Public Health Research Consortium

Scoping and feasibility study to develop and apply a methodology for retrospective adjustment of alcohol consumption data

Final Report

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Part 1: Mapping of key changes in alcohol strength, standard measures, glass size and shape, 1990-2012

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Part 2: Adjustment factors: development and application to survey data, 1990-2005

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Executive Summary

Background

Harmful alcohol use is a serious public health issue (BMA 2008, Robinson & Lader 2009). To inform policy development in this area, an accurate understanding is needed of changes in real levels of alcohol consumption at population level over time. Changes in glass size and alcohol strength have complicated this understanding. For example, there has been a trend over the past 20-30 years towards larger measures, particularly of wine, being served in licensed premises, and towards stronger ABV (alcohol by volume) for certain categories of drink, such as lager, beer, cider and wine (NHS Information Centre 2010). Changes in glass shape (Attwood et al 2012) over recent years may also affect consumption estimates. These changes have made it difficult meaningfully to compare self-report consumption data over the same period, as the underlying assumptions and understanding regarding a standard drink or serving have not been consistent. Consistency is important, because assessing the effectiveness of population policy measures is only possible if data from different survey years are genuinely comparable. There is a need for new research to develop and apply a robust methodology for retrospective adjustment of official trend data on alcohol consumption, to take account of changes in glass size and shape and alcohol strength over time.

Aims and methods

A scoping and feasibility study was commissioned by the Department of Health through the Public Health Research Consortium (http://phrc.lshtm.ac.uk/) to research, develop and apply a methodology that allows for retrospective adjustment of alcohol consumption trend data in England, to take account of changes over time in glass sizes and shape and alcohol strength.

The objectives of the study were to:

a) Review available research and other evidence to map key changes in alcohol strength, standard measures, glass size and shape since 1990;

b) Interview key stakeholders to establish relevant assumptions and to inform the mapping exercise;

c) Develop a robust formula / formulae for use in retrospective adjustment of official data;

d) Apply the formula /formulae to official data on a selective basis; and

e) Report the results and discuss implications for a full-scale study.

Part 1 of the report describes the methods and findings from the mapping element of the study (objectives a and b), while Part 2 describes the development of the methodology for retrospective adjustments of existing survey data, and their implications for estimates at two data points, 1995 and 2000, and further considers the implications for a full-scale study (objectives c to e).

Findings

This report has identified key changes in alcohol strength, standard measures, glass size and shape since 1990, focusing primarily on changes relating to beer, wine and cider. It has then used this evidence to estimate the actual alcoholic strength of beer (including shandy and cider) and wine between 1990 and 2005, and – in the case of wine – changes in the average glass size, and to examine the implications for retrospective adjustment of alcohol consumption survey data over the period.

Overview of key changes

Strength

With beer, there has been a trend towards greater variability in strength (both lower and higher) in response to duty changes (eg. reduction for <2.8% ABV beers) and perceived consumer demand (for both stronger and weaker products). Available data suggest that the average strength of beer, for both on- and off- trade combined, has increased fairly steadily by 4% over the period 1994 to 2011, from 4.05 to 4.21% ABV. For the time period 1994 to 2005, the average strength increased by 3%, from 4.05 to 4.17% ABV, with a peak strength of 4.22% ABV in 2004. Average strength has remained fairly steady between 2004 and 2011, fluctuating between 4.17% and 4.22%.

For wine, there has been an overall trend towards increasing strength from 1997 to 2007, attributed to the growing popularity and market share of stronger New World wines over weaker European wines. Since 2007, new lower strength wines have been developed, in response both to perceived consumer demand and duty rates favouring lower % ABV. Between 1990 and 2005, the average strength of wine increased by 12%, from 11.15 to 12.48% ABV. Over the whole period, there was a 13% increase from 11.15 to 12.58% ABV, with the average strength of wine plateauing at 12.58% ABV from 2007 onwards.

The cider category is very varied, with a broad range of strengths amongst its most popular brands. Data are limited, but overall a mixed picture emerges over the time period, with some products reduced in strength, sometimes in response to duty changes, and other stronger products launched in the 1990s.

Measure sizes

In 1995, permitted measure sizes for wine served by the glass in licensed premises changed to 125ml, 175ml, and multiples thereof, and metric measure sizes of 25ml and 35ml were introduced for spirits served in licensed premises, with an additional measure size of 70ml introduced in 2001. Beer measure sizes were largely unchanged over the period (1/3 pint, ½ pint and multiples of ½ pint), although a 2/3 pint measure was introduced in 2011. In 2010, legislation was introduced to ensure that the smallest measures for all categories must be available to customers and that customers are made aware of their availability.

Vessel size

The introduction of larger and multiple measures might be expected to have increased the average serving size for spirits and wine. Precise data on sales for particular beverage categories broken down by glass size could not be obtained. However, information from the trade press and market research reports suggest a trend for licensed premises to offer larger servings of wine by the glass from the mid-1990s onwards. Other trends in glass size include the increasing popularity of double spirit measures, large glasses for cocktails, and the increasing use of beer and cocktail pitchers.

The data on changes in vessel size and type for home consumption over the time period are limited and describe a trend for larger bottles of beer sold for home consumption. Available market research data for glassware sold for use in the home are not broken down by shape or size of glasses.

Application to survey data

These estimates have been used to calculate conversion factors that can applied to survey data, specifically to the General Household Survey, the source of National Statistics about alcohol consumption in England during this time. In the case of wine, and of beer until 1997, these are presented as a single multiplier of the original estimates, given that the latter calculated a pint of beer or a glass of wine as equivalent to one unit of alcohol. The revised estimates of the alcohol content of beer from 1998 onwards are based on the 2006 ONS revised methodology currently used to calculate alcohol consumption, and are consequently more complex, including different assumptions of alcohol strength depending on the type of beer drunk, and also incorporating calculations of bottle size where applicable based on brand. Unlike the ONS original and revised methodologies, the conversion factors used for beer and wine are rounded to the nearest decimal place.

The main outcomes of the revised calculations are:

- higher estimates of alcohol consumption from 1990;
- estimates of alcohol consumption in the form of beer, cider and shandy that exceed the original estimates by between 11% and 23%;
- estimates of alcohol consumption in the form of wine that exceed the original estimates by 40% in 1990, increasing to an additional 110% in 2005;
- estimates of average weekly consumption of all drinks exceeding the original estimates by 13% in 1990, increasing to an additional 40% in 2005.
- a greater impact on women than men.

Recommendations

This report has focused on mean alcohol consumption in an average week with a limited exploration of the impact of the revised method on the proportions of adults drinking above the thresholds of 21 units for men and 14 units for women. It can be extended to assess the prevalence of drinking at different levels among different population groups, particularly more risky drinking (50 units for men, 35 units for women).

In using survey data to measure and assess the trends in alcohol consumption, there is a tension between consistency over time and reflecting a changing world. This is a feasibility study, and there is a need to define the ways in which these revisions should be used, given that they present a picture of alcohol consumption that is at variance with published national statistics.

It has also been a retrospective exercise and is dependent on the survey data that has already been collected. However, it raises questions about how alcohol consumption should be calculated from survey data in future. This would involve several changes in approach:

a) The Department of Health should consider a programme of accessing market data to provide detailed and specific evidence on changes in alcohol strength, glass size and other aspects of glassware over time, and on the breakdown of alcohol sales by these variables. This may involve buying data from market intelligence agencies such as Mintel. In addition, there is scope for collaboration with the British Beer and Pub Association, who currently gather a considerable body of data about the alcohol market. This study has relied on the BBPA's estimates of the average ABV of beer and wine, and it would be useful if similar analyses could be commissioned in future, using a methodology that was both reliable and transparent.

b) Estimates of alcohol consumption based on large-scale government-sponsored surveys are well-established. The methodology used to convert drinks into units of alcohol has been reviewed once, in 2006. There needs to be critical consideration of how often such a review should take place, bearing in mind the tensions between accuracy and comparability over time.

c) Similarly the methodology and questions used to measure alcohol consumption on government surveys should be reviewed to ensure that they reflect the current drinks market as understood by consumers. This includes consideration of different methodologies (e.g. yesterday recall, diaries), and additional information (e.g. whether alcohol was consumed on licensed premises or elsewhere) that could improve data quality. However, this review also needs to take into account respondent burden, backward comparability and available resources.

d) There is a scarcity of evidence about the size of home-poured drinks, particularly wine and spirits. Any review of survey methodology should take this into account, if necessary by commissioning new research.

e) This review did not consider drinks other than beer and wine, due to a lack of evidence. It may be possible in future to extend a similar review to spirits and alcopops (RTDs).

This methodology could now be applied and tested in other existing data sets. The General Household Survey measures of weekly drinking were used in this report because they were collected systematically between 1990 and 2005. Other surveys may measure different things (for example daily consumption based on the highest drinking day in the past seven days). The applicability of the methodology may also need to be adapted where types and sizes of drinks are defined differently.

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1 Mapping of key changes in alcohol strength, standard measures, glass size and shape, 1990-2012

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1.1 Introduction

1.1.1 Background

Harmful alcohol use is a serious public health issue (BMA 2008, Robinson & Lader 2009). To inform policy development in this area, an accurate understanding is needed of changes in real levels of alcohol consumption at population level over time. Changes in glass size and alcohol strength have complicated this understanding. For example, there has been a trend over the past 20-30 years towards larger measures, particularly of wine, being served in licensed premises, and towards stronger ABV (alcohol by volume) for certain categories of drink, such as lager, beer, cider and wine (NHS Information Centre 2010). Changes in glass shape (Attwood et al 2012) over recent years may also affect consumption estimates. These changes have made it difficult meaningfully to compare self-report consumption data over the same period, as the underlying assumptions and understanding regarding a standard drink or serving have not been consistent. Consistency is important, because assessing the effectiveness of population policy measures is only possible if data from different survey years are genuinely comparable. There is a need for new research to develop and apply a robust methodology for retrospective adjustment of official trend data on alcohol consumption, to take account of changes in glass size and shape and alcohol strength over time.

1.1.2 Aims of the Research

A scoping and feasibility study was commissioned by the Department of Health through the Public Health Research Consortium to research, develop and apply a methodology that allows for retrospective adjustment of alcohol consumption trend data in England, to take account of changes over time in glass sizes and shape and alcohol strength.

The objectives of the study were to:

a) Review available research and other evidence to map key changes in alcohol strength, standard measures, glass size and shape since 1990;

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1.1.3 Methodology

The mapping element of the study, reported here, sought to identify and map key changes in glass size, shape and drink strength (percentage of alcohol by volume) since 1990. Evidence was sought regarding: what changes occurred, the date on or period over which they took place, the basis of these changes (for example, whether they were in response to legislation or market-led changes in response to perceived consumer demand), and any other relevant information concerning, for example, supporting actions or promotion of the changes. Although we recognise that spirits contribute to total alcohol consumption in the UK, we focused primarily on changes relating to beer, wine and cider, as these account for a large share of alcohol consumption across the population and are of most interest to policymakers and researchers seeking to compare alcohol consumption data across different time periods.

Two methods were used, desk based research and interviews with key stakeholders. Desk-based research involved searching a range of sources and databases (see Appendix 1 for full details of the search strategy). Sources and databases were searched both electronically and, where relevant, by hand. Three market research organisations were contacted to enquire about alcohol sales data held.

Interviews were conducted with key informants in the alcohol policy field and in the hospitality sector. Originally, 20 organisations, including organisations such as Alcohol Concern, Alcohol Focus Scotland, the Wines and Spirits Association, the British Beer and Pub Association and the Portman Group, were contacted requesting a telephone interview. Twenty-five per cent opted out of participating, 40% did not respond or did not set an interview date and 35% agreed to participate (n=7). These participating organisations included representatives from within the public health arena and from the alcohol industry. Five of the participating interviewees were from the public health and policy fields and two from the hospitality sector. In addition, several retailers were contacted with requests for information regarding the sale of wine glasses but did not respond.

1.1.4 Structure of Part 1

Findings are presented in three sections. In Section 1.2 we describe the data sources drawn on in the desk research to map key changes over the period. In Section 1.3, we report changes in alcohol strength, and in Section 1.4, changes in standard measures, glass size and shape. We report on both statutory changes, such as changes in the legally permitted serving measures in licensed premises, and industry-led changes, such as the introduction of products of different strengths to appeal to different segments of the market.

1.2 Data sources drawn on

We draw on several different data sources in the mapping of key changes in alcohol strength, standard measures, glass size and shape. These are:

- Legislation
- HM Revenue & Customs data on duty
- Alcohol manufacturers' and retailers' data
- Market research data
- Trade and hospitality press

1.2.1 Legislation

Legislative documents such as UK Acts of Parliament and EC Directives are drawn on for legal definitions of different categories of beverage. These are relevant in that for some beverage categories they stipulate minimum or maximum levels of % ABV (percentage of alcohol by volume). UK Acts of Parliament also determine the measures that can legally be served on licenced premises for certain categories of alcoholic beverage. This legislation is relevant as it helps to put on-trade consumption data into context and to identify changes in measure sizes over the time period.

1.2.2 HM Revenue & Customs data on duty

HM Revenue & Customs (HMRC) rates of duty on alcohol data are drawn on to show how duty levels have changed over the period for different categories of alcoholic beverage. These are relevant in that they may have acted as an incentive or disincentive to the production of different strength products. In addition, data from the HMRC Trade Statistics unit, published as bulletins (see https://www.uktradeinfo.com), informed the BBPA's strength of wine and beer data (see below). A review of changes in the strength of wine imported to the UK over ten years was published in 2008 by the HMRC Knowledge, Analysis & Intelligence unit (Ambler 2008), and is also used as a source for this report.

1.2.3 Alcohol manufacturers' and retailers' data

Several different types of alcohol industry data are drawn on in the report. A key source of statistics is the British Beer and Pub Association (BBPA), which represents Britain's brewing and pub sector. The BBPA states that 96% of the beer brewed in Britain is brewed by BBPA members, and more than half of British pubs are owned by BBPA members (BBPA, 2012a). The BBPA produces an annual Statistical Handbook in which it publishes market and other data relevant to the British brewing and pub industries (BBPA, 2012b). Most of the tables in the Handbook provide historical data, with some going back as far as 100 years. The BBPA draws some of the data presented in the Handbook from HM Revenue & Customs, the Office of National Statistics, the Home Office and different trade associations, and also produces its own statistical data. The complete methodology behind the BBPA's own statistical data is not disclosed in the Handbook, but a representative from the BBPA reported that data are derived from information provided by BBPA member breweries, representing about 90% beer sold in the UK, with the rest completed from HMRC small brewers and import data (BBPA 2012, personal communication). Other types of alcohol industry data used in our review include producers' guidelines and definitions of different beverage categories as reported by their trade associations.

1.2.4 Market research data

Market research data are drawn on in the report for information on alcohol sales data broken down by % ABV level. A variety of market research data on alcohol sales can be purchased from a number of commercial organisations such as Nielsen, Mintel and Euromonitor. For example, Nielsen collects data on the volume and price of alcohol sold both on- and off-trade in the UK, and on the proportion of sales by sector (on- and off-trade) for various categories of alcoholic drinks. More detailed information on the types of data held by these companies and the costs involved in purchasing reports is provided in Appendix 2.

Nielsen, Mintel and Euromonitor were contacted via the 'contact us' sections of their websites in September 2012 in order to obtain more information about the data they hold, and specifically to find out if they hold UK on- and off-trade alcohol sales data broken down by % ABV from 1990 to present. Telephone responses were received from representatives of each organisation. The representative from Nielsen responded that although they may hold some relevant data, they retain data for a period of 3 years only, and would therefore not be able to provide data from earlier than 2009. Nielsen's representative also stated that other market research companies retain data for a similar length of time. NHS Health Scotland has published some of Nielsen's alcohol sales data for the period 1994-2011 (see Appendix 2 for full details). Mintel's representative responded that they did not hold the data requested. The representative from Euromonitor directed the researchers to the organisation's online database (Passport GMID), which had already been searched thoroughly by the research team, and did not have relevant data.

A further source of market research data is the reports produced by the Key Note marketing intelligence company. The market research reports are compiled with data from trade sources, online searches, interviews and field research plus secondary data sources for consumer information, advertising expenditure and background data.

1.2.5 Trade and hospitality press

Finally, the report draws on information from trade and hospitality periodicals such as *The Publican's Morning Advertiser*, *Harpers Wine & Spirit Trades Review*, *Off Licence News* and *Caterer and Hotelkeeper*. These are drawn on in the report because they contain information on general trends in the UK's on-trade and off-trade, and examples of specific changes and innovations such as the introduction of new products and changes to legislation relevant to the alcohol and hospitality industries. The information provides useful context for the other data in the report, and where precise data are lacking on a particular question, can provide an indication of trends as perceived within the industry.

1.3 Changes in alcohol strength

Alcohol consumption surveys make assumptions about the alcohol content of different drinks in order to convert self-reports of drinks consumed into equivalent units. However, over the period 1990 to 2012, there have been changes in the alcohol content of different drinks. Some drinks categories have tended to become stronger, while others have seen a growth in both higher and lower strength products.

Two factors determine alcohol content:

- legal definitions of different types of alcohol beverage, which stipulate a minimum level of alcohol content, and
- manufacturer decisions regarding alcohol content. These can be influenced by duty levels (which might make it more or less profitable to produce drinks with a particular % ABV) and by perceived public demand for higher or lower strength products.

The section begins with a definition of ABV (1.3.1), then considers industry-led changes (1.3.2) over the period 1990 to 2012, and market data on the proportion of sales for specific alcoholic beverage categories broken down by ABV level (1.3.3).

1.3.1 Definition of % ABV

The alcohol in alcoholic beverages is ethyl alcohol (ethanol, C_2H_5OH); pure ethyl alcohol is also known as absolute alcohol (Bender 2009). The strength of alcoholic beverages is most often shown as the percentage of alcohol by volume: the number of millilitres of ethyl alcohol present in each 100 ml of an alcoholic beverage when measured at 20°C (% ABV) (Collins 2011).

There are legal definitions for certain types of alcoholic beverage, which include a stipulated level of alcohol content. Definitions are also applied in relation to duty levels and in some cases by the industry itself. The UK-applicable definitions of ABV which have been in place for different categories of beverage over the period 1990-2012 are summarised in Table 1.1 below.

Table 1.1 UK-applicable legal definitions of ABV level for different categories of beverage, 1990-2012

Category	UK-Applicable Legal Definitions of ABV Level	Basis of definition:		
		legal	duty	industry
Beer	No legal definition identified for % ABV for Beer	n/a		
	Minimum % ABV to register for UK duty = 1.2% ABV[1]		✓	
	No maximum % ABV to register for UK duty		n/a	
Cider	No legal definition identified for % ABV for Cider	n/a		
	Minimum % ABV to register for UK duty = 1.2% ABV[1]		✓	
	Maximum % ABV to register for UK duty < 8.5% ABV[1]		✓	
	Maximum % ABV for low-alcohol Cider < 1.2% ABV[2]			✓
Spirits	Legal definition of minimum % ABV for Spirits category as a whole = 15% ABV [3]	✓		
	Legal definition of minimum % ABV for Whisky, Whiskey = 40% ABV [3,4]	✓		
	Legal definition of minimum % ABV for Rum, Gin, Distilled gin, Vodka = 37.5% ABV [3]	✓		
	Legal definition of minimum % ABV for Brandy = 36% ABV [3]	✓		
	No legal definition identified for maximum % ABV for Spirits	n/a		
	Minimum % ABV to register for UK duty = 1.2% ABV[1]		✓	
	No maximum % ABV to register for UK duty		n/a	
Table Wine	Legal definition of minimum % ABV for Table Wine = 8.5% ABV (or 9% vol depending on vine-growing region)[5]	✓		
	Legal definition of maximum % ABV for Table Wine = 15% ABV (or 20% vol depending on vine-growing region)[5]	✓		
	Minimum % ABV to register for UK duty = 1.2% ABV[1]		✓	
	No maximum % ABV to register for UK duty		n/a	

Sources:

1. Alcoholic Liquor Duties Act 1979 (1979 c. 4); HM Revenue & Customs (2012). Alcohol duties. Wine Duty, Cider Duty, Beer Duty or Spirits Duty responsibilities for alcohol manufacturers, distributers and retailers. Online: https://www.gov.uk/specialist/alcohol-duties
2.National Association of Cider Makers (2010). Styles of Cider. Online: http://www.cideruk.com/cider_making/styles_of_cider
3. Council Regulation (EEC) No 1576/89 of 29 May 1989 laying down general rules on the definition, description and presentation of spirit drinks. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1989R1576:20070101:EN:PDF; Regulation (EC) No 110/2008 of the European Parliament and of the Council of 15 January 2008 on the definition, description, presentation, labelling and the protection of geographical indications of spirit drinks and repealing Council Regulation (EEC) No 1576/89 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:039:0016:0054:EN:PDF
4. The Scotch Whisky Act 1988 (1988 c. 22); The Scotch Whisky Regulations 2009 (2009 No. 2890)
5. Council Regulation (EC) No 479/2008 of 29 April 2008 on the common organisation of the market in wine, amending Regulations (EC) No 1493/1999, (EC) No 1782/2003, (EC) No 1290/2005, (EC) No 3/2008 and repealing Regulations (EEC) No 2392/86 and (EC) No 1493/1999 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:148:0001:0061:EN:PDF

The table shows that there is not a legal minimum or maximum ABV level for some categories of alcohol drink, although minimum and maximum levels are specified for some categories in relation to duty. For all categories where minimum and maximum ABV levels are specified, there have been no changes over the period 1990-2012. However, there have been some changes in duty rates for different strength bands within these minimum and maximum parameters, and these are examined in the next section.

Key Points:

- No changes in the minimum ABV level for spirits over the time period (no maximum ABV level exists).
- No changes in the minimum and maximum ABV level for table wine over the time period.
- Minimum and maximum permitted ABV levels do not exist for beer and cider, however to register for UK duty, both beer and cider have a minimum ABV level and cider has a maximum ABV level.

1.3.2 Industry-led changes in ABV level

There have been a number of industry-led changes in the alcohol content of products over the period 1990-2012. These have been influenced by duty levels (which might make it more or less profitable to produce drinks with a particular % ABV) and by perceived public demand for higher or lower strength products.

1.3.2.1 Changes in Duty Levels

Most products containing alcohol are subject to a series of excise duties: spirits duty, wine and made wine duty, beer duty, and cider and perry duty. These duties are collected by HM Revenue and Customs (or by HM Customs and Excise pre-April 2005), and are levied on manufacturers and importers. All alcohol products are also subject to Value-Added Tax (VAT).

Duty levels change regularly, with a particular increase in duty for all products on 1 December 2008 that corresponded to the temporary cut in VAT from 17.5% to 15% for the period 1 December 2008 to 31 December 2009. The effect of these two changes in combination left the overall level of tax on alcohol broadly unchanged during that period. The key other changes in duty levels for beer, cider and wine over the period 1990-2012 are set out below.

Beer

For beer, duty was applied at £ per 1% ABV until October 2011, with a number of relatively small changes and modifications for large versus small producers introduced between 1993 and 2011 as set out in Appendix 3. After that date, high and low strength duty was applied to particular products, with high strength duty adding an additional 25% to the general beer duty and lower strength reducing to 50% of the general beer duty. This change may have provided an incentive for manufactures to invest in a range of lower strength beers that are now available on the market.

Wine

For wine of fresh grape (including wine, still wine and made wine), four levels of duty are applied to wines in four strength categories:

- Over 1.2% to not exceeding 4% ABV
- Over 4% to not exceeding 5.5% ABV
- Over 5.5% to not exceeding 15% ABV
- Over 15% to not exceeding 22% ABV

There are two duty categories for sparkling wine, over 5.5% to not exceeding 8.5% ABV, and over 8.5% to not exceeding 15%, with no duty being charged for sparkling wines below 5.5% ABV. There were gradual and consistent rises in the duty rate for all type of still and sparkling wine between 1995 and 2007, with a sizeable increase in duty of around 15% for all strengths of wine between March 2007 and December 2008, with duty increases after 2009 being more gradual. Within the category covering the majority of wines, above 5.5% and below 15% ABV, the same level of duty is applied uniformly (whether the wine has a 6% or 15% ABV), and this has not changed since 1995. This banding provides no incentive for manufacturers to invest in wines towards the lower end of the 5.5% to 15% ABV category.

Cider

For still ciders and perry, duty is applied to two ABV categories – for products over 1.2% and up to 7.5% ABV and for products over 7.5% and not exceeding 8.5% ABV. For sparkling ciders, duty for strength over 1.2% but not exceeding 5.5% ABV is charged at the same rate as still cider of strength over 1.2% but not exceeding 7.5% ABV. There is a higher duty rate for sparkling cider over 5.5% but not exceeding 8.5% ABV. The two higher bands for still and sparkling products were introduced in October 1996, which may have acted as a disincentive for producers to invest in products over 7.5% ABV for still cider and 5.5% ABV for sparkling ciders.

Other drinks

For spirits, gradual rises took place until 1995 when there was a reduction in duty from £20.60 per litre of alcohol to £18.99. Duty then remained constant at £19.56 per litre for an extended period, between January 1998 to March 2007, making this a more profitable period for spirit manufacturers. After that, gradual annual rises were reintroduced. Ready to drink spirit based products have the same levels of duty applied to them as single spirit products since figures on these drinks became available.

Appendix 3 provides more detailed information on the changes in duty rates for: wine (1995-2012); spirits (1982-2012); beer (1993-2012); and cider (1992-2012).

