off-trade alcohol (% units)

By purchase level and alcohol type, 2010 data

	Beer	Cider	Wine	Fabs	Spirits	All
≤ 7 units	25.9	22.8	16.1	23.8	4.5	17.0
≤ 14 units	24.6	18.7	17.1	23.6	4.4	16.1
≤ 21 units	23.4	17.9	16.2	18.7	3.5	14.5
≤ 35 units	21.9	17.5	16.3	19.1	3.3	13.7
> 35 units	17.7	22.1	14.4	14.5	2.3	11.5
All	23.4	20.2	16.0	22.0	3.5	14.6

Source: Calculated from Kantar Worldpanel

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Multipacks in off-trade alcohol

Average 'items per pack', by purchase level and alcohol type, 2010 data

	Beer	Cider	Wine	Fabs	Spirits
≤ 7 units	6.1	2.5	1.0	1.9	1.0
≤ 14 units	6.8	2.8	1.0	1.7	1.0
≤ 21 units	6.9	2.9	1.0	1.8	1.0
≤ 35 units	7.2	2.8	1.0	1.7	1.0
> 35 units	6.2	2.5	1.0	1.6	1.0
All	6.5	2.7	1.0	1.8	1.0

Source: Calculated from Kantar Worldpanel

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Typical 'item size' in off-trade alcohol

Avg. bottle/can size (mls), by purchase level and alcohol type, 2010 data

	Beer	Cider	Wine	Fabs	Spirits
≤ 7 units	437	831	746	458	719
≤ 14 units	443	1,077	788	495	762
≤ 21 units	452	1,171	825	427	768
≤ 35 units	449	1,409	874	457	795
> 35 units	455	1,513	1,000	457	853
All	445	1,126	828	460	778

Source: Calculated from Kantar Worldpanel

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Quantity discount ban: key points

- Quantity-based offers most common in beer, cider and fabs
 - no evidence that heavy drinkers use multibuy deals more often
- Heavy drinkers do not seem to buy larger multipacks
- Heavy drinkers buy larger containers
 - policy has no effect on this aspect of bulk discounting
- Producer response could be key: policy need not raise prices
 - increase use of price discounts (£3.33 per bottle, not 3 for £10)
 - reduce price of small packages
 - allows people to enjoy lower unit price at lower quantity – could be beneficial
 - remove small packages from sale – if big packs generate profits
 - limit ability to obtain small quantities – could be harmful

Conclusions

- MUP would be relatively well-targeted on heavy drinkers
 - though would also have significant impact on moderate consumers
 - impact on other problem consumers (e.g. bingers) unclear
- Quantity discount bans poorly-targeted
- Both policies likely to generate significant supply-side responses
 - future research and evaluation should cover both sides of market
- MUP will transfer significant sums to supply side
 - seems preferable to raise price/revenue through tax system
- Current structure of excise taxes is sub-optimal
 - very low rates on cider, high strength units attract lower rates
 - reform by type and strength (not just raise rates)
 - could more effectively target problem drinkers
 - couple with below-cost ban to introduce 'minimum price' in tax system