1.3.2.2 Changes to products

Manufacturers have introduced both higher and lower strength products in different categories in response to these changes in duty levels and to perceived public demand. Information on these changes derives primarily from the trade and hospitality press. Key trends and examples are summarised below for beer, wine and cider, with more detailed information in Appendix 4. It is important to note that, with the exception of the HMRC Report (Ambler, 2008) and Key Note reports, the information presented in this section is from the alcohol industry and hospitality sector trade press, and much of it is based on the viewpoints and beliefs of individuals (sometimes from alcohol industry press releases), rather than on market data.

Beer

A mixed picture emerges from the trade and hospitality press in relation to trends in beer strength. Some articles suggest that stronger beers have become more popular over the period; for example, a 1996 article described an increase in beer strength as a response to consumer demand, noting "the fact that premium lagers now account for a higher share of value sales than any other type of lager"[1]. However an interview in the same article with a manufacturer of 3.4% ABV lager reports on consumer research findings that product strength is "low down as a purchasing decision" amongst its customers. A later article from 2003, reported that the same brand of lager did increase its ABV to 5%[2], as did a couple of other brands of beer[3], notably the launch of the UK strongest beer, at the time, at 12% ABV, increasing its strength to 18.2% ABV in 2009[4].

However, other articles focus on a reduction in % ABV, some via product alterations or new product developments in response to a change in duty rate by strength. Several beer % ABV reductions were introduced around October 2011 to coincide with the Lower Strength Beer Duty rate on beers of 2.8% ABV or below (equivalent to 50% of the general beer duty rate in force at the time of introduction). A number of beer brand extensions of 2.8% ABV or below were launched[5,6,7] or modified to a lower strength[8] around this time. In 2012, two brewers reduced four major brands from 5% to 4.8% ABV in the on-trade[9,10], a move that was described by one article "as a way of reducing duty costs. The brewer would not give reasons for the reduction, but confirmed only beer sold in the UK was affected"[11]. A similar response to a change in duty rates was reported in 1993[12,13]: one brewer reduced the alcohol content in 19 of its 63 brands "in the face of a possible extra tax burden".

Perceived changes in customer taste or consumer feedback are also reported as driving changes in product strength. In 2001, one company's product change was reported as being due to consumer feedback when it reduced the strength an Irish ale from 4.8% to 4.2% ABV but the author points out

[1] Off Licence News (1996) *A coming of age*. May 2nd: 12.
[2] The Publican's Morning Advertiser (2003). *New 5% Heineken is up and* running. February 27th.
[3] The Publican's Morning Advertiser (2003). *Boddingtons gets new identity in sales push*. August 14th.
[4] Harpers (2009). BrewDog slammed for 18.2% ABV beer. July 27th.
[5] Gerrard N (2011). News: The Government has introduced a 35p cut in tax for lower strength beers. *Caterer & Hotelkeeper*, October 7th.
[6] Mercer C (2012). UK: Diageo to launch Guinness Mid-Strength in UK. *just-drinks global news*, January 20th.
[7] Business Wire (2012). Molson Coors Introduces New Summer Brews, May 22nd.
[8] Harvey J (2011). Carlsberg to cut Skol ABV. *The Publican's Morning Advertiser*, October 3rd.
[9] Stodell H (2012). AB InBev lowers abv of Stella, Bud and Beck's. *The Grocer*, January 21st: 32.
[10] Bamford V (2012). Carlsberg expands San Miguel with lower-abv 'sunshine' beer Fresca. *The Grocer,* February 4th: 32.
[11] Stodell H (2012). AB InBev lowers abv of Stella, Bud and Beck's. *The Grocer*, January 21st: 32.
[12] McCarthy G (1993). Weaker Beer Will Save Tax. *Press Association*, June 7th.
[13] Meller P (1993). Holsten rolls out Bier and revamps Pils: Brand Creation. *Marketing*, April 8th.

that this also put it in direct competition with a competitor's 4.1% brand[14]. Conversely, another product, a low alcohol beer was removed from sale in the UK in 2001 due to "lack of interest"[15].

More examples of new lower strength beers being developed or existing brands reduced to 4% or 4.5% ABV appear from the mid-late 2000s[16,17]. One article reports: "By offering a lighter tasting beer with reduced alcohol content, the brewer appears to be attempting to align itself with the increasing health trend. … [while it] does not fit into the low alcohol beers category, its alcohol content has been significantly reduced"[18]. In 2006 and 2008, two on-trade ales were reduced in strength to 4.5% ABV following consumer (licensees' and customers') feedback[19,20]. Trade journalists write about the beer category changing, "In the UK beer market, the term 'premium' has in the past been proportional to the ABV strength, but this perception is changing"[21] a trend that continues with 4% ABV product launches into 2010[22]. In 2011, a trade report in *The Publican's Morning Advertiser* indicated that, "it's clear where the market is heading – people want to drink weaker beers and they are happy to pay more for a premium brand"[23].

Product changes were not necessarily made to the same beers in the on- and off-trade, or in the packaged versus draught format. For example, an ale reduced from 5.2% to 4.5% ABV in 2008 was retained at 5.2% ABV for off-trade sales[24]; and in 2012, a 0.2% ABV reduction was introduced for the bottled format of a beer but the draught format remained at 5%[25]. Conversely, another brewer aligned its 5.1% ABV on-trade bottled beer and 5.2% off-trade bottled beer to 5% across both channels in 2008[26].

Wine

The picture which emerges from the trade and hospitality press regarding wine strength is one of an overall trend towards higher strength combined with the introduction in the last five years of lower strength alternatives.

Trade statistics from HMRC on the imported wine market in the UK between 1997 and 2007 (see Figure 1.1), highlight the falling market share of European wines (from France, Italy, Spain, Germany, Belgium and Portugal) versus a growth in the market shares of wines imported from New World and non-European countries (USA, Australia, Chile, South Africa, New Zealand, Argentina and others), particularly from Australia (Ambler 2008). The effect of this shift has been an increase in the average strength of wine over the period, attributable to the generally higher strength of 'New World' wines, particularly those from Australia, and the generally lower strength of European wines, particularly those from Germany (Ambler 2008). New World wines tend to be higher in strength because "improved vineyard management and vinification techniques enable fruit to ripen more fully, and more frequent heat waves also play a role"[27], with the result that "since 1981, the average ABV of Australian wine has increased from 12.3 to nearly 14%. For California wines, both red and white, it was [sic] gone up from 13.7 to nearly 15% during the same period".

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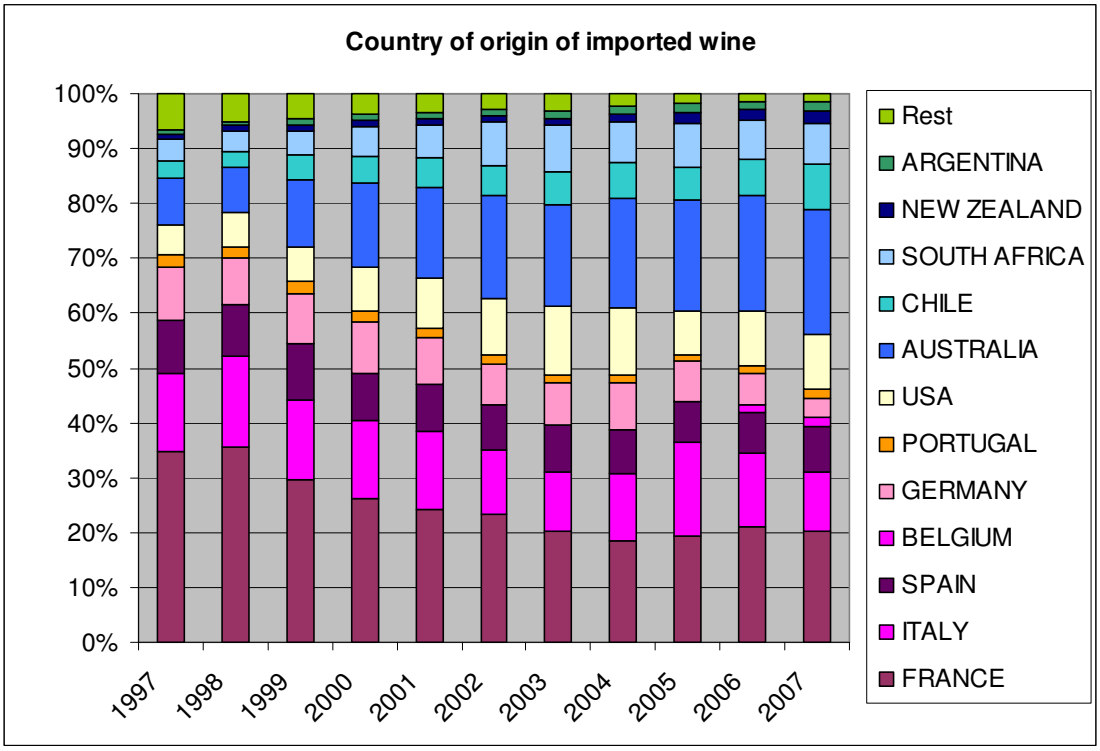
[14] The Publican's Morning Advertiser (2001). Caffrey's goes back to its roots. May 2nd.
[15] Datamonitor CommentWire (2007). Coors: tapping a healthy trend. September 7th.
[16] The Publican's Morning Advertiser (2006). InBev launches new lower-strength Beck's draught lager. February 23rd.
[17] The Grocer (2006). Beer/Lager. July 15th: 47.
[18] Datamonitor CommentWire (2007). Coors: tapping a healthy trend. September 7th.
[19] The Publican's Morning Advertiser (2008). Thompson calls on brewing industry to be positive. January 17th.
[20] The Publican's Morning Advertiser (2006). Greene King to lower ABV of premium ale. August 11th.
[21] just-drinks global news (2008). UK: InBev unveils Stella Artois 4% for UK market. June 26th.
[22] The Grocer (2010). Can Budweiser 66 connect with the iPhone generation? April 24: 12.
[23] Mellows P (2011). The 4% solution. The Publican's Morning Advertiser, July 15th.
[24] Moore D (2008). The Old Speckled 'Un. The Daily News (New Plymouth, New Zealand), August 20th: 10.
[25] Dinkovski N (2012). ABV cuts all round. The Publican's Morning Advertiser, February 13th.
[26] The Publican's Morning Advertiser (2008). Stella relaunches bottle with lower ABV. August 21st.
[27] Rosen M (2006). Too hot to handle? High alcohol wines fire debate. Agence France-Presse [English], October 6th.

Figure 1.1 Country of origin of wine imported to the UK, 1997-2007



Source: Ambler R (2008). *Review of wine strengths used in estimating pure alcohol clearances*. London: Knowledge, Analysis & Intelligence, HM Revenue & Customs; May, p7

A similar picture emerges from Key Note market research reports into the wine market, which draw on overseas trade statistics and other sources to show the changing profile of the UK imported wine market over time in terms of country of origin of wine (Table 1.2 below). More detailed information from the Key Note reports into the UK wine market is presented in Appendix 5.

Table 1.2 UK wine imports by principal country of origin by volume (%), 1996-2007

	1996	2000	2002	2004	2006[e]	2007[†]
Australia	10	16	20	20	21	23
France	32	27	25	21	20	20
USA	4	7	9	12	14	11
Germany	12	9	9	10	9	-
Italy	13	12	10	10	9	11
South Africa	5	6	8	8	8	8
Spain	8	7	7	7	7	7
Chile	3	5	6	7	7	8
Other countries	13	11	6	5	5	12*
Total	100	100	100	100	100	100

[e]: estimates
† KeyNote estimate figures based on figures from January to June
* Germany is included in 'other countries' for 2007
Source: Overseas Trade Statistics, National Statistics, Key Note (In: Key Note. *Wine Market Reports,* 2006 and 2007).

Key Note also provide information, based on adult shoppers' purchasing data, on wines bought by country of origin for the years 2007 to 2011 (Table 1.3; note that the measure changes slightly between 2009 and 2010, from 'wines bought' to 'wine purchased most often'). Again, these illustrate the popularity of Australian and other New World wines over the period, although the decline in the popularity of European wines overall appears to have slowed in recent years.

Table 1.3 Wine purchased in the UK by country (% of adults), 2007-2011

	Wines bought by country (% adults)			Wine purchased most often by country (% adults)	
	2007	2008	2009	2010	2011
Australia	36.6	35.0	34.4	17.4	26.2
France	28.5	28.6	27.1	13.1	19.8
USA†	18.8	19.4	19.5	9.1	15.5
Germany	10.8	9.8	9.2	3.8	6.0
Italy	17.8	19.5	18.3	8.4	15.7
South Africa	19.2	19.8	20.1	8.6	15.7
Spain	14.3	14.3	14.9	6.0	12.3
Chile	16.7	18.0	17.2	7.4	14.8
New Zealand	9.0	9.8	10.7	4.5	10.7
Argentina	5.6	6.6	6.9	1.7	5.1
United Kingdom	-	-	-	2.6	4.5
Portugal	3.4	3.0	3.7	1.3	2.9
Bulgaria	2.5	2.4	2.2	0.5	1.4
Other countries	-	-	-	3.8	5.2

† Prompt 'Californian'
- Data not available
Source: Target Group Index BMRB International Ltd, 2007, 2008, 2009, Kantar Media 2011, 2012 (In: Key Note *Wine. Market Update*. 2012; Key Note *Wine. Market Report Plus*. 2009 & 2011)

Nielsen data in February 2012 also suggest that the trend is reversing somewhat, with the volume of sales of New World wines falling (for example, USA wines down 5%, Australian 9% and South African 17%), and a corresponding rise in the sales of some European wines, for example, Spanish wines up by 11% and Italian by 14%[28].

Information from the wine trade suggests that the strengths of European wines may be increasing as a response to the popularity with consumers of New World wines (Ambler 2008). Wine from some non-European countries showed less of an increase in strength as there was a rise in imports of rosé wines and early harvest wines and non-European countries' other wines tended to be of higher strength already.

Consumer research conducted by the wine industry, reported in the trade press in 2006, suggested that customers regard wines with above 13% ABV as delivering a better "'bang for buck' consideration" and that customers perceive "wines with high alcohol as being more complex and having a better taste" and "generally a sign of wine quality"[29].

Since 2007, there appears to have been a slight trend back in favour of lower strength alternatives. Articles in the retail and hospitality trade press covering changes in wine % ABV after 2007 mainly focus on a reduction of % ABV, either predicting the emergence of low alcohol wines as a future trend[30], or reporting on new products or brand extensions being developed and launched. Examples

[28] Stodell H (2012). Focus on Wine & Champagne: an end to rising abvs and promos? *The Grocer*, April 21st: 51-51, 56.
[29] Harpers (2006). Rising Alcohol Levels- Discuss. August 11th.
[30] The Grocer (2007). *Winemakers fight for growth*. April 28th: 37-38.

include a low alcohol range of "premium wine-based fizzes, spritzers and coolers" of 5.5% ABV[31] launched in 2008; in 2011, a 10.5% ABV red wine claimed to be "the first red variety from a major wine brand designed to be served cold and not at room temperature"[32]; also in 2011, a re-launched range of wines (that included a 7.5% ABV red wine) fermented and bottled in Britain from imported grape juice[33], a category that has, in 2012, "sales up 72% and volumes 51% [Nielsen 52 w/e 4 February 2012]" [34]. Off-Licence News reported in 2010 that "the section of the lower-alcohol wine market which is gaining real momentum is wine above 5.5% ABV, but below the 13% ABV bracket, which has become the norm"[35].

An in-depth article focussing on the UK's off-trade wine and champagne market in 2012, states that low-alcohol wine's "lower duty liability – and the fact that it caters to the government's responsible drinking agenda – have made lower-ABV wine increasingly appealing to manufacturers", and describes a number of new launches of 5.5% ABV wine products over the previous year[36]. One author attributed some of the change to the growth of rosé wine's market share in the UK, which "has helped convince the trade there is now consumer acceptance for lighter, fruitier wines, which can be lower in alcohol"[37]. His alternative explanation was that "duty rates deter discounting to favour low-alcohol: all wines between 5.5% (8.5% for sparkling wine) and 15% indiscriminately attract a higher level of duty than those below".

Cider

As with beer, a mixed picture emerges from the trade and hospitality press and from market research data regarding changes in cider strength over the period 1990-2012. Some articles in the trade and hospitality press describe manufacturers making reductions in % ABV. In 1996, following the 50% increase in Excise Duty on ciders between 7.6% and 8.4% ABV on the 1st October, one cider manufacturer was reported to be reducing the strength of two of its brands to 7.5% ABV and offering a third brand in two strengths, at 7.5% ABV and at its existing strength of 8.4% ABV but rebranded[38]. Over a decade later, the few articles identified in the retail and hospitality trade press covering changes in strength also focus on a reduction of % ABV. These include the launch in the off-trade of a brand extension of a mid-strength cider to one containing half its alcohol content in 2008[39]. Later, in 2009, a manufacturer announced the reduction of a white cider brand from 7.5% to 5.5% ABV (but without a budget to promote the change)[40] although its production ceased later that year "despite sound profits"[41].

Examining the Key Note series of market research reports ("Premium Lagers, Beers & Ciders"), higher strength products were also launched during the project's time-period. Key Note state that "the cider market became much more complex during the 1990s, due mainly to the large number of products

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[31] just-drinks global news (2008). *ZGM launches in low alcohol category*. May 29th.
[32] Julyan AM (2011). Time could be right for UK to drink red wine from the fridge. *The Grocer*, March 12th: 28.
[33] The Grocer (2011). *Halewood taps into budget wine growth*. September 24th: 34.
[34] Stodell H (2012). Focus on Wine & Champagne: an end to rising abvs and promos? *The Grocer*, April 21st: 51-51, 56.
[35] Collenette N (2010). How low can you go? Health concerns are leading the trend towards low-alcohol wine. *Off Licence News*, January 8th: 23.
[36] Stodell H (2012). Focus on Wine & Champagne: an end to rising abvs and promos? *The Grocer*, April 21st: 51-51, 56.
[37] Kirby T (2009). How low can you go? Sales of reduced-alcohol wines are rising fast, in a backlash against powerful New World labels. But do they pass the taste test? *Independent Extra*, November 12th: 8.
[38] London Stock Exchange Aggregated Regulatory News Service (ARNS) (1996). *Merrydown PLC Chairmans' A.G.M. Statement.* September 23rd.
[39] Harpers (2008). Magners launches low alcohol variant. August 18th.
[40] Brownsell A (2009). Down and out? *Marketing*, March 25th: 13.
[41] Harpers (2011). Heineken: learning from beer and cider category. August 12th.

which were introduced, with a variety of ABV strengths, and, hence, price"[42] and that "the early 1990s brought a period of intense marketing by the UK's leading cider makers … these companies launched a series of 'white' ciders – bland or 'clean' in taste but with a high ABV – … [and] were adopted by young drinkers."[43] It is noted that within the cider category, the leading brands cover a wider range of % ABV content than within the lagers and beers categories[44]. Later, in 2007, Key Note's analysis states that "the cider boom of 2005 to 2007 has centred on ciders made to the session strength of 4.5% to 5% ABV, not on premium [defined as over 5% ABV] ciders. However, it was also noted that over-ice cider brands … are marketed on a premium platform, even though their alcohol content is modest"[45].

Key Points:

- Changes in duty levels over the period 1990-2012 have acted as an incentive for manufacturers to introduce some new lower strength products or to reduce the % ABV of existing products below specific duty thresholds.
- Beer: Since 2011, high and low strength duty has been applied to particular beer products, with high strength duty adding an additional 25% to the general beer duty and lower strength reducing to 50% of the general beer duty. This change may have provided an incentive for manufactures to invest in a range of lower strength beers that are now available on the market.
- In terms of changes to beer products, there has been a mixed picture over the period, with a trend towards greater variability in strength (both lower and higher) in response to duty changes (eg. reduction for <2.8% ABV beers) and perceived consumer demand (for both stronger and weaker products).
- Wine: within the duty category covering the majority of wines, above 5.5% and below 15% ABV, the same level of duty is applied uniformly (whether the wine has a 6% or 15% ABV), and this has not changed since 1995. This banding provides no incentive for manufacturers to invest in wines towards the lower end of the 5.5% to 15% ABV category.
- In terms of changes to wine product strength, there has been an overall trend towards increasing strength from 1997 to 2007, attributed to the growing popularity and market share of stronger New World wines over weaker European wines. Since 2007, some new lower strength wines have been developed, in response both to perceived consumer demand and duty rates favouring wines not exceeding 5.5% ABV.
- Cider: two higher duty bands for still and sparkling products were introduced in October 1996, which may have acted as a disincentive for producers to invest in products over 7.5% ABV for still cider and 5.5% ABV for sparkling ciders.
- In terms of product strength, the cider category contains the broadest range of strengths amongst its most popular brands compared with the beer and wine categories. Data are limited, but overall a mixed picture over the time period, with some products reduced in strength, sometimes in response to duty changes, and other stronger products launched in the 1990s.

[42] Key Note (2000). Premium Lagers, Beers & Ciders: p.3.
[43] Key Note (2002). Premium Lagers, Beers & Ciders: p.8.
[44] Key Note (2004). Premium Lagers, Beers & Ciders: p.5.
[45] Key Note (2007). Premium Lagers, Beers & Ciders: p.55.

1.3.3 Market data broken down by ABV level

While the information in the previous section suggests general trends in strength as measured by % ABV, more precise data are needed for the calculation of conversion formulae. For alcohol beverage categories where products are manufactured with different ABV levels, market data can provide an indication of what proportion of sales in any given year was accounted for by products with different % ABVs. This can help calculate an average % ABV for the product category in a given year. In this section we discuss available market data for three key beverage categories: beer, wine and cider.

1.3.3.1 Beer (including ale, lager and stout)

For beer, we draw on two main sources of information: the British Beer and Pub Association (BBPA) (on-trade), and Nielsen data published by NHS Health Scotland (off-trade). However, the BBPA and Nielsen categorise beer differently by ABV levels, which means that the on- and off-trade sales data are not directly comparable, and the Nielsen off-trade sales data are only available for the period 2009-2011. In addition, data on the average strength of beer (on- and off-trade) for the period 1994-2011 were obtained from BBPA in the stakeholder interviews.

Some of the available market data on UK beer consumption is for the on-trade only, and some for the off-trade only. Where data are only available for one sector, it is useful to look at BBPA data on the proportion of overall beer sales accounted for by on- and off-trade respectively over the period. See, for example, Table 1.4, which shows that while the majority of beer bought for consumption was in on-trade premises in 1990, the trend has been towards convergence, with sales now being divided almost equally between the two (see Section 1.2.3 for further information on the BBPA's statistical data).

Table 1.4 Percentage of total UK beer sales by on- and off-trade channels

Year	On-trade %	Off-trade %	Year	On-trade %	Off-trade %
1990	79.6	20.4	**2001**	65.7	34.3
1991	79.0	21.0	**2002**	63.6	36.4
1992	77.7	22.3	**2003**	61.7	38.3
1993	76.9	23.1	**2004**	60.4	39.6
1994	74.0	26.0	**2005**	59.4	40.6
1995	72.3	27.7	**2006**	57.9	42.1
1996	72.4	27.6	**2007**	56.5	43.5
1997	71.5	28.5	**2008**	54.2	45.8
1998	70.6	29.4	**2009**	53.8	46.2
1999	68.4	31.6	**2010**	51.7	48.3
2000	67.6	32.4	**2011**	51.8	48.2

On-trade sales include pubs, hotels, wine-bars, restaurants and clubs and off-trade sales include off-licences, grocers, supermarkets and all other shops.
Data source: BBPA (2012b). *Statistical Handbook 2012*.

Table 1.5 UK beer market by type and strength: percentage of UK on-trade sales																						
Draught (% = % abv)/Year	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Dark Mild	4.1	4.0	3.7	3.4	3.1	2.8	2.6	2.3	2.0	1.9	1.7	1.5	1.4	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5
Bitter I. 1.3-3.3% & Bitter II. 3.4-4.1%	25.8	25.8	26.9	26.3	25.6	23.8	22.8	21.7	21.2	20.1	19.6	18.3	17.1	15.9	15.0	14.2	13.3	12.9	12.3	12.2	11.4	11.3
Bitter III. & Stout																						
Bitter III. 4.2% and over & Stout (categories combined **1990-97**)	8.9	9.4	8.4	8.9	9.1	9.6	9.8	9.5														
Bitter III. 4.2% and over (single category **1998-2011**)									4.5	3.9	3.6	3.3	3.2	3.0	2.9	2.9	2.8	3.0	3.0	3.2	3.2	3.1
Stout (single category **1998-2011**)									4.3	4.3	4.4	4.3	4.2	3.9	3.8	3.8	3.7	3.7	3.7	3.6	3.4	3.3
Lager I. 1.3-3.3% & Lager II. 3.4-4.1%/4.2%*	27.2	25.8	25.2	24.0	23.7	23.6	23.7	24.2	24.6	24.8	24.9	24.6	24.4	24.7	24.9	25.2	25.3	24.8	23.7	23.7	23.1	22.9
Lager III. 4.3% and over	5.3	5.4	5.2	5.8	5.9	6.0	6.7	7.4	7.8	7.7	8.2	8.4	8.3	8.5	8.3	8.2	7.8	7.3	6.8	6.6	6.5	6.6
Lager: No and low alcohol	0.4	0.3	0.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Draught	**71.6**	**70.7**	**69.4**	**68.5**	**67.2**	**65.8**	**65.6**	**65.1**	**64.4**	**62.7**	**62.3**	**60.6**	**58.6**	**57.1**	**56.0**	**55.2**	**53.7**	**52.4**	**50.2**	**49.9**	**48.0**	**47.7**
Packaged (% = % abv)/Year	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Bitter I. 1.3-3.3% & Bitter II. 3.4-4.1%	5.5	5.6	5.5	5.5	5.4	5.4	4.9	4.3	4.1	4.1	3.9	3.7	3.4	3.3	3.2	3.1	3.0	3.2	3.2	3.2	3.0	2.9
Bitter III. 4.2%-7.5%	2.4	2.4	2.6	2.6	2.3	2.5	2.8	2.7	2.5	2.4	2.2	2.3	2.3	2.3	2.2	2.3	2.4	2.4	2.6	2.8	3.0	3.1
Bitter IV. 7.6% and over	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Stout	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.3	1.3	1.4	1.4	1.3	1.4	1.4	1.3	1.4	1.4	1.4	1.5	1.6	1.5
Lager I. 1.3-3.3% & Lager II. 3.4-4.1%/4.2%*	9.9	10.2	10.6	11.2	11.6	11.6	11.8	12.5	12.2	13.3	13.3	13.8	14.3	14.9	15.6	16.6	17.5	18.8	19.8	19.6	20.1	19.6
Lager III. & Lager IV																						
Lager III. 4.3%-7.5% & Lager IV. 7.6% and over (categories combined **1990-91**)	7.9	8.7																				
Lager III. 4.3%-7.5% (single category **1992-2011**)			7.8	8.4	9.3	10.8	11.4	12.1	13.5	14.4	15.3	16.7	18.6	19.5	20.0	20.1	20.8	20.5	21.7	21.9	23.3	24.0
Lager IV. 7.6% and over (single category **1992-2011**)			1.9	2.0	2.1	2.0	1.8	1.7	1.6	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.1	1.0	1.0	0.7	0.8	0.8
Lager & Beer: No and low alcohol	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total packaged	**28.4**	**29.3**	**30.6**	**31.5**	**32.8**	**34.2**	**34.4**	**34.9**	**35.6**	**37.3**	**37.7**	**39.4**	**41.4**	**42.9**	**44.0**	**44.8**	**46.3**	**47.6**	**49.8**	**50.1**	**52.0**	**52.3**
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

*Lager II. 3.4-4.1% (pre-2009) 3.4-4.2% (2009 onwards); '-' denotes nil or negligible; a blank cell denotes that data were not compiled for that category in that year.
Data source: British Beer & Pub Association. *Statistical Handbook 2012* (see Section 1.2.3 for further information on the BBPA's statistical data).

Figure 1.2 UK on-trade market: Draught beer by strength

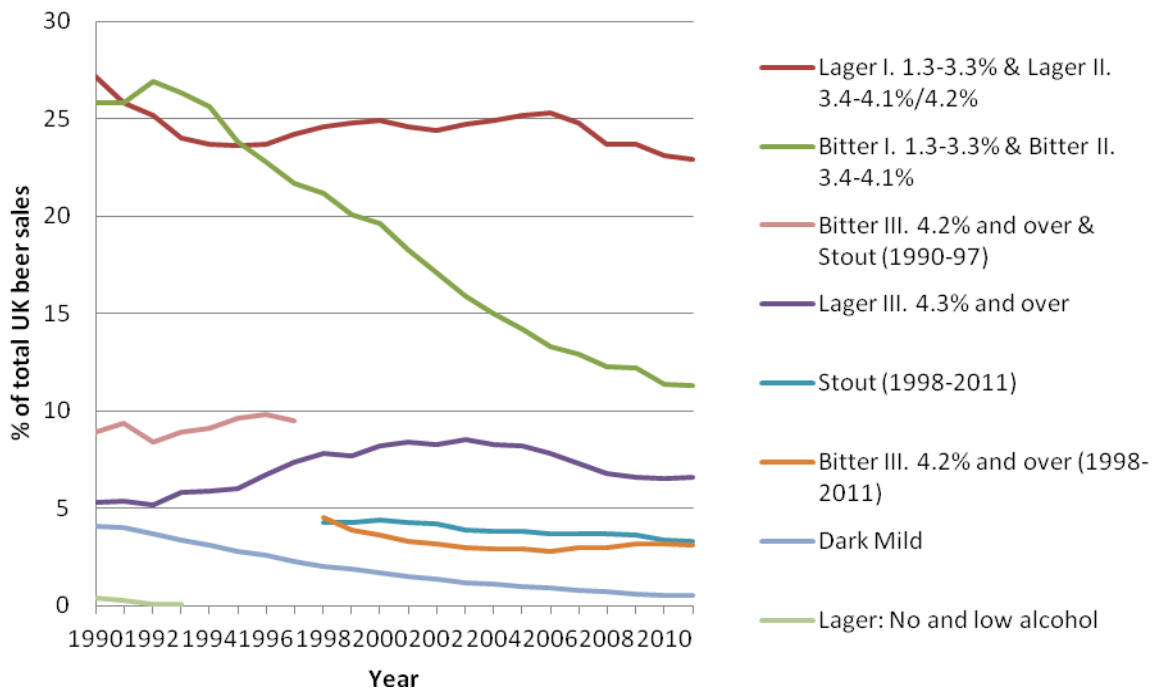


Figure 1.3 UK on-trade market: Packaged beer by strength

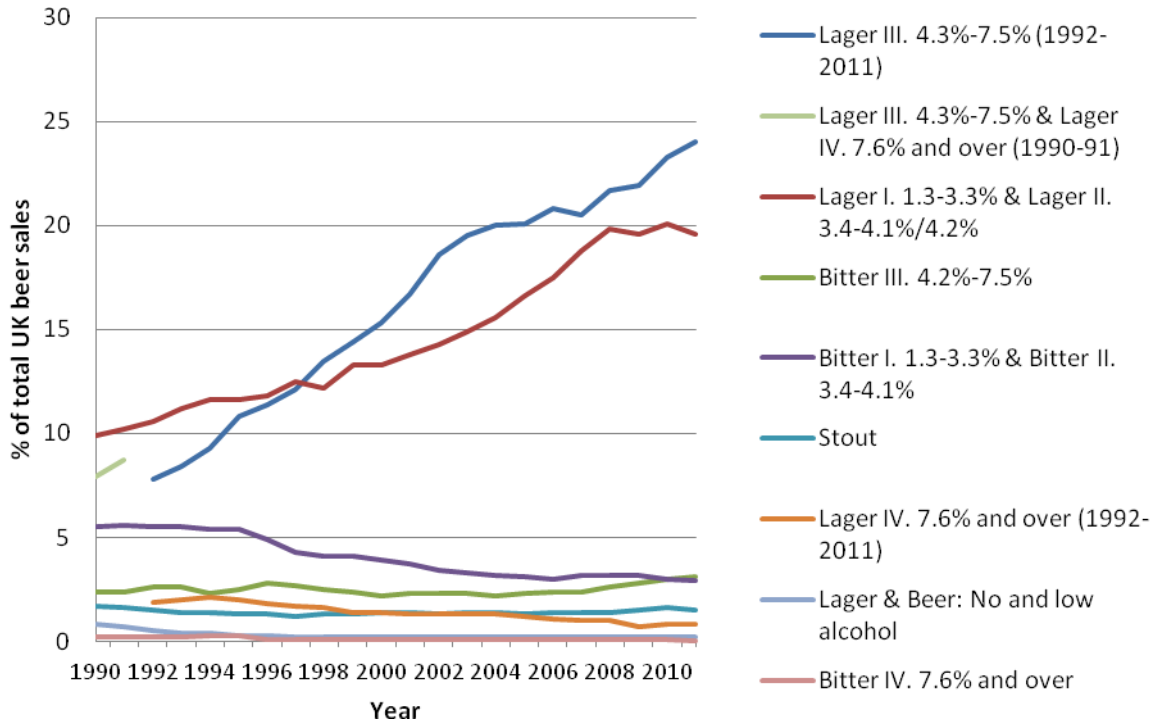


Table 1.5 and the graphs (Figures 1.2 and 1.3) show that some categories of beer have declined in popularity over the period while others have increased in popularity. In terms of changes in strength, there has been a slight trend towards stronger products becoming more popular. Low and medium strength draught lager and bitter have declined in popularity, with low and medium strength draught bitter declining particularly steeply, from 25.8% of all on-trade sales in 1990 to 11.3% in 2011. Higher strength draught lager (4.3% ABV and above) increased in popularity in the early to mid 2000s but has decreased slightly in popularity since. 'Packaged' lager (ie. in bottles and cans) has increased steeply in popularity: low and medium strength packaged lager has increased from 9.9% of all on-trade sales in 1990 to 19.6% in 2011, while stronger packaged lager (4.3%-7.5% ABV) has increased even more steeply from 7.8% in 1992 to 24.0% in 2011, and has overtaken low and medium strength packaged lager in popularity. Low and medium strength packaged bitter has declined in popularity over the period, while stronger packaged bitter (4.2%-7.5% ABV) has increased, although bitter overall accounts for a small proportion of packaged beer sales.

Information from NHS Health Scotland, based on Nielsen data, shows the volume (in litres) of beer sold off-trade in Scotland and in England & Wales between 2009 and 2012 (Table 1.6), broken down by % ABV bands (Nielsen's classification): non/low alcohol (0-1.2% ABV), commodity strength (1.3-3.3% ABV), standard strength (3.4%-4.2% ABV), premium strength (4.3%-7.5%) and super strength (over 7.5%). Nielsen retains data for a 3 year period only, so data prior to 2009 are not available to purchase. In general, there was not much change over the three-year time period. The table suggests that most (over 94%) of the market share of off-trade beers sold in the UK was held by standard strength beers and the stronger premium beers. In England and Wales over the three years, premium strength beer was increasingly outselling standard strength beer by 5% in 2009, 7.6% in 2010 and 10% in 2011.

Table 1.6 Distribution of beers by alcoholic strength sold off-trade (excluding discount retailers) in Scotland 2009-2011 and England & Wales 2009-2011 [Copyright Nielsen 2012]

	Total Scotland 2009	Total Scotland 2010	Total Scotland 2011	Total England & Wales 2009	Total England & Wales 2010	Total England & Wales 2011
Beers (Volume, Litres pure alcohol)	**7,826,118**	**7,697,711**	**7,576,067**	**74,832,758**	**73,037,173**	**71,037,459**
Non/Low Alcohol (0-1.2% ABV)	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Commodity (1.3-3.3% ABV)	1.0%	0.7%	0.7%	1.1%	0.9%	0.9%
Standard (3.4-4.2% ABV)	43.6%	42.7%	43.6%	44.9%	43.7%	42.6%
Premium (4.3-7.5% ABV)	52.1%	53.6%	52.8%	49.9%	51.3%	52.6%
Super Strength (>7.5% ABV)	3.2%	3.0%	2.8%	4.0%	4.0%	3.9%

Data source: Nielsen 2012 copyright data from MAT09 - W/E 02.01.10, MAT10 - W/E 01.01.11 and MAT11 - W/E 31.12.11 published by NHS Health Scotland (2012). Online: http://www.healthscotland.com/uploads/documents/19333-Off-trade%20price%20band%20distribution%20data_2009-2011_August%202012.xls accessed (August 31st, 2012).
Note: Off-trade data is for alcohol sold in retail outlets licensed to sell alcohol for consumption off the premises, including supermarkets, independent shops (e.g. specialist off-licences, grocers, newsagents), petrol stations and co-operatives.

A further breakdown of the information from NHS Health Scotland, based on Nielsen data and classifications, shows the volume (in litres) of beer sold off-trade in Scotland and in England & Wales, classified by the type of beer (lager, ale and stout) in addition to the % ABV bands (Table 1.7). The only data identified, however are for a single year, 2009. (Nielsen retains data for a 3 year period only, so data prior to 2009 are not available to purchase.) For all types of beer – lager, ale and stout – standard and premium strengths held over 90% of the off-trade market. For the three categories of beer sold off-trade in 2009 in England and Wales, the data suggests that premium strength (4.3-7.5% ABV) lager was marginally more popular than the weaker standard strength (3.4-4.2% ABV) lager, a 49.0% share versus a 43.4% share; and that standard strength ale and stout both sold more than

premium strength ale and stout (a 50.6% share for standard ale versus 45.7% for premium ale and standard strength stout (66.2%) sold almost double the volume of premium strength stout (32.0%)). Super strength (>7.5% ABV) lager held a 5.7% share of the off-trade market in England and Wales, but sales of super strength ale and super strength stout in England and Wales were minimal, at 1.5% and 0.0% respectively.

Table 1.7 Distribution of beers by type and alcohol strength sold off-trade (excluding discount retailers) in Scotland 2009 and England & Wales 2009 [Copyright Nielsen 2010]

Pure Alcohol Volume (L)	Scotland off-trade, 2009	England & Wales off-trade, 2009
Lager	**7,029,028**	**64,625,984**
Non/Low Alcohol (0-1.2% ABV)	0.1%	0.1%
Commodity (1.3-3.3% ABV)	0.9%	0.9%
Standard (3.4-4.2% ABV)	43.6%	43.4%
Premium (4.3-7.5% ABV)	50.8%	49.9%
Super Strength (>7.5% ABV)	4.7%	5.7%
Ale	**173,644**	**1,947,402**
Commodity (1.3-3.3% ABV)	0.9%	2.2%
Standard (3.4-4.2% ABV)	40.4%	50.6%
Premium (4.3-7.5% ABV)	58.3%	45.7%
Super Strength (>7.5% ABV)	0.4%	1.5%
Stout	**173,644**	**1,947,402**
Commodity (1.3-3.3% ABV)	9.2%	1.9%
Standard (3.4-4.2% ABV)	71.7%	66.2%
Premium (4.3-7.5% ABV)	18.5%	32.0%
Super Strength (>7.5% ABV)	0.6%	0.0%

Data source: Nielsen 2010 copyright data published by NHS Health Scotland (2011). Price of off-trade alcohol, Scotland and England & Wales 2009. Online: http://www.healthscotland.com/documents/4557.aspx accessed (August 31st, 2012).
Note: Off-trade data is for alcohol sold in retail outlets licensed to sell alcohol for consumption off the premises, including supermarkets, independent shops (e.g. specialist off-licences, grocers, newsagents), petrol stations and co-operatives.

Information supplied in interview by the British Beer & Pub Association on changes in the average strength of all beers (on- and off-trade) from 1994-2011 is given below in Table 1.8. The data on average strength was described as having been calculated by BBPA based on data from HMRC bulletins (published at http://www.uktradeinfo.com). The table shows that the average strength has increased fairly steadily by 4% over the period 1994 to 2011, from 4.05 to 4.21% ABV. For the time period 1994 to 2005, the average strength increased by 3%, from 4.05 to 4.17% ABV, with a peak strength of 4.22% ABV in 2004. Average strength has remained fairly steady between 2004 and 2011, fluctuating between 4.17% and 4.22% (see Section 1.2.3 for further information on the BBPA's statistical data).

Table 1.8 Change in average strength of all beer sales in the UK, 1994-2011

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% abv	-	-	-	-	4.05	4.08	4.09	4.10	4.15	4.12	4.18
Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
% abv	4.17	4.16	4.17	4.22	4.17	4.19	4.20	4.17	4.18	4.21	4.21

Data source: British Beer & Pub Association (personal communication);'-' denotes that data were not provided for that year.

1.3.3.2 Wine

For wine, we draw on several sources of information. The following Key Note reports were consulted for market data on wine sales broken down by strength over the period:

- Drinks Market (2000; 2001; 2003; 2005; 2006; 2008; 2009)
- Wine (1991; 2000; 2002; 2004; 2006; 2007; 2008; 2009; 2011)

These reports provided a range of data on the wine market in the UK, including breakdowns of the wine market by grape variety and country of origin, and key findings are summarised in Appendix 5. Country of origin information is relevant because, as noted in the above section, it is one determinant of wine strength. However, the Key Note reports do not present data on actual % ABV of wine.

In addition, data on the average strength of wine (on- and off-trade) for the period 1990-2011 were obtained from BBPA in the stakeholder interviews. We also include in this section Nielsen data published by NHS Health Scotland on the average strength of wine over the period 1994-2010.

As with beer, data are available on the share of wine sales accounted for by on- and off-trade respectively over the period 2000 to 2011. Table 1.9, based on BBPA data, shows that while wine bought for consumption from off-trade premises rose in the middle of the decade to 85.1%, the amount of wine bought in off-trade premises in 2000 and again in 2011 accounts for around four-fifths of the total UK wine sales (see Section 1.2.3 for further information on the BBPA's statistical data).

Table 1.9 Percentage of total UK wine sales by on- and off-trade channels

Year	On-trade %	Off-trade %	Year	On-trade %	Off-trade %
2000	18.0	82.0	**2006**	16.4	83.6
2001	17.3	82.7	**2007**	15.4	84.6
2002	18.0	82.0	**2008**	14.4	85.6
2003	18.7	81.3	**2009**	19.2	80.8
2004	15.8	84.2	**2010**	19.2	80.8
2005	14.9	85.1	**2011**	19.0	81.0

On-trade sales include pubs, hotels, wine-bars, restaurants and clubs and off-trade sales include off-licences, grocers, supermarkets and all other shops.
Data source: BBPA (2012b). *Statistical Handbook 2012*.

Information supplied in interview by the British Beer & Pub Association on changes in the average strength of wine (on- and off-trade) from 1990-2011 is given below in Table 1.10. The data on average strength was historically calculated by the BBPA using HMRC estimates (from bulletins published at http://www.uktradeinfo.com) (see Section 1.2.3 for further information on the BBPA's statistical data). More recently, the organisation purchased Nielsen data for the top 200 wines brands to calculate an average strength to extrapolate to the data retrospectively (BBPA 2012, personal communication). For the time period 1990 to 2005, the average strength increased by 12%, from 11.15 to 12.48% ABV. Over the whole period, there was a 13% increase from 11.15 to 12.58% ABV, with the average strength of wine plateauing at 12.58% ABV from 2007 onwards.

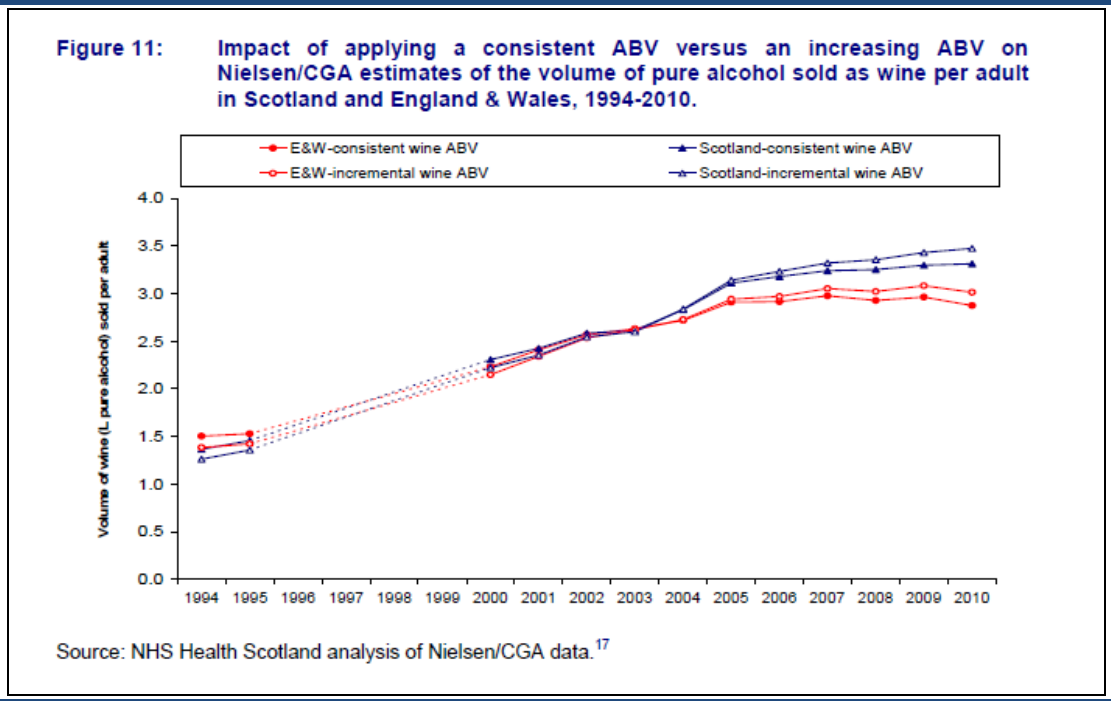
Table 1.10	Change in average strength of all wine sales in the UK, 1990-2011										
Year	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
% abv	11.15	11.2	11.25	11.3	11.35	11.4	11.5	11.5	11.55	11.7	11.84
Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
% abv	11.99	12.14	12.28	12.43	12.48	12.53	12.58	12.58	12.58	12.58	12.58

Data source: British Beer & Pub Association (personal communication)

An analysis by NHS Health Scotland compares two sources of wine % ABV changes over time (NHS Health Scotland 2012). HMRC trade data using the country of origin for wines to estimate the average strength of wine (Ambler 2008, cited in NHS Health Scotland 2012) is compared with Nielsen/CGA estimates using the volume of pure alcohol sold as wine per adult related to market knowledge of the most popular brands of wine.

The figure below (Figure 1.4), from their analysis, illustrates the changes over this review's time period. What the figure shows is that when an increasing % ABV is applied to wine consumption over the period (reflecting HMRC's estimates that the strength of wines has been increasing due to the dominance of new world wines, which tend to have higher alcohol content) this yields slightly higher estimates of the litres of pure alcohol sold per adult in both England and Wales and Scotland from 2004 onwards. However, the differences are relatively small and do not suggest that the increasing strength of wine has dramatically altered alcohol per capita consumption.

Figure 1.4 Changes in wine strength in England & Wales and Scotland, 1994-2010



Source: NHS Health Scotland (2012). Monitoring and Evaluating Scotland's Alcohol Strategy: A review of the validity and reliability of alcohol retail sales data for the purpose of Monitoring and Evaluating Scotland's Alcohol Strategy March 2012 Revised May 2012: p40

1.3.3.3 Cider

We were only able to find cider sales data, from Nielsen, broken down by ABV levels for off-trade sales, limited to the years 2009-2011. The BBPA's on-trade sales data for cider are not broken down by ABV levels. The market research companies Euromonitor and Mintel were contacted in an attempt to identify alcohol market sales data broken down by ABV level, but neither company was able to provide the desired information.

As with beer and wine, data are available on the share of cider sales accounted for by on- and off-trade respectively over the period 2000 to 2011. Table 1.11, based on BBPA data, shows that while the proportions of cider bought for consumption were roughly equal in on- and off-trade premises in 2000, cider bought in off-trade premises has risen to a share of over three-fifths in 2011, as that bought in on-trade premises has declined (see Section 1.2.3 for further information on the BBPA's statistical data).

Table 1.11 Percentage of total UK cider sales by on- and off-trade channels

Year	On-trade %	Off-trade %	Year	On-trade %	Off-trade %
2000	49.0	51.0	**2006**	41.4	58.6
2001	46.3	53.7	**2007**	41.4	58.6
2002	46.6	53.4	**2008**	39.1	60.9
2003	47.9	52.1	**2009**	39.8	60.2
2004	38.2	61.8	**2010**	37.8	62.2
2005	41.1	58.9	**2011**	37.8	62.2

On-trade sales include pubs, hotels, wine-bars, restaurants and clubs and off-trade sales include off-licences, grocers, supermarkets and all other shops.
Data source: BBPA (2012b). *Statistical Handbook 2012*.

Market data are available from Nielsen on UK cider consumption by strength in the on- and off-trade channels for a short time-period (3 years). Nielsen retains data for a period of 3 years only, so data prior to 2009 are not available to purchase. Information from NHS Health Scotland, based on Nielsen data, shows the volume (in litres) of cider sold in Scotland and in England & Wales between 2009 and 2012, broken down into two categories: regular strength (4.5% ABV), and strong (7.5% ABV) (see Table 1.12, note that these categories are likely to include a range of % ABV, however this information was not provided in the source report). The table suggests that while strong cider has decreased slightly in popularity in Scotland over the period and regular strength cider has increased, the reverse has occurred in England and Wales.

Table 1.12 Distribution of cider by alcoholic strength sold off-trade (excluding discount retailers) in Scotland 2009-2011 and England & Wales 2009-2011 [Copyright Nielsen 2012]

	Total Scotland 2009	Total Scotland 2010	Total Scotland 2011	Total England & Wales 2009	Total England & Wales 2010	Total England & Wales 2011
Cider (Volume, Litres pure alcohol)	**2,078,950**	**2,067,567**	**2,215,804**	**18,753,046**	**19,407,261**	**20,144,625**
Strong Cider (7.5% ABV)	21.8%	17.1%	15.6%	17.6%	18.9%	20.4%
Regular Cider (4.5% ABV)	78.2%	82.9%	84.4%	82.4%	81.1%	79.6%

Data source: Nielsen 2012 copyright data from MAT09 - W/E 02.01.10, MAT10 - W/E 01.01.11 and MAT11 - W/E 31.12.11 published by NHS Health Scotland (2012). Online: http://www.healthscotland.com/uploads/documents/19333-Off-trade%20price%20band%20distribution%20data_2009-2011_August%202012.xls accessed (August 31st, 2012).
Note: Off-trade data is for alcohol sold in retail outlets licensed to sell alcohol for consumption off the premises, including supermarkets, independent shops (e.g. specialist off-licences, grocers, newsagents), petrol stations and co-operatives.

Although the BBPA Statistical Handbooks have data on cider sales, these are not broken down by strength.

Key Points:

- **Beer:** Data are available on the breakdown of on-trade beer sales by strength for 1990-2011, the breakdown of off-trade beer sales by strength for 2009-2011, and average strength of beer (all sales) per year for 1994-2011.
- The average strength (all sales) has increased fairly steadily by 4% over the period 1994 to 2011, from 4.05 to 4.21% ABV. For the time period 1994 to 2005, the average strength increased by 3% from 4.05 to 4.17% ABV, with a peak strength of 4.22% ABV in 2004. Average strength has remained fairly steady between 2004 and 2011, fluctuating between 4.17% and 4.22%.
- **Wine:** Data are available on the average strength of wine per year for 1990-2011.
- Between 1990 and 2005, the average strength of wine increased by 12%, from 11.15 to 12.48% ABV. Over the whole period, there was a 13% increase from 11.15 to 12.58% ABV, with the average strength of wine plateauing at 12.58% ABV from 2007 onwards.
- **Cider:** Only able to find data on average strength between 2009 and 2012, broken down by two strength categories (regular 4.5 % ABV and strong 7.5% ABV). The data suggest that while strong cider has decreased slightly in popularity in Scotland over the period and regular strength cider has increased, the reverse has occurred in England and Wales.

1.4 Changes in standard measures, glass size and shape

Over the period 1990 to 2012, there have been changes in the legally permitted measure sizes served in licensed premises for some categories of alcoholic beverage, with a trend in some categories towards larger measures becoming the norm. There have also been industry-led changes in relation to vessel size and shape which are likely to have affected consumer perceptions of what is a normal serving size.

The section begins with an overview of legislative changes in permitted serving sizes over the period 1990 to 2012 (1.4.1), then considers information on the use and popularity of different vessel sizes and types in licensed premises (1.4.2) over the same period. In Section 1.4.3 we examine information on changes in vessel size and type for home consumption.

1.4.1 Legislative changes in serving sizes in licensed premises

UK Weights and Measures Orders legislate on measures of alcohol that can legally be served on licensed premises. The Legislation covers the following categories of alcoholic beverage:

- Wine
- Fortified Wine
- Beer and Cider
- Spirits (Gin, Rum, Vodka and Whisky)

The Legislation applies to England, Scotland and Wales. Northern Ireland has separate legislation.

There have been several changes/amendments to UK Weights and Measures Legislation regarding alcohol measures for sale on licensed premises affecting the period 1990-present. Tables 1.13 and 1.14 outline these changes, first of all listing all relevant extant legislation for that period and secondly listing the permitted measures in place for each category of alcoholic drink for each year between 1990 and 2012.

The main changes have been:

- the introduction in 1995 of permitted measure sizes for wine served by the glass in licensed premises (125ml, 175ml, and multiples thereof);
- the change from imperial to metric measure sizes for spirits served in licensed premises, which introduced 25ml and 35ml measures in 1995 and an additional measure size of 70ml in 2001;
- beer measure sizes have remained largely unchanged over the period (1/3 pint, ½ pint and multiples of ½ pint), although a 2/3 pint measure was introduced in 2011;
- in 2010, legislation was introduced to ensure that the smallest measures must be available to customers and that customers are made aware of their availability.

The introduction of the larger spirit measure in 2001 and the allowance for multiple measures (for example, 250ml wine serving) might be expected to have increased the average serving size for spirits and wine. This is examined further in Section 1.4.2.

Table 1.13 Legislative changes concerning measure sizes on licensed premises 1990-2012

Wine			
Regulation	**Date it came into force**	**Measurements**	**Notes**
The Weights and Measures (Intoxicating Liquor) Order 1988	1st Jan 1989	To be sold only in the following quantities for consumption on the premises at which it is sold: • 25cl, 50cl, 75cl, or 1L; or • 10fl oz., or 20fl oz.	No measure specified for glass servings until the 1995 legislation.
Weights and Measures (Various Foods) (Amendment) Order 1990	1st Jan 1995	When sold in the glass or other vessel from which it is intended to be drunk, and wine for consumption on the premises at which it is sold: • 125ml, 175ml, or multiples thereof	This was the first weights and measures legislation related to the sale of wine by the glass.
An amendment to The Licensing Act 2003 (Mandatory Licensing Conditions) Order 2010	1st Oct 2010	Ensures that the smallest measures must be available to customers and that customers are made aware of their availability: 125ml for still wine in a glass	
The Weights and Measures (Specific Quantities) (Unwrapped Bread and Intoxicating Liquor) order 2011	1st Oct 2011	Wines (other than fortified wines) sold in a quantity of **less than 75ml permitted to be sold in any quantity** without quantity indications	

Fortified Wine			
Regulation	**Date it came into force**	**Measurements**	**Notes**
The Weights and Measures (Specific Quantities) (Unwrapped Bread and Intoxicating Liquor) Order 2011	1st Oct 2011	Wine fortified for distillation shall be sold only in, or in a multiple of, the following quantities: • 50ml • 70ml	No reference to fortified wines in previous legislation.

Beer and Cider			
Regulation	**Date it came into force**	**Measurements**	**Notes**
The Weights and Measures (Intoxicating Liquor) Order 1988	1st Jan 1989	Unless pre-packed in a securely closed container and except when sold as a constituent of a mixture of two or more liquids, beer or cider shall be sold only in a quantity of: 1/3 pint (~189.4ml), ½ pint (~284.1ml) or a multiple of ½ pint.	
An amendment to The Licensing Act 2003 (Mandatory Licensing Conditions) Order 2010	1st Oct 2010	Ensures that the smallest measures must be available to customers and that customers are made aware of their availability: ½ pint for beer and cider	
The Weights and Measures (Specific Quantities) (Unwrapped Bread and Intoxicating Liquor) order 2011	1st Oct 2011	Permits retail sales of **2/3 pint** (~378.8ml) of draught beer or cider (in addition to permitted measures of 1/3 pint, ½ pint and multiples of ½ pint).	2/3 pint measures commonly known as 'Schooners'.

Spirits			
Regulation	**Date it came into force**	**Measurements**	**Notes**
The Weights and Measures (Intoxicating Liquor) Order 1988	1st Jan 1989	Unless pre-packed in a securely closed container, gin, rum, vodka and whisky, shall be sold by retail for consumption on the premises at which it is sold only in multiples of the following quantities: • ¼ gill (~35.5ml) • 1/5 gill (~28.4ml) • 1/6 gill (23.7ml)	Legislation includes a requirement that a statement is clearly displayed in the premises outlining the quantities that spirits are offered for sale.
Weights and Measures (Various Foods) (Amendment) Order 1990	1st Jan 1995	Gin, rum, vodka and whiskey may be sold for consumption on the premises in measures of **25ml**. Sales in imperial quantities (1/4, 1/5 and 1/6 gill) no longer permitted.	Legislation came into force on 27th July 1990, but this clause had a later date of implementation
The Weights and Measures (Intoxicating Liquor) (Amendment) Order 1994	14th July 1994	Allows for a second metric quantity (**35ml**) in which gin, rum, vodka and whisky may be sold for consumption on licensed premises.	
The Weights and Measures (Intoxicating Liquor) (Amendment) Order 2001	3rd April 2001	Allows for the use of a **70ml** capacity measure (in addition to **25ml** and **35ml**) for the sale of gin, rum, vodka and whisky for consumption on licensed premises.	In order that double measures may be dispensed without the need to use a 35ml capacity measure twice for the purpose of measuring a quantity of 70ml.
An amendment to The Licensing Act 2003 (Mandatory Licensing Conditions) Order 2010	1st Oct 2010	Ensures that the smallest measures must be available to customers and that customers are made aware of their availability: 25ml or 35ml for gin, rum, vodka or whisky	

Table 1.14 Year-by-year summary of the serving sizes permitted on licenses premises (changes are indicated in bold the first year they come into effect)				
Year	**Wine**	**Fortified Wine**	**Beer (ale, lager, stout) and Cider**	**Spirits**
1990	No measure in place for wine by the glass		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	¼ gill (35.5ml) 1/5 gill (28.4ml) 1/6 gill (23.7ml)
1991	No measure in place for wine by the glass		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	¼ gill (35.5ml) 1/5 gill (28.4ml) 1/6 gill (23.7ml)
1992	No measure in place for wine by the glass		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	¼ gill (35.5ml) 1/5 gill (28.4ml) 1/6 gill (23.7ml)
1993	No measure in place for wine by the glass		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	¼ gill (35.5ml) 1/5 gill (28.4ml) 1/6 gill (23.7ml)
1994	No measure in place for wine by the glass		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	¼ gill (35.5ml) 1/5 gill (28.4ml) 1/6 gill (23.7ml) **35ml**
1995	**125ml** **175ml** **Multiples thereof**		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	**25ml** 35ml
1996	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml
1997	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml
1998	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml
1999	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml
2000	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml
2001	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2002	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2003	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2004	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2005	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2006	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml

2007	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2008	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2009	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2010	125ml 175ml Multiples thereof		1/3 pint (189.4ml) ½ pint (284.1 ml) Multiple of ½ pint	25ml 35ml 70ml
2011	**<75ml** 125ml 175ml Multiples thereof	**50ml** **70ml**	1/3 pint (189.4ml) ½ pint (284.1 ml) **2/3 pint (378.8ml)** Multiple of ½ pint	25ml 35ml 70ml
2012	<75ml 125ml 175ml Multiples thereof	50ml 70ml	1/3 pint (189.4ml) ½ pint (284.1 ml) 2/3 pint (378.8ml) Multiple of ½ pint	25ml 35ml 70ml

Key Points:

- The legislation on serving size only relates to sale of alcohol for consumption on licensed premises.
- Legislation does not apply to drinks sold by the bottle e.g. bottled beers and alcopops, to spirits other than those specified e.g. brandy, or to liqueurs or cocktails.
- In 1995, permitted measure sizes for wine served by the glass in licensed premises changed to 125ml, 175ml, and multiples thereof.
- Also in 1995, metric measure sizes of 25ml and 35ml were introduced for spirits served in licensed premises, with an additional measure size of 70ml introduced in 2001.
- Beer measure sizes have remained largely unchanged over the period (1/3 pint, ½ pint and multiples of ½ pint), although a 2/3 pint measure was introduced in 2011.
- In 2010, legislation was introduced to ensure that the smallest measures must be available to customers and that customers are made aware of their availability.

1.4.2 Use and popularity of different vessel sizes and types in licensed premises

The previous section highlights the multiple sizes of measures that were available concurrently for the different drinks categories over the period 1990-2012, and suggests that there might be expected to have been an increase in average measure size for spirits and wine. In order to assess any effect on average measure size, we need to examine market and trade data for any information on how average serving sizes and types of vessels have changed in use and popularity over time.

It is possible that precise data exist on the proportion of on-trade sales for particular beverage categories broken down by glass size (for example, held by individual pub chains), but we were unable to locate any such data through the desk research and stakeholder interviews. This section reports information from the hospitality and drinks industry trade press and from market research reports on the use and popularity of different glass sizes and other vessels in licensed premises. More detailed examples are provided in Appendices 6 and 7. Two issues are examined:

- changes in vessel sizes in licensed premises (1.4.2.1); and
- changes in vessel type in licensed premises (1.4.2.2).

It is important to note that the information presented in this section is from the alcohol industry and hospitality sector trade press, and much of it is based on the viewpoints and beliefs of individuals (sometimes from alcohol industry press releases), rather than on market data.

1.4.2.1 Vessel sizes in licensed premises

The majority of information on vessel or serving sizes in licensed premises from the trade and hospitality press relates to wine servings, possibly due to the increasing popularity of selling wine by the glass on licensed premises[46]. Articles published between 1995 and 2004 report on the trend for offering larger wine glasses in licensed premises[47] and, in 2004, the increasing popularity of 250ml wine glasses and serving wine by the bottle in licensed premises[48]. Several trade press articles[eg.49] report on a survey of 1,100 restaurants, hotels and pubs conducted in 2004 by UK wine wholesaler King UK, which reportedly found that 90% of pubs were using the 250ml wine glass as standard and only 4% using the regular 125ml glass, compared with 29% using the 250ml glass two years previously and 50% preferring 125ml. Similar trends were reported for restaurants (with the number using 250ml glasses described as having doubled in the past two years), and for hotels, where the proportion using the bigger glass was reported to have increased from 19% in 2001 to 58% in 2003. The survey also reported on an increase in customers choosing a full bottle of wine rather than a glass. We were unable to locate the original survey data.

In 2007, a wine bar inside Selfridges department store in London introduced 25ml 'sips' of wine for sale, although this was illegal at the time[50]. The trade press later reports on the change in legislation in 2011 for 75ml servings of wine, or less, to be sold without quantity indications[51]. In 2008, the trend for licensed premises to phase out the standard 125ml wine glass, and only sell 175ml and 250ml sizes is reported[52]. Another serving size option for wine was introduced onto the market with the reported launch of the 200ml single serve bottle for a rose wine (Pink Piccolo), to tap into the "emerging trend for sparkling wine and champagne served in smaller, single serve bottles" in 2008[53].

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[46] Caterer & Hotelkeeper (2007). Pressure grows for change in law on wine measures. September 6th.

[47] Caterer & Hotelkeeper (1995). *Bowled statement*. August 17th.; Caterer & Hotelkeeper (2000). *Working Glasses*. November 9th.; Caterer & Hotelkeeper (2000). *A Glass Act*. November 23rd.; Caterer & Hotelkeeper (2004). *Wine Glass of Choice has Doubled in Size*. June 9th.; The Publican's Morning Advertiser (2004). *Wine glass size doubles, says new research*. June 14th.

[48] Caterer & Hotelkeeper (2004). *Wine Glass of Choice has Doubled in Size*. June 9th.; Wilmore J (2008). Nearly a third of venues still offer 125ml measure. *The Publican's Morning Advertiser*, April 14th.

[49] Caterer & Hotelkeeper (2004). *Wine Glass of Choice has Doubled in Size*. June 9th. The Publican's Morning Advertiser (2004). *Wine glass size doubles, says new research*. June 14th.

[50] Sims F (2009). How Selfridges sommelier Dawn Davies took on the law - and won. *Caterer & Hotelkeeper*, November 5th.

[51] The OnTrade Preview 2012; Turney E (2011). Five key changes for pubs now in force. *The Publican's Morning Advertiser*, October 3rd.

[52] Walton C (2008). MP calls for smaller wine glasses. *Caterer & Hotelkeeper*, January 30th.

[53] Harpers (2008). Foster's debuts Pink Piccolo to UK on-trade. October 6th.

From 2004 to 2005, the trade press notes changes in serving sizes for other drinks categories, such as the increasing popularity of serving double measures of spirits[54] and the increasing popularity of serving pitchers of cocktails and pitchers of beer in licensed premises[55]. More recent articles report on the introduction of the 'schooner' measure (two-thirds of a pint) for beer and cider in licensed premises, but suggest that there is limited awareness of this new measure among consumers[56].

From the market research reports, the only mention of glass size changes in the licensed trade was in Key Note's 2002 analysis of 'Market Trends' in glassware in the UK, that "Recent years have seen the trend for restaurants to serve wine and cocktails in large glasses" (Key Note, 2002, Glassware, p6).

1.4.2.2 Vessel types in licensed premises

As reported for vessel sizes above, the majority of reports on the types of vessels used in licensed premises from the trade and hospitality press relate to wine. Between 1995 and 2000 there was a change from the 'Paris goblet' shape being the most popular for wine to a variety of available shapes[57], with other lifestyle fashions having an impact on wine glass shapes[58]. The Paris goblet is reported to have been replaced by glasses with more elongated, tapered bowls[59] and the trade press notes overall a tendency for wine glasses to become bigger, and stems to become taller[60] during the 2000s.

The on-trade press reports on the launch in 2006 of a 16oz spirit and mixer glass by Diageo, with male drinkers as the main target and a recommendation for using with 50ml of spirits and 200ml of mixer serving. The glass is described as being the same height as a tulip pint glass, with a wide top and narrow base. Smaller 12oz glasses, in the same style, are available 'for female consumers' and those who would prefer to stick to 25ml measures of spirits[61].

In the beer and lager category, between 2009 and 2010, working with a designer, the BitterSweet Partnership created a beer glass 'to appeal to women' to encourage more women into the beer category[62] . Guinness glasses were also reported to have been redesigned, as taller and slimmer with a thicker base for safety and a better grip for customers[63]. Academic research is also reported by the on-trade press on how glass shape can affect the amount people pour and drink[64].

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[54] Caterer & Hotelkeeper (2004). *Wine Glass of Choice has Doubled in Size*. June 9th.

[55] Withrington A (2005). Climbing the ladder. *The Publican's Morning Advertiser,* January 19th.; Caterer & Hotelkeeper (2004). *Wine Glass of Choice has Doubled in Size*. June 9th.

[56] Perrett M (2011). Heineken unveils new two-thirds glass. *The Publican's Morning Advertiser*, August 18th.; The OnTrade Preview 2012; Turney E (2011). Five key changes for pubs now in force. *The Publican's Morning Advertiser*, October 3rd.; Frewin A (2011). Libbey two-third pint beer schooner glasses from John Artis. *Caterer & Hotelkeeper*, November 25th.

[57] Caterer & Hotelkeeper (1995). *Bowled statement*. August 17th.; Caterer & Hotelkeeper (1996). *Shaping Up*. April 11th.; Caterer & Hotelkeeper (2000). *Working Glasses*. November 9th.

[58] Caterer & Hotelkeeper (1996). *Shaping Up*. April 11th.

[59] Caterer & Hotelkeeper (1996). *Shaping Up*. April 11th.

[60] Caterer & Hotelkeeper (1995). *Bowled statement*. August 17th.; Caterer & Hotelkeeper (2000). *Working Glasses*. November 9th.

[61] Cran D (2006). Diageo introduces a glass for the boys. *Harpers*, August 24th.

[62] Hook S (2009). Girl glasses to be designed. *The Publican's Morning Advertiser*, October 8th.; Lewis R (2010). Public vote finds female-friendly half-pint glass. *The Publican's Morning Advertiser*, January 14th.

[63] Lewis R (2010). New Guinness glass revealed: Diageo has improved its branded glassware for Guinness for the first time in a decade, but the tulip shape remains. *The Publican's Morning Advertiser*, April 9th.

[64] Foottit L (2010). Glass shape can make people drink more. *The Publican's Morning Advertiser*, August 31st.

Key Note's 2002 analysis of 'Market Trends' in glassware in the UK reports on the change in types of glasses used for serving beer in licensed premises: "Since the 1970s, traditional dimpled glass pint beer mugs have become less popular as drinkers changed to straight glasses, the latter being lighter and thinner, although tougher, and easier to fit in home dishwashers and modern glass washing machines in pubs" (Key Note, 2002, Glassware, p. 6). The traditional dimpled glass mugs for beer are no longer produced in the UK as the UK's largest maker of beer mugs and wine glasses for retail and catering markets (Ravenhead) and a competitor (Demaglass) were both put into administration in 2000 and 2001 respectively leading to "a fundamental change in the UK market as all high-volume glassware for the retail and pub markets has since had to be imported" (Key Note Glassware 2004, p.42).

More recently, Key Note's 2009 'competitor analysis' for the premium lagers, beers and ciders market reports that branded glasses have proliferated in the licensed trade over the previous ten years, "including the use of distinctive tulip-shaped pint glasses for serving Stella Artois" (p.49). The following year, several premium lager brands have duplicated this by converting to pint glasses with a stem (Key Note, Premium Lagers, Beers and Ciders, 2010). The Key Note report states that one brand, San Miguel, found a rise in sales following the introduction of its new stemmed glasses in the licensed trade (Key Note, Premium Lagers, Beers and Ciders, 2010).

Key Points:

- Precise data on the proportion of on-trade sales for particular beverage categories broken down by glass size could not be obtained through the desk research or stakeholder interviews.
- Information from the trade press and market research reports suggest a trend for licensed premises to offer larger servings of wine by the glass from the mid-1990s onwards, with one survey claiming that by 2004, 90% of pubs were using the 250ml measure as standard compared with 29% using the larger measure two years previously.
- Trends towards larger measures, such as double measures of spirits, large glasses for cocktails and serving cocktails and beer in pitchers, are also described.
- Several trends and innovation in vessel type are described, driven by reported consumer preferences or to appeal particularly to male or female drinkers.

1.4.3 Changes in vessel size and type for home consumption

This section reports information from market research reports on changes in vessel size and type for home consumption. Two issues are examined:

- changes in container size and type for products sold in retail outlets for home consumption (1.4.3.1); and
- changes in the size and shape of glasses used in the home (1.4.3.2).

The Key Note marketing intelligence company has published eight market research reports about the glassware industry in the UK over this review's time-period, four about non-food sales in supermarkets, nine for the wine market in the UK and seven about the premium beers, lagers and ciders industry (see Appendix 2). The market research reports are compiled with data from trade sources, online searches, interviews and field research plus secondary data sources for consumer information, advertising expenditure and background data. These reports were used as a data source for the information below. No relevant changes were identified from the trade and hospitality press searches.

1.4.3.1 Changes in container size and type for products sold in retail outlets for home consumption

It was reported in Key Note's 2000 'market share' analysis of the premium lagers, beers and ciders market that the vast majority of premium white cider products are packaged in single-serve bottles, although cans may also be used. This 'style' sector is reported to be the largest category in the take-home premium market (Key Note, 2000 Market Report *Plus*). Key Note's 2002 'current issues' report on the premium lagers, beers and ciders market noted the introduction of large (600ml) bottles by Carlsberg Export for use for when serving meals. This followed similar initiatives for Stella Artois, San Miguel, Beck's and other premium beers (Key Note, 2002 Market Report *Plus*). The move toward larger bottles is noted in Key Note's 2004, 2007 and 2009 'competitor analysis' for the premium lagers, beers and ciders market which all reported that several major premium lagers introduced large glass bottles (1 litre or larger) for the 'take-home' market in response to the 'beer with food' trend. These bottles are intended to be used at the table in place of wines for multiple servings (Key Note, 2004 Market Report; Key Note, 2007 Market Report; Key Note, 2009 Market Report). Key Note's 2004 'competitor analysis' for the premium lagers, beers and ciders market reported that Stella Artois had introduced a 5-litre aluminium draught barrel for take-home (Key Note, 2004 Market Report).

Key Note's 2009 'competitor analysis' for the premium lagers, beers and ciders market notes that in glass packaging, a wide variety of bottle sizes and types are used: small bottles or 'stubbies' sold in multi-bottle cartons; larger, decorated brown bottles for premium ales; and even larger glass bottles (1 or 1.5 litre), intended as multi-serve bottles (Key Note, 2009 Market Report).

1.4.3.2 Changes in shape and size of glasses used in the home

There is no legislation and there are no industry standards concerning glass size for home consumption.

In 1991, approximately 90% of the UK consumer and catering glassware market was for drinking glasses (the rest for cookware, tableware and ornamental glassware); and a third of this was produced for the licensed victuallers catering market with the remainder for the retail and export markets (Key Note, 1991, Glassware). In 1999, drinking glasses were still the largest category in the UK glassware sector (Key Note, 1999, Glassware), although no proportions are given for the 2000s.

Key Note's 2002 analysis of 'Market Trends' in glassware in the UK, identifies a trend for less formal dining, with fewer people "likely to differentiate between glasses designed for red or white wine" (p.5) and fewer using an additional glass for an aperitif, a water glass and a digestif glass when dining. This continues in the 2004 'Market Trends' report, reflecting the increase in wine imports to the UK, stating that "Less formal dining habits might reduce the call for wine-specific glasses but it is probable that most households now have, or aspire to have, a larger and more varied collection of wine glasses than previously" (Key Note Glassware 2004, p.3). The following year, the trend is identified as an 'Opportunity' in a SWOT[65] analysis for the glassware industry as "wine is more widely and routinely drunk with meals at home than used to be the case, increasing the demand for different shape and style glasses to fit different occasions and types of wine" (Key Note Glassware 2005, p. 38). Between 1999 and 2011 there is continuing trend reported by Key Note for UK drinking glass manufacturers and department stores to create ranges of glasses with interior and home-ware designers and celebrity chefs.

[65] Strengths, Weaknesses, Opportunities and Threats

In terms of glass size changes, the only mention was in Key Note's 2002 analysis of 'Market Trends' in glassware in the UK, where the on-trade trend for serving wine and cocktails in large glasses was noted by home-store IKEA, which began to sell "wine glasses of a pint capacity" (Key Note, 2002, Glassware, p. 6).

Available market data for glassware sold for use in the home (predominantly drinking glasses) are not broken down by shape or size of glasses; some tables have been included in Appendix 8 for context.

Key Points:

- The data on changes in vessel size and type for home consumption over the time period are limited and come from market research reports only.
- Market research reports indicate a trend for larger bottles of beer (increasing from 600ml in 2002 to 1-1.5 litres in 2009) sold for home consumption, intended, by the manufacturers, to be used at the table in place of wines for multiple servings.
- Available market research data for glassware sold for use in the home are not broken down by shape or size of glasses. Reports describe how the trends for dining at home and increased consumption of wine have raised the demand for different shape and style glasses to fit different occasions and types of wine.

1.5 Summary

This part of the study sought to identify and map key changes in alcohol strength, standard measures, glass size, shape and % ABV since 1990, focusing primarily on changes relating to beer, wine and cider. Two methods were used, desk based research and interviews with key stakeholders from the hospitality and trade sectors, and from public health and alcohol policy. For the desk research, five types of data were consulted:

a) Legislative documents which stipulate minimum or maximum levels of % ABV (alcohol by volume) and determine the measures that can legally be served on licensed premises for certain categories of alcoholic beverage.

b) HM Revenue & Customs (HMRC) data on rates of duty on alcohol which show how duty levels have changed over the period for different categories of alcoholic beverage, potentially acting as an incentive or disincentive to the production of different strength products, and other relevant HMRC trade data.

c) Alcohol manufacturers' and retailers' data, particularly the British Beer and Pub Association (BBPA) Statistical Handbook which presents market and other data relevant to the British brewing and pub industries.

d) Market research data from commercial organisations such as Nielsen, Mintel, Key Note and Euromonitor, which include data on the volume and price of alcohol sold both on- and off-trade in the UK, and on the proportion of sales by sector (on- and off-trade) for various categories of alcoholic drinks.

e) Information from trade and hospitality periodicals on general trends in the UK's on-trade and off-trade, the introduction of new products and the industry's response to changes to legislation. Where precise data are lacking on a particular question, these can provide an indication of trends as perceived within the industry.

1.5.1 Changes in alcohol strength

Changes in duty levels over the period 1990-2012 have acted as an incentive for manufacturers to introduce some new lower strength products or to reduce the % ABV of existing products below specific duty thresholds.

With beer, there has been a trend towards greater variability in strength (both lower and higher) in response to duty changes (eg. reduction for <2.8% ABV beers) and perceived consumer demand (for both stronger and weaker products).

Available data suggest that the average strength of beer, for both on- and off- trade combined, has increased fairly steadily by 4% over the period 1994 to 2011, from 4.05 to 4.21% ABV. For the time period 1994 to 2005, the average strength increased by 3%, from 4.05 to 4.17% ABV, with a peak strength of 4.22% ABV in 2004. Average strength has remained fairly steady between 2004 and 2011, fluctuating between 4.17% and 4.22%.

For wine, there has been an overall trend towards increasing strength from 1997 to 2007, attributed to the growing popularity and market share of stronger New World wines over weaker European wines. Since 2007, new lower strength wines have been developed, in response both to perceived consumer demand and duty rates favouring lower % ABV.

Available data on average wine strength suggest that between 1990 and 2005, the average strength of wine increased by 12%, from 11.15 to 12.48% ABV. Over the whole period, there was a 13% increase from 11.15 to 12.58% ABV, with the average strength of wine plateauing at 12.58% ABV from 2007 onwards.

The cider category is very varied, with a broad range of strengths amongst its most popular brands. Data are limited, but overall a mixed picture emerges over the time period, with some products reduced in strength, sometimes in response to duty changes, and other stronger products launched in the 1990s. Available data on average strength between 2009 and 2012 suggest that while strong cider has decreased slightly in popularity in Scotland over the period and regular strength cider has increased, the reverse has occurred in England and Wales.

1.5.2 Changes in standard measures, glass size and shape

Legislation on serving size only relates to sale of alcohol for consumption on licensed premises, and does not apply to drinks sold by the bottle, to some spirits, and to liqueurs or cocktails. In 1995, permitted measure sizes for wine served by the glass in licensed premises changed to 125ml, 175ml, and multiples thereof, and metric measure sizes of 25ml and 35ml were introduced for spirits served in licensed premises, with an additional measure size of 70ml introduced in 2001.

Beer measure sizes were largely unchanged over the period (1/3 pint, ½ pint and multiples of ½ pint), although a 2/3 pint measure was introduced in 2011. In 2010, legislation was introduced to ensure that the smallest measures for all categories must be available to customers and that customers are made aware of their availability. The introduction of the larger spirit measure in 2001 and the allowance for multiple measures (for example, 250ml wine serving) might be expected to have increased the average serving size for spirits and wine.

Precise data on the proportion of on-trade sales for particular beverage categories broken down by glass size could not be obtained through the desk research or stakeholder interviews. However, information from the trade press and market research reports suggest a trend for licensed premises to offer larger servings of wine by the glass from the mid-1990s onwards, with one survey claiming that by 2004, 90% of pubs were using the 250ml measure as standard compared with 29% using the larger measure two years previously. Other reported trends in glass size include the increasing popularity of double spirit measures, large glasses for cocktails, and the increasing use of beer and cocktail pitchers.

Several trends and innovation in vessel design and shape for use in licensed premises are described, driven by reported consumer preferences or to appeal particularly to male or female drinkers.

The data on changes in vessel size and type for home consumption over the time period are limited and come from market research reports only. These describe a trend for larger bottles of beer (increasing from 600ml in 2002 to 1-1.5 litres in 2009) sold for home consumption, intended to be used at the table in place of wine for multiple servings.

Available market research data for glassware sold for use in the home are not broken down by shape or size of glasses. Reports describe how the trends for dining at home and increased consumption of wine have raised the demand for different shape and style glasses to fit different occasions and types of wine.

2 Adjustment factors: development and application to survey data, 1990-2005

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2.1 Introduction

This part of the report describes the development of the methodology for retrospective adjustments of existing survey data, and their implications for estimates at two data points, 1995 and 2000, and further considers the implications for a full-scale study (objectives c to e as outlined in 1.1.2). The methods and findings from the mapping element of the study (objectives a and b) are described in Part 1: Mapping the key changes in alcohol strength, standard measures, glass size and shape, 1990-2012.

2.1.1 Methodology

The focus of this part of the report is alcohol consumption in England across the period between 1990 and 2005. As described below, in 2005 the Office for National Statistics (ONS) carried out a review of survey estimates of alcohol consumption, and as a result revised the method by which survey data on drinks consumed was converted into units of alcohol (Goddard 2007).[66] This revised method was applied to government surveys such as the General Household Survey (GHS) and the Health Survey for England (HSE) from 2006.

This report uses the market data presented in Part 1, supplemented by data from surveys between 1989 and 2010, to estimate changes in the alcohol strength[67] of beer and wine between 1990 and 2005. In addition it reviews the feasibility of tracking changes in the average size of beer servings and wine glasses across the same period. These estimates of strength and volume have been used to calculate the average alcohol content of drinks across the period. These calculations have been applied to GHS data to produce revised estimates of consumption among adults in England.

Although the consumption estimates shown here are for England, the information used to derive the conversion factors comes from a number of sources, based on varying geographic areas, for example England and Wales (Goddard 1991) or the United Kingdom (data from the British Beer and Pub Association cited above in Part 1).

The calculations have been made for beer[68] and wine consumption only. There are insufficient data to produce improved estimates of the consumption of spirits, fortified wines or alcopops.[69]

[66] These revisions are referred to throughout as taking place in 2006, since that was the first year that data were published showing the new conversion factors. The 2006 survey was analysed and reported in 2007 and much of the supporting work underlying the revisions actually took place in 2007.
[67] Expressed as % ABV or the percentage of alcohol by volume.
[68] Including shandy and cider.
[69] Existing estimates of spirit consumption are probably too low. Spirits drunk in domestic and other informal settings are not usually served in standard measures, so the size of a drink is difficult to estimate, although likely to be larger than the standard 25ml. Additionally, since 1994, licensed premises have the option of serving spirits in multiples of 35ml, although there is no evidence of how many do so.

For wine a single conversion factor has been calculated for each year. The approach is more complicated for beer. For surveys between 1990 and 1997, a single conversion factor for each year has been applied to all beer consumption. Although there is some evidence to suggest that the types and strengths of beer drunk vary with age, sex and other factors,[70] there is insufficient data to reflect this in these models. The models for beer from 1998 onwards reflect differences between normal strength and strong beers and between draught and canned or bottled beer, but otherwise do not reflect differences in the patterns of beer drinking between groups.[71]

Estimates of the unit strength of individual drinks are generally calculated to one decimal place, unlike previous survey estimates which converted the alcohol content of drinks to the nearest 0.5 units. This rounding was justified on the grounds that unrounded multipliers would imply a level of accuracy that the data did not support (Goddard 2007). This is undoubtedly so; on the other hand, the rounding leads to unnecessary error, for example the systematic underestimation of the alcohol content of wine (see section 2.3.2.2 below).

Where the evidence is insufficient to suggest changes to existing assumptions, these are kept.

2.1.2 Structure of Part 2

This report reviews the methodology used to estimate alcohol consumption from government surveys since 1990. It summarises the evidence available about alcohol content and container size for beer (including cider) and wine between 1990 and 2005. For each type of drink it describes the method used to calculate the revised estimates of alcohol consumption. Finally it applies the revised conversion methods to four GHS data sets from the period: 1990-1, 1994-5, 2000 and 2005. The differences in estimated average weekly alcohol consumption are presented and discussed.

2.2 Measuring alcohol consumption from survey data

2.2.1 Sources of survey measures of alcohol consumption

Large-scale social surveys have been use by government to measure alcohol consumption since the late 1970s. Official statistics across this period have principally been based on the General Household Survey (GHS).[72] This and other government-funded surveys use reports of actual drinking, converted into units of alcohol[73], to estimate drinking in an average week and on the day in the previous week when most alcohol was drunk. These estimates are reported not just as average (mean) consumption, but also as estimates of the proportions of men and women drinking above recommended levels.

As its name suggests, the GHS is a large omnibus survey that collects data about a range of behaviours across the population. A major aim of the survey has been to track those behaviours over time and comparability across surveys has been a priority.

[70] See Chapter 8 of Goddard (1991).

[71] Given the complexity of survey measures of beer consumption since 1998, it is probably an over-simplification to describe the process of calculating alcohol content of drinks of beer as a formula, as expressed in objective c) of this study. The authors are confident, however, that the conversion methodology is robust.

[72] Latterly known as the General Lifestyle Survey or GLF.

[73] A unit of alcohol is equivalent to 10 ml of pure alcohol.

In the mid-2000s, policy makers raised questions about whether these estimates accurately reflected the alcohol content of drinks (Cabinet Office 2004). These doubts reflected changes in the alcohol market, in particular the perception that the average alcoholic strength of beers and wines had increased in recent years, and that the size of wine glasses (at least those used by licensed premises) had increased.

As a result of these questions, the way the actual drinks reported by survey respondents were converted into units of alcohol changed (Goddard 2007). The changes were implemented prospectively; the discontinuity with previous estimates was indicated by showing estimates for both the original and revised methods in 2006 (Health and Social Care Information Centre 2012).

2.2.2 Survey measures of alcohol consumption

The GHS measured alcohol consumption every other year until 1996. The questionnaire originally covered five categories of drink: shandy; beer, lager, stout, cider; spirits or liqueurs; sherry or martini; and wine.[74] Low alcohol and non-alcoholic drinks were explicitly excluded. For each category, respondents were first asked how often in the last 12 months they had drunk this type of drink (in categories ranging from 'almost every day' to 'once or twice in the year'). They were then asked how much of that type of drink they usually drank on any one day. For shandy and beer, respondents were asked to specify the quantity in half pints; for the latter category, respondents could also specify large cans, small cans or bottles – these were converted into half pint equivalents for the purposes of analysis. All other drinks were coded in glasses, although the estimated size of these varied.

In 1996, alcopops were added, counted in bottles.[75] In 1998, the beer category was split into two categories and the approach to estimating container size changed. From 1998, questions on alcohol consumption were included in the GHS every year (Robinson and Lader 2009).

From 2007, the size of wine glass was specified in three categories: small (125ml), medium (175ml) and large (250 ml).

Other government-funded surveys have also collected data on alcohol consumption. Since the 1990s, the Health Survey for England and the ONS Omnibus surveys used similar methodologies. Other government surveys, for example, the Adult Psychiatric Morbidity Surveys, measure alcohol consumption in brief, with a focus on alcohol misuse.

A survey of drinking in England and Wales carried out by the OPCS in 1989 (Goddard 1991) collected data about drinking in more detail than the GHS and will be referred to below.

2.2.3 Calculating alcohol intake from drinks consumed

Detailed survey data on drinks consumed are used to estimate alcohol consumption in an average week: a multiplier is calculated from the reported frequency of drinking and applied to the usual day's consumption. This is known as the 'quantity-frequency' method of estimating consumption.

[74] From this point these categories will be referred to in brief as 'shandy', 'beer', 'spirits', 'fortified wine' and 'wine'.

[75] The term 'alcopops' used in survey questionnaires and reports covers the category also known in the trade as RTDs (ready-to-drink) or high-strength pre-mixes (see Stead et al 2012).

In 1998, an alternative measure of consumption was introduced. Men and women who had drunk alcohol in the last week were asked on which day they had the most to drink, and how much they had drunk on that day.

Until 1998, similar conventions were used to estimate the alcohol content of drinks. Each standard drink – a pint of shandy, a half pint of beer, a glass (single measure) of spirits, a glass of fortified wine, a glass of wine – were each assumed to be equivalent to one unit of alcohol.[76] The size and strength of drinks represented by these assumptions can be summarised as follows:

- Shandy: ½ pint beer etc., 3.5% ABV beer, plus ½ pint of non-alcoholic mixer;
- Beer: ½ pint of beer, lager, stout, cider, 3.5% ABV;
- Spirits: single measure (25ml), 40% ABV;
- Fortified wines: small glass (50ml), 17% ABV;
- Wines: glass (125ml), 8% ABV.

Otherwise, the volume of beer drunk in cans or bottles was estimated and the unit equivalent estimated accordingly.

These conversion factors were based on the sensible drinking advice first formulated by the Royal College of Physicians and endorsed by the Department of Health in 1995 (Department of Health 1995). They had the merit of being simple and easy to understand. But even in 1990, it is likely that they underestimated consumption to some extent (Goddard 1991).

From 1996, alcopops were included in the questionnaire and assumed to be equivalent to 1.5 units per bottle. From 1998, beers were classified as either normal strength or strong beer. The assumed alcohol content of normal strength beers remained the same, but strong beers were estimated to be equivalent to 1.5 units for a half pint, 2.25 units for a large can. The estimate for pints of shandy was doubled by virtue of including it in the normal-strength beer category.

In the early 2000s, official advice began to reflect the real complexity of the drinks market. In turn, survey assumptions about the alcoholic content of drinks were revised, to reflect changes over time in the alcoholic strength of beers and wines and an increase in the average size of wine glasses used in licensed premises.[77] The impact of these changes was greatest for wine and strong beers. There was also a limited impact for regular beers. Table 2.1 shows the original (pre- and post-1998) conversion factors and the revised factors first applied to GHS data in 2006 (Robinson and Lader 2009).

[76] The alcohol content of a single drink is calculated by multiplying the quantity in millilitres by the strength expressed as % ABV, divided by 1000. Thus, a 175ml glass of 13.5% ABV wine contains 2.4 units of alcohol. Half a pint is equivalent to 284ml.

[77] The rationale for the changes and their impact on estimates is discussed in Goddard (2007)

Table 2.1 Original and revised methods used by the General Household Survey to estimate the alcoholic content of drinks				
Type of drink	**Quantity**	**1990 equivalent**	**1998 equivalent**	**2006 equivalent**
Shandy	½ pint	0.5 units	1 unit	1 unit
Normal strength beer, lager, stout, cider (includes shandy from 1998)	½ pint	1 unit	1 unit	1 unit
	small can (small bottle from 2007)	1 unit per half pint	1 unit	1.5 units
	large can (large bottle from 2007)	1 unit per half pint	1.5 units	2 units
	bottle	1 unit per half pint	1 unit per half pint	1.5 units per half pint
Strong beer, lager, stout, cider	½ pint	n/a	1.5 units	2 units
	small can (small bottle from 2007)	n/a	1.5 units	2 units
	large can (large bottle from 2007)	n/a	2.25 units	3 units
	bottle	n/a	1.5 units per half pint	n/a
Wine	glass (size not specified)	1 unit	1 unit	2 units
	small glass (125ml)	n/a	n/a	1.5 units
	medium glass (175ml)	n/a	n/a	2 units
	large glass (250ml)	n/a	n/a	3 units
	bottle (750mls)	6 units	6 units	9 units
Spirits	glass (25ml)	1 unit	1 unit	1 unit
Fortified wine (sherry, martini etc.)	glass	1 unit	1 unit	1 unit
Alcopops	bottles	n/a	1.5 units	1.5 units

Sources: ESDS Data Archive, Goddard 2007

The impact of the 2006 changes increased estimates of average weekly consumption in England from 15.2 units to 18.6 units for men and 6.8 units to 9.9 units for women (Health and Social Care Information Centre 2012). This was equivalent to increases in consumption estimates of 22% for men and 46% for women; the difference was due to the relatively large proportion of women's alcohol intake that is accounted for by wine.

2.2.4 Shortcomings of using survey data to estimate alcohol consumption

Surveys are an effective means of collecting data about alcohol consumption from the general population, but they have limitations. Over time, there has been consistent evidence that each year HMRC collects duty on significantly higher quantities of alcohol within the United Kingdom than can be accounted for by survey estimates of consumption across the population (Goddard 2001, Meier, Meng, Holmes et al 2013).

Before considering whether it is possible to improve the accuracy of the estimates of alcohol consumption produced by the GHS between 1990 and 2005, it is worth briefly summarising some of the ways in which surveys of the general population are likely to underestimate alcohol consumption.[78]

[78] There is a general consensus that systematic overestimation is not a problem.

- Sample coverage: the GHS was a survey of private households, although unlike other such surveys it did include students in halls of residence. It did not cover those living in other institutional settings, for example the homeless and those in hostels.
- It is likely that heavy drinkers are under-represented in surveys.
- There is a body of evidence indicating that questionnaire design is fundamental in the measurement of alcoholic intake, and the method used by the GHS is likely to measure less drinking overall than, for example a drinking diary which asks respondents to record consumption in detail as it happens (Boniface and Fuller 2012).
- Accuracy of recall: respondents may not be able to accurately remember the amount they drink, particularly in informal settings where drinks are served in non-standard measures (including settings where drinking is not in discrete servings but when glasses are 'topped up').
- Deliberate under-reporting is believed to be less common than poor recall, although this may be a factor, particularly when data is collected by an interviewer rather than in a confidential self-completion mode.
- 'Satisficing': the process by which respondents fit their real experience to the questions they are asked. For example, someone who shared a bottle of wine with two friends may use the working assumption that each drank a third of the bottle, although this may not have been so. Accounts of 'usual' behaviour, as used in the quantity-frequency measures of average weekly consumption, are more vulnerable to this than descriptions of behaviour on a specific occasion. For example, someone who has a pint of beer on most days of the week and then drinks considerably more on Fridays and Saturdays is likely to describe the smaller amount as their usual daily intake.
- The quantity-frequency method of estimating consumption does not reflect untypical drinking, for example on holiday or at Christmas. Measures of drinking in the last week are also likely to underestimate drinking at these times.

This analysis is not designed to compensate for any of these sources of error. It is designed to address errors caused by the assumptions made in converting survey responses into consumption estimates, including the following:

- originally flawed assumptions about the size and strengths of the drinks reported by survey respondents;
- changes over time, specifically in the alcoholic strength of drinks and the customary sizes of glasses or other containers in which they are served;
- the impact of rounding or other simplified conversion factors.

2.3 Revised methodology

2.3.1 Beer

2.3.1.1 Background

As demonstrated in Part 1 of this report, the range of strengths of beers, lagers and ciders on sale is very broad: from less than 3% ABV to more than 10%. These drinks are also sold in varying containers, on draught, usually in pints or half pints, as well as in bottles and cans of different sizes, usually between 330ml and 500ml.

From 1990 to 1997, survey estimates of beer consumption assumed that half a pint of beer was equivalent to one unit of alcohol. This was also the definition of a standard drink used in advice about sensible drinking in the 1980s and 1990. Though not explicitly stated, this assumed 3.5% ABV.

In 1989, OPCS carried out a survey of drinking in England and Wales (Goddard 1991). This collected data on drinking across all seven days of the last week. Although the framework questionnaire was similar to that used by the GHS, it included more detail; for example, as well as the amount of beer, lager and cider they had drunk on each day, respondents were asked for the type of drink and brand information. The actual ABVs of these drinks were recorded using a detailed coding frame.

When these specific ABVs were taken into account, the alcohol content of the beer, lager and cider consumed across the week increased by an average of 1.77 units for men and 0.15 units for women. This represented an increase of 12% for men, 6% for women. There were also variations by age.

There are two conclusions to be drawn from this. First, within the survey categories covered by shandy, cider and different types of beer, by 1990, the average strength of beer and cider was probably closer to 3.9% ABV, and half a pint was likely to be equivalent to at least 1.1 units.

Second, the variation in drinking patterns and preferences is such that these 'average' strengths and alcohol contents do not vary uniformly across groups. Without information about the nature of these variations, any adjusted estimates are likely to be too low for some groups, too high for others. This information has not been collected by surveys and is not available from other sources between 1990 and 2005, and so adjusted estimates at a whole population level are likely to be more accurate than estimates for subgroups.

2.3.1.2 Alcoholic strength of beer, lager and cider between 1990 and 2005

Estimates from 1990 to 1998

Between 1990 and 1997, the GHS estimated the average strength of beer, lager, stout and cider as 3.5% ABV (see Section 2.3.1.1 above). In 1998, the GHS and other government surveys added strong beers, lagers, stouts and ciders as a separate category. This was defined as beers of 6% ABV and above, although the conversion to 1.5 units per half pint implied an ABV of 5.3%. For beers of lower ABV, the assumption of 3.5% stayed constant until 2007, although shandy was now included as equivalent to other beers.

As demonstrated in Part 1, accurate detailed and reliable estimates of the breakdown of the beer and cider market between 1990 and 2005 are not available. The market data are incomplete, and complicated by the differences between on-trade and off-trade sales, that is sales in licensed premises such as pubs, bars, and restaurants, as opposed to sales in shops, supermarkets and other retailers for consumption elsewhere. For example, data are available across the period for different types of beer sold in licensed premises; these are divided into different categories according to type, strength and whether draft or packaged. But there are no corresponding data for off-trade sales, although there are data for the split between on-trade and off-trade sales.

The British Beer and Pub Association (BBPA) have calculated estimates of the average strength of beer from 1994, based on data from HMRC estimates.[79] These are shown in Part 1, Table 1.8. This includes low alcohol beers, and does not include cider.

These estimates can be used to calculate conversion factors for the GHS data between 1994 and 1997. There are no equivalent BBPA estimates for earlier years. Given the relatively small degree of change after 1994, it is not unreasonable to assume a similar stability between 1990 and 1994. The 1989 survey of drinking (Goddard 1991) implied an average ABV of 3.9% for beer (section 2.3.1.1, above).

The GHS, along with other surveys, includes cider in the beer category. Part of the detailed collection of data in the 1989 survey indicated that cider made up 3% of drinking in this category (Goddard 1991). Although evidence suggests that the ABV of cider is probably slightly higher than beer, its impact on the average ABV of the category as a whole is probably marginal.

Table 2.2 presents estimates for the average ABV of beer, lager, stout and cider during the period when these were measured as a single category. Those for 1994 to 1997 are the BBPA estimates for the UK, quoted in Part 1. The estimate for 1990 assumes that in 1989 the average strength of beer was 12% higher than the survey assumption of 3.5% ABV, and projects a steady rate of increase each year until 1994.

Table 2.2 Estimated ABV of beer: 1990-1997

Year	1990	1991	1992	1993	1994	1995	1996	1997
Estimated ABV (%)	3.95	3.97	4.00	4.02	4.05	4.08	4.09	4.10
Multiplier	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2

Source (1994-1997): Part 1, Table 1.8

Estimates from 1998 to 2005

The GHS questionnaire was revised in 1998 and from that year beers were split into two categories. This poses two questions. What should be assumed as the ABV of strong beer? And what should be assumed for normal strength beer, given that the stronger beers are not in the category, and shandy is?

As noted above, the GHS and other survey estimates from 1998 to 2005 effectively assumed an ABV for the strong beer category of 5.3%, although the category was defined as 6% and above. The cut-off of 6% does not reflect the categories used in market analysis, where the threshold between standard and premium beers is given as 4.3%.

[79] HMRC collects this information because excise duty on beer is paid in proportion to its alcohol content.

In the absence of more persuasive data it may be reasonable to apply the estimate used in the 2006 revisions of an ABV for strong beer of 6.5% (Goddard 2007). This will be applied uniformly across the period 1998 to 2005, but will not be rounded. This analysis therefore assumes that half a pint of strong beer is equivalent to 1.8 units. This is more than the assumption of 1.5 units used from 1998 until 2005, but less than the 2.0 units assumed by the revised method.

Most beer, lager and cider drunk continued to be classified as normal strength, and after 1998 this category also included shandy. This suggests that the average ABV for this category should be lower than the assumptions for years up to 1997.

Table 2.3 shows the BBPA UK estimates for all beers, including normal strength and strong beers, but excluding cider between 1998 and 2005. There was little variation across the period.

Table 2.3 Estimated ABV of beer: 1998-2005

Year	1998	1999	2000	2001	2002	2003	2004	2005
Estimated ABV (%)	4.15	4.12	4.18	4.17	4.16	4.17	4.22	4.17

Source: Part 1, Table 1.8

In considering the likely strength of all drinks in the normal strength category, it is necessary to account for the impact of shandy (weaker than beer), and cider (on average stronger than beer), as well as the impact of excluding drinks of 6% ABV and above.

In 1997, the last year when shandy was measured as a separate category, 6% of respondents drank shandy in the previous week, compared with 41% of respondents who drank beer. Mean consumption on a usual day was 2.1 half pints of shandy, 4.6 half pints of beer. In other words, shandy represented a relatively small proportion of alcohol intake when compared with beer. As noted above, cider also accounts for a small proportion of drinks within this category. For the purpose of this analysis, it is assumed that the inclusion of shandy and cider in the normal strength beer category cancel each other out.

As with other conversion factors, the 2006 method rounded assumptions for the alcohol content of different types of normal strength beer. For canned and bottled beer, the assumptions are in line with the actual content. For draught beer (half a pint, 4% ABV) the assumption of 1.0 unit is lower than the actual content, 1.1 units.

For surveys after 1998 the ABV assumptions proposed by the 2006 ONS methodology have been used. The data showed whether beer consumption was recorded as half pints or in bottles or cans (more than one was possible). The 2006 method assumes that half pints were 4% ABV, while canned and bottled beer were 4.5% ABV. These assumptions can be used to estimate ABV for the normal strength beer category on a year by year basis; this will be the product of the amount drunk and the revised estimate of alcohol content. For example in 2000, when about four-fifths of recorded consumption of normal strength beer was recorded as half pints, the average ABV of normal strength beer estimated by this method was 4.10%.

2.3.1.3 Quantity assumptions for beer, lager and cider between 1990 and 2005

This analysis will not adjust for container size. From 1990 to 1997 the GHS estimated quantity in multiples of half pints, guided in the case of cans and bottles by information collected by the interviewers. From 1998, the assumption was that the size of an average small can was 330ml, of an average large can 440ml. The brand of bottled beer was recorded and the size estimated accordingly. No additional information is available to improve the estimates of beer can size.

2.3.2 Wine

2.3.2.1 Background

From 1990 to 2007, survey estimates of wine consumption assumed that one glass of wine was equivalent to one unit of alcohol. This was also the definition of a standard drink used in advice about sensible drinking in the 1980s and 1990. Though not explicitly stated, this assumed a 125ml glass of 8% ABV wine.[80]

Even in 1990, this was likely to be a considerable underestimate. The 1989 survey of drinking suggested that the ABV of wine was likely to be at least 11%. In Part 1, changes in the wine market in Britain since 1990 were tracked. The main trend was a shift from traditional European wines to wines imported from the new world (largely South America and Australasia). In reaction to this, European wine makers also began making wines using comparable techniques. This new style of wine was likely to be higher in alcohol content.

A parallel trend was observed between 1990 and 2005: the size of glass in which wine was served in licensed premises changed from a norm of around 125ml in 1990 (no precise estimates exist and wine glass content was not regulated until 1995). As noted in Part 1, by the end of the decade, serving wine in measures of 175ml and 250ml was commonplace in licensed premises.[81]

(Note that the size of a wine glass and the volume of its contents are not necessarily equivalent. Unlike beer glasses, it is not universally the norm to fill a wine glass to the brim. References to wine glasses in this report should be taken to refer to the volume of the contents, not the size of the vessel.)

As with beer drinking, the trends in wine consumption are generally agreed, but there is little evidence about the precise degree and timing of the changes.

[80] Alternatively a smaller glass of a stronger wine or a larger glass of a weaker wine, though the latter is less credible.

[81] The size of a wine glass and the volume of its contents are not necessarily linked, but content has been regulated since 1995. Unlike beer glasses, wine glasses in most settings are not filled to the brim, and the enjoyment of fine wine is arguably prevented if this is done.

2.3.2.2 Alcoholic strength of wine

The change in wine ABVs has included an observed widening of the range of strengths, from 9% to 13% in the late 1980s (Goddard 1991) to 9% to 15% in 2006 (Goddard 2007). As with beer, the BBPA have provided estimates of the average ABV of wine drunk in the UK since 1990, shown in Part 1, Table 1.10 and reproduced in Table 2.4 below.

Table 2.4 Estimated ABV of wine: 1990-2005

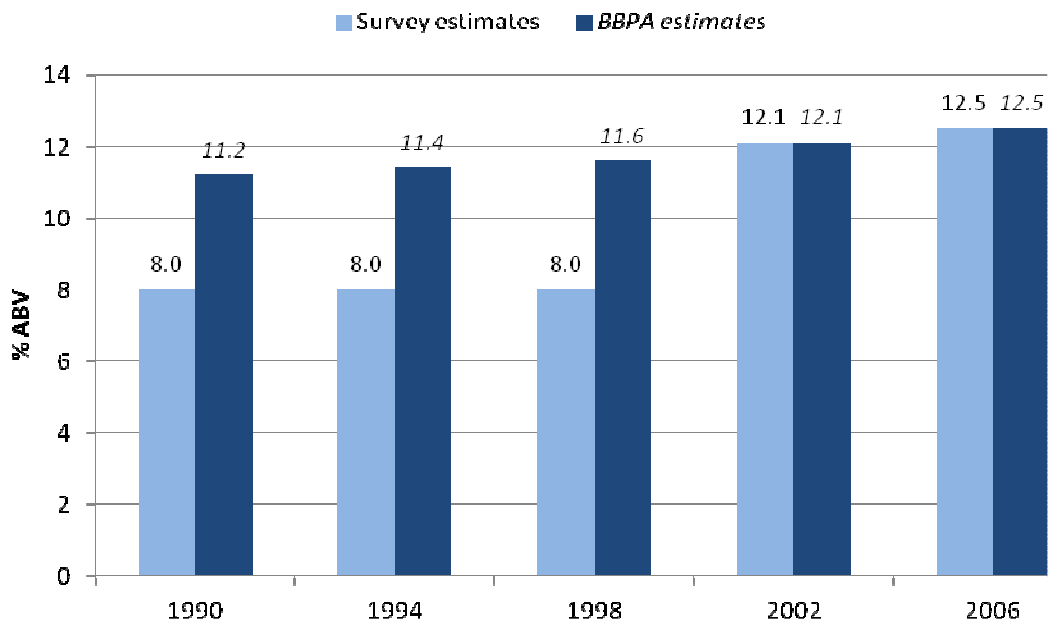
Year	1990	1991	1992	1993	1994	1995	1996	1997
Estimated ABV (%)	11.15	11.20	11.25	11.30	11.35	11.40	11.50	11.50
Year	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Estimated ABV (%)	11.55	11.70	11.84	11.99	12.14	12.28	12.43	12.48

Source: Part 1, Table 1.10

There was a gradual increase in the average ABV of wine throughout the 1990s, which became more pronounced in the early 2000s, before levelling out in the late 2000s.

Figure 2.1 illustrates how this diverges from the assumptions of surveys across the same period, shown at four-yearly intervals.

Figure 2.1 Survey and BBPA estimates of the ABV of wine 1990-2006



2.3.2.3 Wine glass size

In the absence of contrary evidence, this analysis starts with the assumption that the usual wine glass in 1990 was 125ml. There appears to be a general consensus that average servings, at least on licensed premises, increased over the subsequent 15 years. At first sight, as demonstrated in Part 1, there is anecdote but little evidence about how this change came about. Furthermore, discussions of change are largely concerned with the licensed trade: pubs, bars and restaurants. There is no substantive evidence about how wine has been served in domestic and other informal settings.

As part of the process that led to the 2006 revisions in survey estimates, the ONS Omnibus survey in early 2007[82] asked respondents who had drunk wine for glass size. The findings suggested that by this time the average wine glass contained 169ml, rounded to 170ml (Goddard 2007).

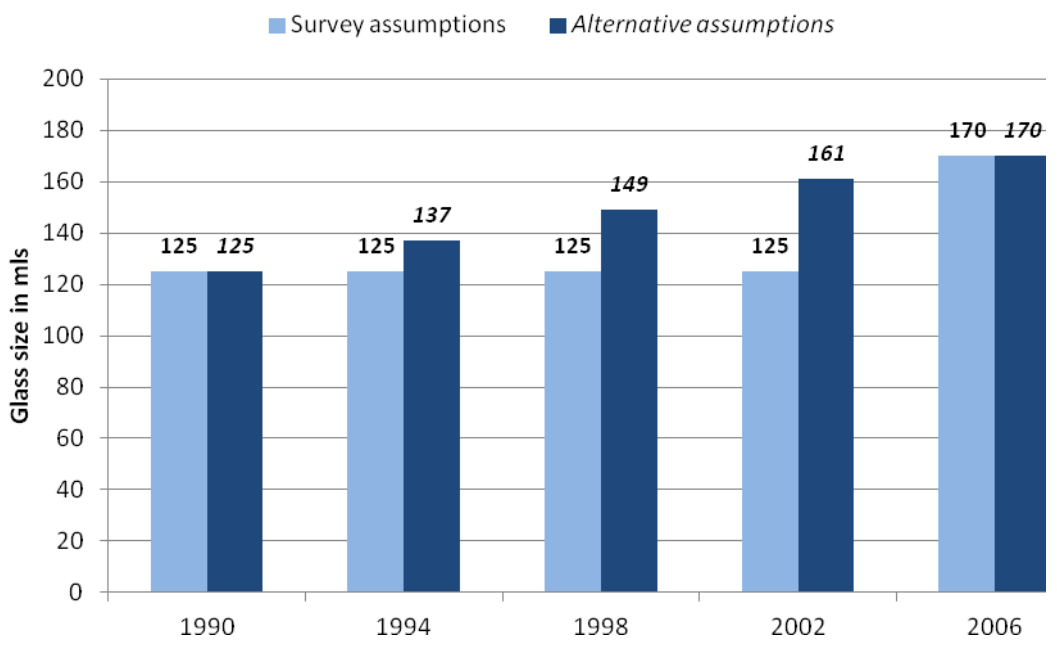
The Omnibus is a relatively small scale study. The Health Survey for England introduced questions specifying glass size in its 2007 questionnaire. The three choices were small glass (125ml), medium glass (175ml) and large glass (250ml). Respondents were also given the option of reporting their consumption in bottles or part bottles. Those who reported drinking wine with reference to the number of glasses did so in the ratio of 20:61:19 (men) and 26:59:16 (women). Unsurprisingly, those who drank more were more likely to do so in larger glasses. However, the overall consumption recorded was very similar to that recorded using a standard glass size of 170ml for all (Fuller 2008).

Table 2.5 and Figure 2.2 illustrate the effect of assuming a constant change from 125ml in 1990 to 170ml in 2006. The change is unlikely to have occurred in quite this way, but there is no evidence to support an alternative pattern of change.

Table 2.5 Estimated volume of average wine glass (ml): 1990-2005

Year	1990	1991	1992	1993	1994	1995	1996	1997
Wine glass (ml)	125	128	131	134	137	140	143	146
Year	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Wine glass (ml)	149	152	155	158	161	164	167	170

Figure 2.2 Survey and alternative assumptions of average wine glass size: 1990-2006



[82] See note 66 to Section 2.1.1 to explain the apparent anomaly in dating.

2.3.2.4 Impact of revised estimates of wine strength and glass size

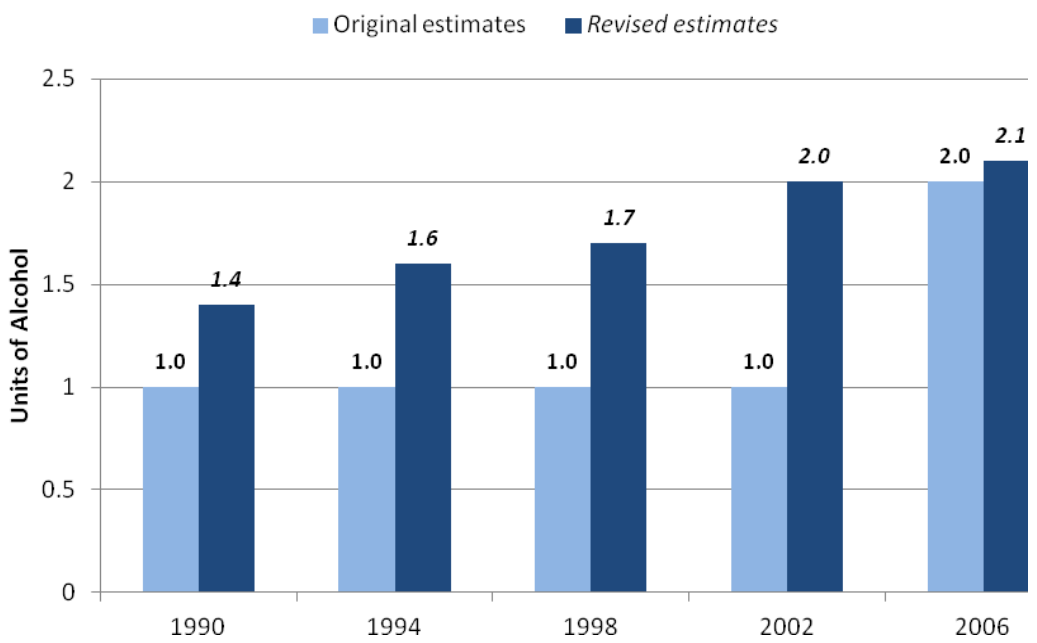
Table 2.6 and Figure 2.3 show the revised estimate of the content of a glass of wine, the product of the revised assumptions about strength and volume. Because the original assumption was that a glass of wine is equivalent to one unit, the revised estimate is the multiplier.

Table 2.6 Estimated alcohol unit content of average wine glass: 1990-2005

Year	1990	1991*	1992	1993*	1994	1995*	1996	1997*
Units of alcohol	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7
Year	1998	1999	2000	2001	2002	2003	2004	2005
Units of alcohol	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.1

*GHS data not available.

Figure 2.3 Original and revised estimates of the alcohol content of an average glass of wine (units of alcohol): 1990-2006



2.4 Impact and limitations of the revised estimates

2.4.1 Impact of the revised estimates

Section 2.3 of this report has described three separate revisions to the existing estimates of alcohol intake based on survey data between 1990 and 2005.

For measures of beer and shandy intake between 1990 and 1997, a single conversion factor has been calculated, based on the estimates provided by the BBPA.

For measures of beer and shandy intake between 1998 and 2005, the assumptions about ABV used by the GHS from 2006 onwards have been used. Where available, bottle size has been taken into account.

For measures of wine intake between 1990 and 2005 a multiplier has been calculated for each year, based on the estimates of ABV provided by the BBPA and estimates of average glass size based on an assumed average of 125ml in 1990 increasing consistently to 170ml in 2005.

Unit equivalents are calculated to one decimal place and, unlike the 2006 revisions by ONS, are not rounded to the nearest 0.5.

Table 2.7 illustrates the impact of these revisions on the original estimates of alcohol consumption between 1990 and 2005. The revised methods have been applied to four GHS data sets covering the period: 1990-1991; 1994-5; 2000; and 2005. Note that the categories reflect the change in the survey questionnaire in 1998, and that totals include all types of alcohol.

Table 2.7 Original and revised estimates of average weekly alcohol consumption: 1990 to 2005

1990-1	**Original estimate (units of alcohol)**	**Revised estimate (units of alcohol)**	**Difference (units of alcohol)**	**Difference (percentage change)**
Shandy	0.3	0.4	<0.1	+11%
Beer, lager, stout, cider	7.0	7.7	+0.7	+11%
Wine	1.9	2.7	+0.8	+40%
Total alcohol intake	10.8	12.1	+1.4	+13%
1994-5	**Original estimate (units of alcohol)**	**Revised estimate (units of alcohol)**	**Difference (units of alcohol)**	**Difference (percentage change)**
Shandy	0.5	0.6	+0.1	+20%
Beer, lager, stout, cider	6.3	7.6	+1.3	+20%
Wine	2.3	3.7	+1.4	+60%
Total alcohol intake	10.4	12.8	+2.4	+23%
2000	**Original estimate (units of alcohol)**	**Revised estimate (units of alcohol)**	**Difference (units of alcohol)**	**Difference (percentage change)**
Normal strength beer, lager, cider and shandy	5.8	6.6	+0.9	+15%
Strong beer, lager, cider	0.6	0.7	+0.1	+23%
Wine	2.6	4.7	+2.1	+80%
Total alcohol intake	11.9	15.0	+3.2	+26%
2005	**Original estimate (units of alcohol)**	**Revised estimate (units of alcohol)**	**Difference (units of alcohol)**	**Difference (percentage change)**
Normal strength beer, lager, cider and shandy	5.0	6.1	+1.1	+22%
Strong beer, lager, cider	0.5	0.6	+0.1	+22%
Wine	2.8	6.0	+3.1	+110%
Total alcohol intake	10.9	15.2	+4.3	+40%

The impact of the revisions is considerable. For beer and wine, the evidence leads to higher conversion factors than previously used, even in 1990.

For beer, cider and shandy, the assumed alcoholic strength in 1990 is around 11% higher in the revised estimates. A fairly small change in assumed ABV (from 3.95% to 4.05%) between 1990 and 1994 increases the estimates for the alcohol content of beer and shandy by 20% in 1994.

The picture is more complex from 1998 onwards, when the shandy category is dropped and beers are split into normal strength and strong categories. The revisions here use the same assumptions as those used by ONS in their 2006 methodology (Goddard 2007). The ABV of normal strength beer is estimated differently according to whether it is measured in half pints (assumed to be draught beer with an ABV of 4%) or in bottles and cans (assumed ABV=4.5%). The increased difference between the original and revised estimates in 2005 when compared with 2000 is accounted for by the increased proportion of beer drunk in bottles and cans (32% and 21% respectively). Note that the conversion factors used in this analysis have not been rounded to the nearest 0.5, as ONS did. Consequently, the conversion factors shown here are slightly higher for normal strength beers, slightly lower for strong beers when compared to the ONS conversion factors (see section 2.3.1.2).

As with beer, the alcoholic strength of wine in 1990 has been assumed to be higher than originally estimated. The discrepancies for wine are greater in degree than for beer, and the increase in estimated alcohol consumption as a result of these revisions consequently rises from 40% in 1990 to 110% in 2005. As with normal strength beer, not rounding conversion factors to the nearest 0.5 also has an impact, so that these revisions estimate the alcohol content of a glass of wine in 2005 to be 2.1 units, compared with the 2.0 units used by the 2006 ONS revisions (Goddard 2007).

The revised estimates of average weekly alcohol consumption increase from an extra 13% in 1990 to 40% in 2005. This increase reflects the widening discrepancy between the original assumptions about the alcoholic content of drinks of beer and wine and the evidence-based assumptions presented here. The changing pattern of drinking also plays a part. Specifically, using the original method of estimation, wine accounted for 18% of total consumption in 1990 but this had increased to 26% by 2005. (Using the revised method, the equivalents are 22% and 39% respectively.)

2.4.2 Impact of revised estimates on drinking patterns by different groups

The 2006 revisions had varying impacts on different groups according to age and sex (Goddard 2007). As the adjustment for wine was considerably higher than for beer, estimates for women's consumption increased proportionately more than estimates for men's consumption. These revisions have had a similar effect.

Table 2.8 shows the impact of the revised estimates on mean weekly consumption across three age groups for men and women.

Table 2.8 Average weekly consumption, using the original and revised methods of estimation, by age and sex: 1990 to 2005				
1990-1	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	20.0	17.3	9.7	16.8
Men: new method	22.3	19.4	10.7	18.7
Difference (percentage change)	+11.5	+12.3	+10.3	+11.8
Women: old method	7.0	5.8	2.9	5.6
Women: new method	8.1	6.8	3.1	6.4
Difference (percentage change)	+15.5	+16.3	+10.0	+15.2
1994-5	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	18.2	16.4	10.6	15.8
Men: new method	22.1	20.1	12.5	19.2
Difference (percentage change)	+21.6	+22.9	+18.5	+21.8
Women: old method	7.2	6.1	3.5	5.9
Women: new method	9.0	7.8	4.1	7.3
Difference (percentage change)	+25.4	+27.1	+15.2	+24.8
2000	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	21.5	16.5	10.9	17.1
Men: new method	25.6	20.8	13.3	21.0
Difference (percentage change)	+18.7	+25.7	+22.3	+22.6
Women: old method	10.1	6.8	3.6	7.1
Women: new method	12.7	9.5	4.8	9.5
Difference (percentage change)	+26.0	+40.8	+31.4	+33.5
2005	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	17.6	16.9	10.5	15.8
Men: new method	22.3	23.2	14.3	21.2
Difference (percentage change)	+27.2	+37.4	+36.5	+34.0
Women: old method	8.8	6.6	3.5	6.5
Women: new method	12.1	10.7	5.4	10.0
Difference (percentage change)	+37.4	+63.9	+53.1	+52.6

Across the period, the impact on estimates of women's consumption is higher than for men's. In 1990, the estimates for women's consumption have increased by 15.2%, compared with 11.8% for men. By 2005, not only has the revised method produced greater increases in estimates, but the gap between men and women has also widened. In 2005, the revised estimate of women's consumption is 52.6% higher than the original estimates; for men the increase is 34%.

There is also variation by age, with the greatest impact on the middle age group of the three shown: adults aged between 35 and 64 years, again more so among women.

Table 2.9 shows how these increases affect the estimates of adults drinking above the weekly thresholds of 21 units for men, 14 units for women.

Table 2.9 Proportions of adults drinking above weekly recommendations, using the original and revised estimates of average weekly alcohol consumption, by age and sex: 1990 to 2005

1990-1	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	33	28	14	27
Men: new method	36	31	16	30
Increase (percentage points)	3	2	2	3
Women: old method	14	12	5	11
Women: new method	17	15	5	13
Increase (percentage points)	3	3	1	2
1994-5	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	31	28	17	27
Men: new method	38	34	20	33
Increase (percentage points)	7	6	3	6
Women: old method	17	14	8	13
Women: new method	22	18	9	17
Increase (percentage points)	5	4	1	4
2000	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	34	27	18	28
Men: new method	39	35	23	34
Increase (percentage points)	5	8	5	7
Women: old method	25	15	7	17
Women: new method	32	23	11	23
Increase (percentage points)	6	7	3	6
2005	**16 to 34 years old %**	**35 to 64 years old %**	**65 years old and over %**	**Total**
Men: old method	29	26	16	25
Men: new method	35	37	23	34
Increase (percentage points)	6	11	8	9
Women: old method	20	15	7	15
Women: new method	29	28	14	25
Increase (percentage points)	9	13	7	10

The pattern of difference across groups is less pronounced. Over time, the additional proportion drinking above these levels increases from 3% of men and 2% of women in 1990 to 9% of men and 10% of women in 2005. There is more variation by age, and the pattern changes over time. In 1990, estimates for younger drinkers increase slightly more than those for older men and women. By 2005, the greatest impact is on men and women in the middle age group.

2.4.3 Limitations

It is likely that these revised estimates are closer to actual alcohol consumption than survey estimates produced in the 1990s and early 2000s. But they are still approximations. All surveys trade off accuracy and detail of the data they collect against respondent burden (which is likely to reduce and bias response). Moreover, it is unlikely that survey respondents are able to recall precisely the size and strength of every drink taken.

Retrospective estimation, as presented here, is dependent on the information actually collected by surveys. The limitations of the GHS questionnaires are discussed throughout this report. Examples include the assumption, remedied from 2007 onwards, of a single size of wine glass; the inclusion of cider in the same category as beer; and the 1998 threshold for strong beers of 6%. In the absence of hard evidence, the assumptions underlying the analysis have been deliberately conservative; this makes it likely that the revised estimates are still on the low side.

Survey measures of alcohol generalise considerably and the accuracy of estimates based on these revisions is likely to vary across different types of drinker. Goddard (1991) used detailed information about the brands and types of beer to explore this and concluded that the strength of beer drunk varied between groups according to age and sex. Although the GHS and other surveys did collect brand data about beer, this has not been analysed and is not accessible for data sets in the period under consideration. There is no similar data for wine. Group comparisons (such as that presented in Section 2.4.2 are standard in analyses of survey data, but they do not take these differences into account.

As well as differences between drinkers, the GHS did not collect the necessary information to explore context-related variations in the size and strengths of typical drinks (for example wine drunk at home or elsewhere).

Although there is extensive data available about the drinks market from 1990 onwards, most of this is imprecise or anecdotal. This analysis has therefore been reliant on a relatively small number of sources, particularly the BBPA estimates of average beer and wine strengths as presented in Part 1. The methodology underpinning these has not been communicated in detail, although the general principles seem sound and the estimates themselves are consistent with other sources.

The revised consumption estimates here are improved not definitive: in particular, since they are restricted to beer and wine only, they do not address relative consumption levels of different types of drink.

2.5 Summary of findings

The findings here are based on the evidence presented in Part 1 of the report, as well as on information available from surveys between 1989 and 2010. This evidence has been used to estimate the actual alcoholic strength of beer (including shandy and cider) and wine between 1990 and 2005, and – in the case of wine – changes in the average glass size.

The main outcomes of the revised calculations are:

- higher estimates of alcohol consumption from 1990;
- estimates of alcohol consumption in the form of beer, cider and shandy that exceed the original estimates by between 11% and 23%;
- estimates of alcohol consumption in the form of wine that exceed the original estimates by 40% in 1990, increasing to an additional 110% in 2005;
- estimates of average weekly consumption of all drinks exceeding the original estimates by 13% in 1990, increasing to an additional 40% in 2005;
- the impact of the revisions is greater on estimates for women than for men.

2.6 Recommendations

The changes in alcohol strength and serving size need to be addressed in ongoing epidemiological monitoring and surveillance. Failure to address these issues may throw into doubt current estimates of the burden of disease in the UK, levels of compliance with low risk drinking guidelines, and the impact of different policies on population drinking and harm, and may introduce unknown biases into social and health research on alcohol. The recommendations presented below regarding future analyses and data collection help to address these risks.

This report has focused on mean alcohol consumption in an average week with a limited exploration of the impact of the revised method on the proportions of adults drinking above the thresholds of 21 units for men and 14 units for women. The analysis could be extended to assess the prevalence of drinking at different levels among different population groups, particularly more risky drinking (50 units for men, 35 units for women).

Such an analysis should include the following:

- data on consumption patterns to identify the types of drinks consumed by different groups;
- more detailed analysis of consumption patterns by age;
- inclusion of the proportions of men who drink more than 50 units and women who drink more than 35 units per week;
- inclusion of data on the maximum consumption on a single day in the last week (collected from 1998); and
- analysis of survey data for other years across the period.

In using survey data to measure and assess the trends in alcohol consumption, there is a tension between consistency over time and reflecting a changing world.

This has been a retrospective exercise and is dependent on the survey data that has already been collected. However, it raises questions about how alcohol consumption should be calculated from survey data in future. This would involve several changes in approach:

a) The Department of Health should consider a programme of accessing market data to provide detailed and specific evidence on changes in alcohol strength, glass size and other aspects of glassware over time, and on the breakdown of alcohol sales by these variables. This may involve buying data from market intelligence agencies such as Mintel. In addition, there is scope for collaboration with the British Beer and Pub Association, who currently gather a considerable body of data about the alcohol market. This study has relied on the BBPA's estimates of the average ABV of beer and wine, and it would be useful if similar analyses could be commissioned in future, using a methodology that was both reliable and transparent.

b) Estimates of alcohol consumption based on large-scale government-sponsored surveys are well-established. The methodology used to convert drinks into units of alcohol has been reviewed once, in 2006. There needs to be critical consideration of how often such a review should take place, bearing in mind the tensions between accuracy and comparability over time. Too frequent revisions will undermine the authority of trend data; at the same time changes in the market which cause the discrepancies between actual and reported consumption need to be reflected in official statistics to ensure that surveys accurately represent the consumption they record. The 2006 review was long overdue: as this report shows, the discrepancies between the alcohol content of drinks and conversion factors used to report survey data were already apparent in 1990. These discrepancies grew more extreme during the intervening years, when the drinks market underwent considerable change. The situation may well have become more stable since. However, the work underpinning the 2005 revisions is now more than seven years old, there is a strong argument for setting up a fresh review within the next year with the aim of feeding into surveys carried out for government from 2015.

c) Similarly the methodology and questions used to measure alcohol consumption on government surveys should be reviewed to ensure that they reflect the current drinks market as understood by consumers. This includes consideration of different methodologies (e.g. yesterday recall, diaries), and additional information (e.g. whether alcohol was consumed on licensed premises or elsewhere) that could improve data quality. However, this review also needs to take into account respondent burden and backward comparability. It also needs to be appropriately resourced to allow for cognitive research into questionnaire content and wording with different types of drinker, and the acquisition and analysis of market data.

d) There is a scarcity of evidence about the size of home-poured drinks, particularly wine and spirits. Any review of survey methodology should take this into account, if necessary by commissioning new research.

e) This review did not consider drinks other than beer and wine, due to a lack of evidence. It may be possible in future to extend a similar review to spirits, alcopops and pre-mixed drinks.

This methodology could now be applied and tested in other existing data sets. The General Household Survey measures of weekly drinking were used in this report because they were collected systematically between 1990 and 2005. Other surveys may measure different things (for example daily consumption based on the highest drinking day in the past seven days). The applicability of the methodology may also need to be adapted where types and sizes of drinks are defined differently.

REFERENCES

Unless otherwise stated, GHS data and documentation has been accessed via the UK Data Archive, part of the Economic and Social Data Service.

Ambler R (2008). *Review of Wine Strengths Used in Estimating Pure Alcohol Clearances*. London: Knowledge, Analysis & Intelligence, HM Revenue & Customs; May.

Attwood AS, Scott-Samuel NE, Stothart G, Munafò MR (2012). Glass shape influences consumption rate for alcoholic beverages. *PLoS One*, 7(8): e43007.

Bender DA (2009). *A Dictionary of Food and Nutrition* (3rd edition). Oxford: OUP.

BBPA (2012a). *British Beer & Pub Association website: About Us > Membership*. Online: http://www.beerandpub.com/membership [accessed 21 October 2012].

BBPA (2012b). *Statistical Handbook 2012*. London: British Beer & Pub Association.

Boniface S, Fuller E (2012) *Drinking diary* in Craig R, Mindell J *Health Survey for England 2011: health, social care and lifestyles.* Leeds: The Health and Social Care Information Centre.

British Medical Association (BMA) (2008). *Alcohol misuse. Tackling the UK epidemic.* London: BMA Board of Science. ISBN: 978-1-905545-26-1.

Cabinet Office (2004). *Alcohol Harm Reduction Strategy for England.* London: Cabinet Office.

Collins English Dictionary (2011). 11th edition. London: HarperCollins Publishers.

Department of Health (1995). Sensible drinking: report of an inter-departmental working group. London: Department of Health.

Fuller E (2008). *Adult alcohol consumption* in Craig R, Shelton N *Health Survey for England 2007: healthy lifestyles: knowledge, attitudes and behaviour*. Leeds: The Health and Social Care Information Centre.

Goddard E (1991). Drinking in England and Wales in the late 1980s. London: HMSO.

Goddard E (2001). *Obtaining information about drinking through surveys of the general population.* National Statistics Methodology Series No. 24. London: Office for National Statistics.

Goddard E (2007). *Estimating alcohol consumption from survey data: updated method of converting volumes to units.* National Statistics Methodological Series No. 37. Newport: Office for National Statistics.

Health and Social Care Information Centre (2010). *Statistics on Alcohol: England, 2010*. Leeds: The Health and Social Care Information Centre.

Health and Social Care Information Centre (2012). *Statistics on Alcohol: England, 2012*. Leeds: The Health and Social Care Information Centre.

Meier PS, Meng Y, Holmes J et al (2013). Adjusting for unrecorded consumption in survey and per capita sales data: quantification of impact on gender- and age-specific alcohol-attributable fractions for oral and pharyngeal cancers in Great Britain. *Alcohol and Alcoholism* 48(2) 241-249.

NHS Health Scotland (2012). Monitoring and Evaluating Scotland's Alcohol Strategy: A review of the validity and reliability of alcohol retail sales data for the purpose of Monitoring and Evaluating Scotland's Alcohol Strategy March 2012 Revised May 2012.) Online: http://www.healthscotland.com/documents/5761.aspx

NHS Information Centre (2010). *Statistics on Alcohol: England, 2010*. The Health and Social Care Information Centre. ISBN: 978-1-84636-413-6.

Robinson S, Lader D (2009). *Smoking and drinking among adults, 2007. General Household Survey 2007*. Newport: Office for National Statistics.

APPENDIX 1: Search Strategy

Online searches have been conducted of trade publications/websites including:

- Caterer and Hotelkeeper (http://www.caterersearch.com)
- Harpers (http://www.harpers.co.uk)
- Off Licence News (http://www.offlicencenews.co.uk)
- The Publican's Morning Advertiser (http://www.morningadvertiser.co.uk)
- The OnTrade Preview (http://www.ontrade.co.uk)
- Justdrinks.com (http://www.just-drinks.com)
- The Drinks Report (http://www.thedrinksreport.com).

Searches were conducted in subscription databases. Searches were conducted on NexisUK, a subscription database of global online news and business information for major and emerging markets, for all available dates on the following industry categories:

- Travel, Hospitality and Tourism,
- Food and Beverage
- Manufacturing.

Searches were also conducted in Passport GMID (Global Market Information Database), a subscription database of statistical information, market reports, global forecasts and consumer lifestyle reports, for the 'Alcoholic Drinks' and 'Homewares' industries. (Owned by the Euromonitor market research company.)

Searches were conducted of UK Legislation (http://www.legislation.gov.uk) for Legislation relating to on-trade alcohol measures (1989-present); HM Treasury Archives (http://www.hm-treasury.gov.uk/home.htm) for changes to alcohol duty rates over time (archives available 1999-2012); and UK National Statistics (http://www.statistics.gov.uk/hub/index.html)/ HM Revenue and Customs (http://www.hmrc.gov.uk/ and http://www.tradeinfo.com) for archives of the Alcohol Duties Statistical Bulletin.

Online searches were conducted for UK alcohol sales data (on- and off-trade for the period 1990-present). Some information is publically available from secondary sources online (e.g. http://www.healthscotland.com/documents/6019.aspx).

Market research companies were contacted in September 2012 for further information about purchasing UK alcohol sales data (see Appendix 2 for further details): Mintel (http://www.mintel.com), Nielsen (http://www.nielsen.com/uk/en.html), and Euromonitor (http://www.euromonitor.com/).

Manual searches have been conducted of print sources including the BLRA/BBPA Statistical Handbook and the relevant alcohol and glassware industry Key Note market reports (listed in Appendix 2).

APPENDIX 2: Market Data Sources

(i) Nielsen

Nielsen and CGA Strategy collect data on alcohol retail sales. Some of the data is available from NHS Health Scotland. Nielsen retains data for a 3 year period.

Nielsen data available for the period 2005-2007 by country (Scotland; England & Wales; and Great Britain combined) for both on- and off-trade from NHS Health Scotland:

- Natural volume (1,000 Litres)
- Pure alcohol volumes (1,000 litres)
- Retail sales value (£ million)
- Natural volumes (litres per capita (pc) 16 year olds and older)
- Pure alcohol volumes (litres pc 16 year olds and older)
- Alcohol units (litres pc 16 year olds and older)
- Retail sales (£ pc 16 year olds and older)
- Natural volumes (litres pc 18 year olds and older)
- Pure alcohol volumes (litres pc 18 year olds and older)
- Alcohol units (litres pc 18 year olds and older)
- Retail sales (£ pc 18 year olds and older)
- Natural volumes price per litre
- Pure alcohol volumes price per litre
- Alcohol unit 10ml price per unit
- Trade sector percentage of natural volume (on- or off-trade share of total)
- Trade sector percentage of value
- Trade sector percentage of pure alcohol volume
- ABVs used

The volume of alcohol sold (Litres) is available for both the on- and off-trade sectors across eight alcoholic drink categories: spirits, light wine, beer, cider, ready to drink beverages (RTDs), perry, fortified wine and 'other'. The volume of each drink category sold is converted into pure alcohol volume using a category-specific percentage Alcohol by Volume (ABV). The ABV indicates the typical strength of drinks sold in that category and is provided by the data suppliers. The category specific ABV is regularly updated to take into account changes in ABV standard over time.

Nielsen data available for the period 1994-2011 by country (Scotland; England & Wales) from NHS Health Scotland:

- Pure alcohol volumes (1,000 litres) (1994-2009 only)
- Pure alcohol volumes (litres pc 16 year olds and older)
- Alcohol units (litres pc 16 year olds and older)
- Price per litre of pure alcohol (£) (1994-2009 only)
- Price per alcohol unit (£)

Data available for both the on- and off-trade sectors across eight alcoholic drink categories: spirits, light wine, beer, cider, ready to drink beverages (RTDs), perry, fortified wine and 'other'.

Nielsen data available for 2009-2011 by country (Scotland; England & Wales) from NHS Health Scotland:

- Price distribution (price per unit) of alcohol (L pure alcohol) sold off-trade (excluding discount retailers)
  - Spirits (14 categories)
  - Wine (5 categories)
  - Beers (5 categories)
  - Cider (2 categories)
  - Other (3 categories)

Nielsen data available for 2009 by country (Scotland; and England) from NHS Health Scotland:

- Price distribution (price per unit) of alcohol (L pure alcohol) sold off-trade
  - Spirits (12 categories)
  - Beer (5 categories)
  - Cider (2 categories)
  - Light wine (3 categories)
  - Other (3 categories)
- Price distribution (price per unit) of beer (L pure alcohol) sold off-trade
  - Lager (5 categories)
  - Ale (4 categories)
  - Stout (4 categories)

(ii) Mintel

Mintel conducts market research on alcohol, including collecting data on the UK alcoholic drink market size and alcoholic drink market share. A range of reports, priced at £300+, are available on:

- Beer and cider
- FABs (flavoured alcoholic beverages) and mixables
- Spirits and liqueurs
- Wine
- Drinking trends/general alcoholic drink

http://store.mintel.com/drink-and-tobacco/alcoholic-drink.html#country=7

(iii) Euromonitor

Euromonitor conducts research on the UK alcoholic drinks industry. They monitor and analyse trends in alcoholic drinks, including in-depth data on the market share and market size. Reports, priced at £600+, are available on the following drinks categories:

- Beer
- Cider/perry
- RTDs/high strength premixes
- Spirits
- Wines

http://www.euromonitor.com/alcoholic-drinks?id=1&pageSizes=10&sortBy=5&fs[0].Code=GB&fs[0].Group=geography&fs[0].Name=United+Kingdom&fs[0].hasChildren=False&fs[0].Expanded=False&fs[0].Type=Child

(iv) HMRC

HM Revenue & Customs publish a monthly Alcohol Bulletin (https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx). Archives are available online from May 2010. Further archived copies of the Bulletin can be obtained from revenuemonitoring@hmrc.gsi.gov.uk.

- Quantities released for consumption and revenue (hectolitres) 1994-2011:
  - Wine of fresh grape
  - Made wine
  - Spirits (hectolitres of pure alcohol)
- Clearances and revenue 1994-2011 (thousand hectolitres):
  - Beer
  - Cider
- Changes in UK alcohol duty rates for:
  - Wine (1995-2012)
  - Spirits (1982-2012)
  - Beer (1993-2012)
  - Cider (1992-2012) (see **Appendix 2**)

(v) BBPA

The British Beer and Pub Association's (previously the Brewers and Licensed Retailers Association) annual Statistical Handbook has information on the UK on-trade beer market by type (draught or packaged). From 1992 onwards, the information has been broken down by the percentage of sales of bitter/stout and lager by % ABV band.

(vi) Key Note

The UK marketing intelligence company Key Note produces market research reports on consumer, industrial, business to business and lifestyle topics. The reports are compiled with data from trade sources, online searches, interviews and field research plus secondary data sources for consumer information, advertising expenditure and background data. The following Key Note reports were consulted:

- Drinks Market (2000; 2001; 2003; 2005; 2006; 2008; 2009)
- Wine (1991; 2000; 2002; 2004; 2006; 2007; 2008; 2009; 2011)
- Premium Beers, Lagers and Ciders (2000; 2002; 2004; 2007; 2009; 2010; 2012)
- Breweries & the Beer Market (1991; 2001; 2002; 2003; 2004; 2005; 2006; 2007; 2008; 2011; 2012)
- Public Houses (1991; 2001; 2002; 2003; 2004; 2005; 2006; 2007; 2008; 2009; 2010; 2011)
- Spirits & Liqueurs (2001; 2010)
- Glassware (1991; 1999; 2002; 2004; 2005; 2007; 2009; 2011)
- Non-food Sales in Supermarkets (2002; 2006; 2008; 2010)

APPENDIX 3: Changes in Duty Levels: Summary of HMRC Information

BEER RATES OF DUTY				£ per 1% ABV
Date of Change	Beer[1]	Breweries producing 5000 Hls or less[2]	Breweries producing 5000-30000 Hls[2]	Breweries producing 30000-60000 Hls[3]
01.06.93	10.45	-	-	-
01.01.94	10.45	-	-	-
01.01.95	10.82	-	-	-
01.10.96	10.82	-	-	-
01.01.97	10.82	-	-	-
01.01.98	11.14	-	-	-
01.01.99	11.50	-	-	-
01.04.00	11.89	-	-	-
07.03.01	11.89	-	-	-
01.06.02	11.89	5.95	5.95 to 10.90	-
14.04.03	12.22	6.11	6.12 to 11.21	-
22.03.04	12.59	6.30	6.30 to 11.54	-
01.06.04	12.59	6.30	6.30 to 11.54	11.54 to 12.59
20.03.05	12.92	6.46	6.46 to 11.85	11.85 to 12.92
26.03.06	13.26	6.63	6.63 to 12.16	12.16 to 13.26
26.03.07	13.71	6.86	6.86 to 12.57	12.57 to 13.71
17.03.08	14.96	7.48	7.48 to 13.71	13.71 to 14.96
01.12.08 [4]	16.15	8.08	8.08 to 14.80	14.80 to 16.15
23.04.09	16.47	8.24	8.24 to 15.10	15.10 to 16.47
29.03.10	17.32	8.66	8.66 to 15.88	15.88 to 17.32
28.03.11	18.57	9.29	9.29 to 17.02	17.02 to 18.57
26.03.12	19.51	9.76	9.76 to 17.88	17.88 to 19.51

1. Beer of an alcoholic strength exceeding 22 per cent is dutied at the same rate as spirits per litre of alcohol.
2. Reduced duty rates were introduced from 1 June 2002 for beer produced by independent breweries producing no more than 30,000 hectolitres per year. For breweries producing between 5,000 to 30,000, an arithmetical formula is used to determine the rate.
3. From 1 June 2004, reduced duty rates were introduced for beer produced by independent breweries producing between 30,000 and 60,000 hectolitres per year. These reduced rates taper the reduced rate presently paid at a production level of 30,000 hectolitres per year to the full standard rate on exceeding 60,000 hectolitres.
4. The increase in duty on 1 December 2008 corresponds to the temporary cut in VAT rate from 17.5 per cent to 15 per cent for the period 1 December 2008 to 31 December 2009, leaving the overall level of tax on alcohol broadly unchanged during that period.
5. High Strength Beer Duty and Lower Strength Beer Duty were introduced 1 October 2011. The rates are as follows:
   - High Strength Beer Duty - equivalent to an additional 25 per cent of the general beer duty rate in force at the time of introduction.
   - Lower Strength Beer Duty - equivalent to 50 per cent of the general beer duty rate in force at the time of introduction.

WINE RATES OF DUTY						£ per hectolitre
Date of Change	Wine (includes wine, still wine and made-wine)				Sparkling Wine	
	Over 1.2% to 4%	Over 4% to 5.5%	Over 5.5% to 15%	Over 15% to 22%	Over 5.5% to 8.5%	Over 8.5% but not exceeding 15%
01.01.95	23.41	42.41	140.44	200.64	-	200.64
01.01.96	23.41	42.41	140.44	187.24	-	200.64
01.01.97	43.28	59.51	140.44	187.24	195.63	200.64
01.01.98	44.58	61.30	144.65	192.86	201.50	206.66
17.03.98	44.58	61.30	144.65	192.86	161.20	206.66
01.01.99	46.01	63.36	149.28	199.03	161.20	213.27
01.04.00	47.58	65.42	154.37	205.82	166.70	220.54
07.03.01	47.58	65.42	154.37	205.82	166.70	220.54
28.04.02	47.58	65.42	154.37	205.82	166.70	220.54
14.04.03	48.91	67.25	158.69	211.58	166.70	220.54
22.03.04	50.38	69.27	163.47	217.95	166.70	220.54
20.03.05	51.69	71.07	167.72	223.62	166.70	220.54
26.03.06	53.06	72.95	172.17	229.55	166.70	220.54
26.03.07	54.85	75.42	177.99	237.31	172.33	227.99
17.03.08	59.87	82.32	194.28	259.02	188.10	248.85
01.12.08	64.65	88.90	209.82	279.74	203.14	268.75
23.04.09	65.94	90.68	214.02	285.33	207.20	274.13
29.03.10	69.32	95.33	225.00	299.97	217.83	288.20
28.03.11	74.32	102.21	241.23	321.61	233.55	308.99
26.03.12	78.07	107.36	253.39	337.82	245.32	324.56

CIDER RATES OF DUTY			£ per hectolitre
Date of Change	Still		Sparkling [2]
	Over 1.2% - but not exceeding 7.5%	Over 7.5% but less than 8.5% [1]	Over 5.5% but less than 8.5% [3]
10.03.92	21.32	-	-
16.03.93	22.39	-	-
01.01.94	22.82	-	-
01.01.95	23.78	-	-
01.10.96	23.78	35.67	-
01.01.97	23.78	35.67	36.45
01.01.98	24.49	36.74	37.54
17.03.98	24.49	36.74	45.05
01.01.99	25.27	37.92	45.05
09.03.99 [4]	25.27	37.92	161.20
01.04.00	26.13	39.21	166.70
07.03.01	26.13	39.21	166.70
28.04.02	25.61	38.43	166.70
20.03.05	25.61	38.43	166.70
26.03.06	25.61	38.43	166.70
26.03.07	26.48	39.73	172.33
01.03.08	28.90	43.37	188.10
01.12.08 [5]	31.21	46.83	203.14
23.04.09	31.83	47.77	207.20
29.03.10	36.01	54.04	217.83
30.06.10 [6]	33.46	50.22	217.83
28.03.11	35.87	53.84	233.55
26.03.12	37.68	56.55	245.32

1. Before 1 October 1996, duty on still cider and perry of strength over 7.5% but less than 8.5% was at the same rate as still cider and perry of strength 1.2% to 7.5%.
2. Duty on sparkling cider and perry of strength exceeding 1.2% but not exceeding 5.5% is charged at the same rate as still cider and perry of strength exceeding 1.2% but not exceeding 7.5%.
3. Before 1 January 1997, duty on sparkling cider and perry of strength over 5.5% but less than 8.5% was at the same rate as still cider and perry of appropriate strength.
4. Rate of excise duty on sparkling cider and perry aligned with the rate for lower strength sparkling wine and sparkling made wine.
5. The increase in duty on 1 December 2008 corresponds to the temporary cut in VAT rate from 17.5% to 15% for the period 1 December 2008 to 31 December 2009, leaving the overall level of tax on alcohol broadly unchanged during that period
6. At Budget 2010 it was announced that duty on cider was to be increased by 10 percentage points above inflation, rather than the previously announced two percentage points. However, the further 8% increase was subsequently removed from the Finance Bill, and the rate reverted to the 2% above inflation rate on 30 June 2010.

SPIRITS RATES OF DUTY		£ per litre of alcohol
Date of Change	**Spirits-Based RTDs**	**Spirits**
10.03.82	-	14.47
16.03.83	-	15.19
14.03.84	-	15.48
20.03.85	-	15.77
20.03.90	-	17.35
19.03.91	-	18.96
10.03.92	-	19.81
16.03.93	-	19.81
01.01.94	-	19.81
01.01.95	-	20.60
28.11.95	-	19.78
26.11.96	-	18.99
01.01.98	-	19.56
17.03.98	-	19.56
09.03.99	-	19.56
01.04.00	-	19.56
07.03.01	-	19.56
28.04.02	19.56	19.56
14.04.03	19.56	19.56
22.03.04	19.56	19.56
20.03.05	19.56	19.56
26.03.06	19.56	19.56
26.03.07	19.56	19.56
17.03.08	21.35	21.35
01.12.08	22.20	22.20
23.04.09	22.64	22.64
29.03.10	23.80	23.80
28.03.11	25.52	25.52
26.03.12	26.81	26.81

APPENDIX 4: Industry-led Changes in Product Strength, 1990-2012: Examples from the Alcohol & Hospitality Industries' Trade Press

Key: ABV/abv = alcohol by volume, **NPD =** new product development

(i) BEER

Date	Topic	Content	Source
19881013	ABV Beer NPD – low ABV	Reports on launches of low alcohol McEwan's LA (0.9% abv) which would benefit from new lower duties on low alcohol products; and of premium lager McEwan's Makler.	Hounslow S (1988). Brewer pushes McEwan's lager brands. *Marketing*, October 13th: 19.
19930408	ABV Beer ABV reduction	Reports that Holsten Pils will reduce its % abv from 6 to an unreported strength; and comments on industry speculation that bottled Holsten Bier (5% abv) will be introduced in the UK to the on- and off-trade.	Meller P (1993). Holsten rolls out Bier and revamps Pils: Brand Creation. *Marketing*, April 8th.
19930601	ABV Beer ABV reduction	Reports on large brewers (e.g. Bass and Courage) diluting brands by up to 0.5% abv in response to beer taxation changes; also affected Holsten Pils, brewed outside the UK (from 6% to 5.5% abv).	Jefford A (1993). Drinkers committed to avoiding their duty; Cross-Channel booze runs, beer regulations and a new distillery were the talking points of 1993. *Evening Standard (London)*, December 31st: 26.
19930607	ABV Beer ABV reduction	Reports that Bass is to reduce the strength of 19/63 brands, including Worthington Best Bitter from 3.8% to 3.6% abv and Tennents Pilsner from 3.5% to 3.4% abv, but no reduction for 4.1% abv Carling Black Label. Also reports that Courage is to reduce the strength of 9 brands including Hofmeister lager from 3.5% to 3.4%, and Webster's Yorkshire Bitter, from 3.8% to 3.5% abv.	McCarthy G (1993). Weaker Beer Will Save Tax. *Press Association*, June 7th.
19960100	ABV Beer ABV increases (& polarisation)	Comments on the change in the UK, "British beer consumers are finally growing up and getting a taste for premium lagers in a big way. … Kelly said there had also been a movement upwards in the quality of standard lager"; polarisation of beer strengths to low threes and 4% abv. Reports on re-launch of Carlsberg as 3.4% abv in the UK. Reports that 3.4 to 4.2% abv beers make up most off-trade sales, the market share is falling with UK drinkers preferring stronger beers.	Off Licence News (1996) *A coming of age*. May 2nd: 12.
19960502	ABV Beer ABV decrease / no change	Describes relaunch of Heiniken with a new can design but no change in strength (3.4% abv), to "*distance it from Export*". And reports on repositioning of Scottish Courage's Kestrel, reduced in strength from 3.4 to 3.2% abv (in a 44cl can) to match Tennent's Pilsner and Skol; Hoffmeister remains the same at 3.4% abv.	Off Licence News (1996) *A coming of age*. May 2nd: 12.
20010000	ABV Beer	Notes that Bud Lite was withdrawn from the UK market by Anheuser-Busch due to "*lack of interest*".	Datamonitor CommentWire (2007). *Coors: tapping a healthy trend*. September 7th.

Date	Topic	Content	Source
20010427	ABV Beer ABV reduction	Reports that Bass reduced Caffrey's % ABV from 4.8 to 4.2 due to consumer feedback on reduced consumption due to hangovers.	*Off Licence News* (2001). April 27th.
20010602	ABV Beers Product change	Reports that Caffrey's has reduced its % abv from 5 to 4.2 due to research showing that "*drinkers were surprised by its strength*". Article notes that it will compete with Guinness at 4.1% abv.	The Publican's Morning Advertiser (2001). Caffrey's goes back to its roots. Ale relaunch reduces ABV and reclaims Irish heritage. May 2nd.
20030224	ABV Beer ABV increase	Reports on the change from UK's Heineken (at 3.4% abv) to the premium 5% abv Dutch-brewed Heineken launched in the UK.	M2 Communications Ltd (2005). Heineken: Do you know where your beer is brewed? September 16th.
20030227	ABV Beers New product development	Gives details of the new 5% abv premium draught Heineken to replace the lower strength Cold Filtered standard lager (3.4% abv), to be phased out. Also reports on the UK launch of draught Amstel (4.1% abv) as "*an alternative between premium and standard lager offerings*".	The Publican's Morning Advertiser (2003). *New 5% Heineken is up and running*. February 27th.
20030814	ABV Beers Product change	Outlines re-launch of Boddingtons as an increased strength Boddingtons Cask real ale from 3.8 to 4.1% abv.	Halstead T (2003). Boddingtons gets new identity in sales push. The *Publican's Morning Advertiser,* August 14th.
20050916	ABV Beer NPD	Reports on Bavaria Malt (0% abv) brand extension of existing Bavaria Premium (5% abv); 25cl and 33cl bottles and 33cl cans available.	Off Licence News (2005). 2005 Alcohol-free Bavaria beer alternative. September 16th: 14.
20060223	ABV Beer New product development	Reports on UK launch for InBev UK's extra cold draught lager Beck's Vier (4% abv), a lower strength brand extension of existing Beck's.	The Publican's Morning Advertiser (2006). *InBev launches new lower-strength Beck's draught lager.* February 23rd.
20060511	ABV Beer NPD	Reports on launch of bottled Carlsberg Elephant (7.2% abv), an addition to Carlsberg's premium lager range which also includes Carlsberg Export, Holsten Pils and Birra Poretti.	Marketing Week (2006). Carlsberg to resurrect Elephant premium lager after seven years. May 11th: 6.
20060715	ABV Beer NPD – brand extensions	Reports on trend for lower-alcohol beers. Lists launch of Beck's Vier in cans (4% abv), a reduced strength brand extension of Becks; and Bud Silver in cans (4%) a variant of Budweiser. Describes the trial in Ireland of Guinness Mid-Strength (2.8% abv).	The Grocer (2006). *Beer/Lager*. July 15th: 47.
20070907	ABV Beer NPD – brand extensions	Reports on UK re-launch by Coors Brewers for Coors Fine Light (4.5% abv), a reduction from its original 5% abv strength.	Datamonitor CommentWire (2007). *Coors: tapping a healthy trend*. September 7th.
20080117	ABV Beer Product change	Reports that the brewers at Wychwood reduced cask Hobgoblin's % ABV from 5 to 4.5 due to customer feedback that it was too strong. Describes the success of a 3.5% abv Hobgoblin brewed for sale in Swedish supermarkets.	The Publican's Morning Advertiser (2008). *Thompson calls on brewing industry to be positive*. January 17th.

Date	Topic	Content	Source
20080626	ABV Beer NPD – brand extensions	Describes how perceptions of the term 'premium' in the UK's beer market has changed from being related to ABV strength. Reports on UK launch for InBev's Stella Artois 4% (4% abv), a lower strength brand extension of the original Stella Artois (5.2% abv); initially targeting the off-trade before the on-trade in November. The UK 4% abv already includes InBev's Beck's Vier and Peeterman Artois, and Heineken's Amstel.	just-drinks global news (2008). UK: InBev unveils Stella Artois 4% for UK market. June 26th.
20080816	ABV Beer NPD – brand extensions	Reports on UK launch for Tasmanian Boag's St George (4.8% abv), a lower strength brand extension of existing Boag's Premium (5.2% abv).	The Grocer (2008). *St George has UK distributor*. August 16th: 58.
20080820	ABV Beer	Reports that Greene King reduced draught Old Speckled Hen's % ABV from 5.2 to 4.5 but off-trade bottles and cans remained at 5.2% abv and export Old Speckled Hen did not change either.	Moore D (2008). The Old Speckled 'Un. *The Daily News (New Plymouth, New Zealand)*, August 20th: 10.
20080821	ABV Beers Product change	Describes the re-launch of reduced strength bottled Stella Artois at 5% abv (from 5.1% on-trade and 5.2% off-trade).	The Publican's Morning Advertiser (2008). *Stella relaunches bottle with lower ABV*. August 21st.
20080821	ABV Beer Product change	Reports that Greene King reduced Old Speckled Hen's % ABV from 5.2 to 4.5 due to consumer feedback (from 500 licensees and customers) that it was too strong.	The Publican's Morning Advertiser (2006). *Greene King to lower ABV of premium* ale. August 11th.
20080830	ABV Beer Reduction	Reports on UK launch for InBev's Stella Artois 4% (4% abv), a lower strength brand extension of the original Stella Artois (5.2% abv); initially targeting the off-trade before the on-trade. Describes the re-launch of reduced strength Stella Artois at 5% abv (from 5.1% on-trade and 5.2% off-trade).	The Grocer (2008). InBev tries to restore Stella to former glory. August 30th: 24.
20090727	Beer - ABV NPD	Gives details of the launch of the UK's strongest beer, from BrewDog at 18.2% abv.	Harpers (2009). BrewDog slammed for 18.2% ABV beer. July 27th.
20100424	ABV Beer NPD	Comments on launch of AB InBev's Budweiser 66 (4% abv), sold in 500ml cans, with a 10-15% price premium compared with other 4% brands. Compares it with launches by the same brewer of Beck's Vier and Stella 4%, examples of the "*premiumisation trend*".	The Grocer (2010). Can Budweiser 66 connect with the iPhone generation? April 24: 12.
20110216	ABV Beers Product change	Reports on the Campaign for Real Ale (CAMRA) lobbying the Government for extending the reduction in duty on 2.8% abv beers to include those up to 3.5% abv, currently prohibited by EU rules.	Turney E (2011). CAMRA to lobby for lower duty on 3.5% beers. CAMRA hopes to work with the Government to secure a change in EU rules to allow a lower duty rate on beers below 3.5% abv. *The Publican's Morning Advertiser,* February 16th.

Date	Topic	Content	Source
20110328	ABV Beer Duty changes by AVB	Reports on the announced duty change for October on beers >7.5% abv (adding 25 pence to a can of super-strength lager) and the reduced duty rate for beers ≤2.8% abv.	Kollewe J & Wainwright M (2011). The Budget: 2011: Leisure: Beer and brewing Tax rise puts 10,000 jobs at risk, says industry body. *The Guardian (London)*, March 24th: 12.
20110630	ABV Beers Product change	Reports on re-launch of Budweiser Draught (4.3% abv) to compete with Foster's, Carling and Carlsberg draught lagers.	Harvey J (2011). Budweiser Draught is re-launching with a 4.3% ABV. *The Publican's Morning Advertiser,* June 30th.
20110715	ABV Beers/Wine Opinion	Comment on "where the market is heading - people want to drink weaker beers and they are happy to pay more for a premium brand". Reports on announcement that AB InBev is re-launching a lower strength draught Budweiser in the UK (from 5% to 4.3%abv). Lists recent % ABV reductions and launches as: AB InBev's Beck's Vier and Stella Artois 4%; Heineken's 4% premium import Amstel; Molson cooers Grolsch Blond, a 4% abv brand extension of Grolsch.	Mellows P (2011). The 4% solution: drinkers demand less bang for their buck. *The Publican's Morning Advertiser*, July 15th
20111003	ABV Beers Product change	Reports on % ABV reduction for Skol from 3% to 2.8% in response to UK Govt. duty initiative to encourage lower ABV beer development.	Harvey J (2011). Carlsberg to cut Skol ABV. *The Publican's Morning Advertiser*, October 3rd.
20111007	ABV Beer NPD - low AVB	Lists the beers currently ≤2.8% abv as Molson Coors' C2, Tennent's Sweetheart Stout, Harvey's Sweet Sussex, Marston's Mann's Brown Ale, and AB InBev's Whitbread Best Mild. Reports on the impending launch of J W Lees' Golden Lite (2.8% abv) and lowering in strength of Carlsberg's Skol from 3% to 2.8% abv.	Gerrard N (2011). News: The Government has introduced a 35p cut in tax for lower strength beers. *Caterer & Hotelkeeper*, October 7th.
20111015	ABV Beer NPD - low AVB	Reports on Budweiser Budvar Czech Non-alcoholic Beer (0.4% abv), a brand extension of original Budvar; 33cl bottles available.	The Grocer (2011). *Budweiser Budvar offers 0.4% abv beer.* October 15th: 30.
20111112	ABV Beer Product change	Reports on launch of 4.8% abv Foster's Gold for the off-trade and Heineken intends to completely replace one of its products with a lower strength one. Reports on an industry opinion that '*"The days of pricing being entirely dependent on abv content are long past us," he concludes … also believes there is an increasing trend among beer drinkers to pay attention to a product's provenance and quality*'.	Harpers (2011). Heineken: learning from beer and cider category. August 12th.
20120100	ABV Beers Product change - Reduction	Describes the planned reduction in strength of producer AB InBev's products from 5% to 4.8% abv in the on-trade (for bottles and cans of Stella Artois and Beck's and bottled Budweiser) in April. It notes that draught Bud remains at 4.3% abv. Also describes a 2.5 pence/pint saving on duty and introduction of a 7.8% price rise across the brand portfolio in January.	Dinkovski N (2012). Stella, Bud and Beck's get ABV cut. *The Publican's Morning Advertiser*, January 24th.

Date	Topic	Content	Source
20120200	ABV Beer NPD - low AVB	Outlines the UK off-trade launch of Diageo's Guinness Mid-Strength (2.8% abv), a lower strength brand extension of regular Guinness (4.1% abv), and already trialled in Ireland and Scotland in 2009. Reports that the producer would benefit from the UK's 50% duty tax discount on beers at ≤2.8% abv.	Mercer C (2012). UK: Diageo to launch Guinness Mid-Strength in UK. *just-drinks global news*, January 20th.
20120204	ABV Beer NPD - low AVB	Reports on launch of San Miguel Fresca (4.4% abv), a lower strength brand extension of parent brand San Miguel (5% abv), which will be available in 4-, 12- and 24-packs off-trade. Also reports on reduction in strength from 5% to 4.7% abv of Carlsberg Export.	Bamford V (2012). Carlsberg expands San Miguel with lower-abv 'sunshine' beer Fresca. *The Grocer,* February 4th: 32
20120213	ABV Beers Product change	Describes the intention for Carlsberg export to be reduced in strength in the on- and off-trade by 0.2% abv. Reports that Molson Coors is reducing the strength of bottled Cobra by the same amount from 5% abv, with no changes made to draught Cobra.	Dinkovski N (2012). ABV cuts all round. *The Publican's Morning Advertiser*, February 13th.
20120323	ABV Beer Reduction	Reports on alcohol manufacturers' commitment to reduce the alcohol content of products. Lists: Molson Coors and Heineken; Makro will remove its own-brand super-strength lager from sale; Tesco will reduce the alcohol content of its own-label beer and expand its range of lower alcohol beers; Sainsbury's will reduce the average alcohol content of own brand beer.	M2 PressWIRE (2012). Alcohol industry sheds a billion units to cut hospital admissions and *1,000 deaths*. March 23rd: 420.
20120330	ABV Beer Reduction – on-trade	Reports on a trial scheme by Punch Taverns for licensees to stock cask ales with a strength of ≤2.8% abv, thus lower duty rates.	Gerrard N (2012). Punch Taverns is trialling a scheme. *Caterer & Hotelkeeper*, March 30th.
20120400	ABV Beers Product change - Reduction	Describes the planned reduction in strength of producer AB InBev's products from 5% to 4.8% abv in the on-trade (for bottles and cans of Stella Artois and Beck's and bottled Budweiser) in April. It notes that draught Bud remains at 4.3% abv.	Dinkovski N (2012). AB InBev in ABV-cut move. *Morning Advertiser*, February 2nd: 22.
20120400	ABV Beer NPD - low AVB	Describes the planned reduction in strength of producer AB InBev's products from 5% to 4.8% abv in the on-trade (for bottles and cans of Stella Artois and Beck's and bottled Budweiser) in April. It notes that Bud Draught remains at 4.3% abv.	Stodell H (2012). AB InBev lowers abv of Stella, Bud and Beck's. *The Grocer*, January 21st: 32.
20120522	ABV Beer NPD - low AVB	Covers the introductions of Carling Zest lager (2.8% abv), a limited edition for the UK and Ireland.	Business Wire (2012). Molson Coors Introduces New Summer Brews, May 22nd.
20120613	ABV Beers/Duty New product development	Describes the ≤2.8% abv market: launch of Carling Zest; developments by brewers Adnam's, Wadworth, Wolf and Brodie's; notes the reduced prices compared with full-strength beers; reports the 47% rise in sales amongst Tesco's 13 brands.	Naylor T (2012). Duty calls: lower alcohol beer taste test. *The Guardian*, June 13th.

(ii) WINE

Date	Topic	Content	Source
20060811	Wine ABV Survey data	Comments on consumer research from Wine intelligence's Wine Consumer Access Survey (WCAS), that, "'*In general consumers think high alcohol wines* [Wine Intelligence sets as those with above 13% ABV] *are good news,' he said. For some it may simply be a "bang for buck" consideration, whereas others see wines with high alcohol as being more complex and having a better taste*". The article also notes that the given % abv on a bottle could be plus or minus 0.5% abv either way, so wines may be more or less alcoholic than we realise.	Harpers (2006). Rising Alcohol Levels- Discuss. August 11th.
20061006	ABV Wine Increases	Suggests a number of reasons for increased % abv levels in still wines, and comments on the changes in European and New World wine strengths over time.	Rosen M (2006). Too hot to handle? High alcohol wines fire debate. *Agence France-Presse [English]*, October 6th.
20070428	ABV Wine & Serving Size Wine NPD	Reports on the emergence of low alcohol wines in the UK. Lists brand launches: Foster's EMEA's Early Harvest, and Ehrmanns Wine's Bright (including red, white and rosé, with 25cl bottles for outdoor events).	The Grocer (2007). *Winemakers fight for growth*. April 28th: 37-38.
20080529	ABV Wine NPD	Describes the launch in the UK of a low alcohol range (5.5% abv) of premium wine-based fizzes, spritzers and coolers.	just-drinks global news (2008). *ZGM launches in low alcohol category*. May 29th.
20091112	ABV Wine Opinion on reduction	Reports on New World wines often having a higher % abv than wines from Mediterranean Europe; a rising popularity for rosé wines followed by consumer acceptance for other light/fruity wines; advertising regulations for low alcohol wines; and duty rates do not encourage low alcohol wines above 5.5% abv.	Kirby T (2009). How low can you go? Sales of reduced-alcohol wines are rising fast, in a backlash against powerful New World labels. But do they pass the taste test? *Independent Extra*, November 12th: 8.
20100108	ABV Wine	Reports on market research data that the low-alcohol drinks category including wine has seen sales growth of £25.2 million over the year (a rise of 11%); and the section with most momentum is wine above 5.5% abv, but below the 13% abv.	Collenette N (2010). How low can you go? Health concerns are leading the trend towards low-alcohol wine. *Off Licence News*, January 8th: 23.
20100611	ABV Wine Consumer research (attitudes and behaviour)	Covers consumer research in the UK on the increase in the number of consumers questioned between 2007 and 2010 who would consider purchasing lower strength wines.	Off Licence News (2010). Market Monitor: A Graphic Guide to the Off-Trade, January 8th: 23; Off Licence News (2010). Lower Alcohol Wines Gaining Acceptance May 28th: 6.
20110312	ABV Wine Reduction	Reports on the launch of a lower strength (10.5% abv) red wine in the UK, designed to be served chilled.	Julyan AM (2011). Time could be right for UK to drink red wine from the fridge. *The Grocer*, March 12th: 28.

Date	Topic	Content	Source
20110715	ABV Beers/Wine Opinion	Comments on an increase in wine strength around the world attributed to climate change and winemakers, "*for marketing reasons, pretending that their products are weaker than they actually are*". The author suggests that this is because consumers are "*managing their alcohol consumption in a quite sophisticated way, checking the ABVs … and extending social drinking by keeping the strength down*".	Mellows P (2011). The 4% solution: drinkers demand less bang for their buck. *The Publican's Morning Advertiser*, July 15th
20110811	ABV Wine Opinion	Comments on the lower duty rates for wines <5.5% abv and the opportunity presented by interest in low alcohol wines from consumers and retailers.	Harpers (2011). Analysis: stand up for responsibility. August 11th.
20110924	ABV Wine NPD – low ABV	Reports on the re-launch of Halewood International's British wine brand including a 7.5% abv red wine, based on fermented imported grape juice.	The Grocer (2011). *Halewood taps into budget wine growth*. September 24th: 34.
20120323	ABV Wine Reduction	Reports on alcohol manufacturers' commitment to reduce the alcohol content of products. Lists: Sainsbury's pledged to double sales of lighter alcohol wine and reduce the average % abv of own brand wine; Accolade Wines will gradually remove alcohol units; and Brand Phoenix will reduce all FirstCape full strength red wines by 0.8% abv.	M2 PressWIRE (2012). Alcohol industry sheds a billion units to cut hospital admissions and *1,000 deaths*. March 23rd: 420.
20120421	ABV wine Low ABV	Lists a number of lower strength wine product launches: FirstCape's Light range of wines (5.5% abv); Accolade's Banrock Station low-alcohol range the previous year; CWF's British wine Silver Bay Point added 2 sparkling wines (5.5% abv) the previous year; and Landmark Wholesale launched British wine Ocean Star, 3 wines at 7.5% abv; moscato (a naturally low 5-10% abv) launched in UK by Californian E&J Gallo Winery, Percy Fox's Yellowtail brand, and Pernod Ricard's Jacob's Creek.	Stodell H (2012). Focus on Wine & Champagne: an end to rising abvs and promos? *The Grocer*, April 21st: 51-51, 56.

(iii) CIDER

Date	Topic	Content	Source
19950428	ABV Cider NPD – ABV increase	Reports on % ABV increase for Inch's Cider Stonehouse cider in a PET with widget from the Stonehouse Original's 6% to 6.1% abv. Also reports on launch of Spar White Cider (8.2% abv) in a 1l bottle and 50cl cans.	Brand Strategy (1995). *New Brands and Brand Extensions*. April 28th: 31.
19960923	ABV Cider NPD – ABV decrease	Reports on % ABV reduction for Merrydown Vintage and Original to 7.5% in response to Excise Duty increase of 50% for ciders between 7.6% and 8.4% abv; Merrydown Pulse will be reduced from 8.4% to 7.5% and the brand extended to Merrydown Pulse 8 at the original 8.4%.	London Stock Exchange Aggregated Regulatory News Service (ARNS) (1996). *Merrydown PLC Chairmans' A.G.M. Statement.* September 23rd.
19961001	Duty change on cider	Reports on the to Excise Duty increase by 50% for ciders between 7.6% and 8.4% abv.	London Stock Exchange Aggregated Regulatory News Service (ARNS) (1996). *Merrydown PLC Chairmans' A.G.M. Statement.* September 23rd.
20080818	ABV Cider New product	Describes UK launch for Magners Mid Strength cider, a lower strength brand extension containing half the alcohol content of existing Magners Original.	Harpers (2008). Magners launches low alcohol variant. August 18th.
20090325	ABV Cider Reduction	Reports that S&N reduced White Lightning's % abv from 7.5% to 5.5%, without a supporting marketing budget.	Brownsell A (2009). Down and out? *Marketing*, March 25th: 13.
20090600	ABV Cider Product change (& removal)	Gives an account of the reduction of White Lightning, Heineken cider's % abv from 8.5% to 7.5%, then to 5.5% before withdrawing it from the market in 2009, "*despite sound profits*".	Harpers (2011). Heineken learning from beer and cider category. August 12th.
20120323	ABV Cider Reduction	Reports on alcohol manufacturers' commitment to reduce the alcohol content of products. Lists: Molson Coors and Heineken; Tesco will reduce the alcohol content of its own-label cider.	M2 PressWIRE (2012). Alcohol industry sheds a billion units to cut hospital admissions and *1,000 deaths*. March 23rd: 420.

(iv) OTHER DRINKS

Date	Topic	Content	Source
19790000	ABV Spirits Reduction	Reports on reduction in strength of Bacardi white rum sold in UK from 40% ABV to 37.5% ABV - "*a move the firm blames today on the UK's relatively high duty levels*".	Hounslow S (1988). News Analysis: Weak spirits just aren't cricket - No wonder drinks companies are keeping quiet about reducing the strength of the hard stuff. The cost saving isn't being passed to the customer. *Marketing*, October 6th.
19860000	ABV Spirits Reduction	Reports that the strength of Jack Daniel's 'Tennessee sippin' whiskey' was reduced in 1986 from 45% ABV to 40%. Mentions that Jack Daniel's and Southern Comfort "*were made less potent by Saccone and Speed, the UK agents, merely to bring them more into line with spirits strengths in the UK which normally range from 37.5% to 40%.*"	Hounslow S (1988). News Analysis: Weak spirits just aren't cricket - No wonder drinks companies are keeping quiet about reducing the strength of the hard stuff. The cost saving isn't being passed to the customer. *Marketing*, October 6th.
19880200	ABV Spirits Reduction	Reports cut by Arthur Bell Distillersin strength of Pimm's from 32% ABV to 25% in February with no change in price.	Hounslow S (1988). News Analysis: Weak spirits just aren't cricket - No wonder drinks companies are keeping quiet about reducing the strength of the hard stuff. The cost saving isn't being passed to the customer. *Marketing*, October 6th.
19880331	ABV Spirits Product launch	Reports on relaunch of dormant high strength premium vodka brand Vladivar Gold. Strength increased from 40% alcohol by volume to 43%, compared with standard vodkas 37.5% alcohol. Discusses how premium vodkas, such as Absolut and Finlandia, have been successful in the US while in the UK, Smirnoff brand has taken 50% of the market while retaining a 'premium' image."	Hounslow S (1988). Greenall takes gamble on Vladivar Gold. *Marketing*, March 31st.
19881006	ABV Spirits Reduction	Discusses cut in strength of Malibu.	Hounslow S (1988). News Analysis: Weak spirits just aren't cricket - No wonder drinks companies are keeping quiet about reducing the strength of the hard stuff. The cost saving isn't being passed to the customer. *Marketing*, October 6th.

Date	Topic	Content	Source
19920515	ABV Spirits ABV reduction	Reports on reduction in strength of Gordon's - the biggest selling gin brand in the country - from 40% ABV to 37% " *in line with a new EC edict*", but with no change in price. Mentions that Smirnoff vodka, the leading brand, was introduced with 37% ABV and that "*Bacardi, which leads the white rum market, was cut from 40 per cent to 37 per cent in 1979 with no change in price*." [Note that in fact according to EU rules, the minimum ABV for gin was 37.5% from 1989[83].]	Jones J (1992). Why A G&T May Never Taste The Same Again. *Evening Standard (London)*, May 15th: 3.
19950428	ABV RTD NPD	Discusses RTD Two Dogs "an original new drink hailing from Australia where it already enjoys a certain cult status. The drink is concocted from fermented lemons and has a 4.2% abv. There has, however, been some concern that an alcoholic lemonade will wean teenagers onto alcohol at too early an age. Two Dogs will initially be available in 37.5cl green glass bottles."	Brand Strategy (1995). *New Brands and Brand Extensions*. April 28th: 31.
19950428	ABV RTD/Spirits NPD – ABV Increase	Discusses increase in ABV from 5% to 5.4% across the range of Bacardi Breezer variants. "*Brighter packaging reflects the tropical flavours and higher alcohol content*."	Brand Strategy (1995). *New Brands and Brand Extensions*. April 28th: 31.
20020000	ABV RTDs Duty change	Discusses impact on manufacturers of Gordon Brown's "crippling 65 per cent tax hike that forced manufacturers to reduce either the ABV of their brands, the size of the bottle or, in some cases, both". Spokesperson quoted: "RTDs are now more expensive than premium packaged lagers and that's what they're up against. The 70cl bottles are doing quite well but they're priced at around 3.50-3.90 and you can get a half-decent bottle of wine for the same price."	Off Licence News (2004). *RTDs, and their fans, have both grown up*. October 22nd: 16.
20020809	ABV Spirits Product change	Announces reduction in ABV of Red Square brand to 5.1 % ABV from 5.5 % ABV. "The move follows the Chancellor's decision earlier this year to increase duty on premium packaged spirits (PPSs) by 65 per cent - a rise of 12p per 275ml bottle."	The Publican's Morning Advertiser (2002). *Halewood reduces ABV for Red Square*. August 9th.

[83] Council Regulation (EEC) No 1576/89 of 29 May 1989 laying down general rules on the definition, description and presentation of spirit drinks. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1989R1576:20070101:EN:PDF

Date	Topic	Content	Source
20020910	ABV Spirits Product change	Discusses how the flavoured alcoholic beverage (FAB) sector "*has slowed down following Chancellor Gordon Brown's decision last April to raise duty by around 65 per cent*". Notes that brands such as Bacardi Breezer, Metz and Red Square have reduced their ABV "*to soften the blow*", but that the consumer has borne the brunt of the price hike. Claims that pubs and bars have taken the opportunity to raise the price of FABs between 20 and 50 pence, above the duty increase of 12p per 275ml bottle. Marketing manager of Bacardi Breezer quoted as saying "*that the premium FAB sector will absorb the change. "Bacardi-Martini's own extensive consumer research in the UK has suggested that it is important for premium FAB products to maintain their parent brand as an alcohol base. The research also showed that it is vital that premium brands require an ABV content above five per cent.""*	The Publican's Morning Advertiser (2002). *Decision to raise duty on FABs leads to sales slowdown*. September 10th.
20030703	ABV RTDs Product change	Discusses Smirnoff's decision to reduce ABV of RTD brands (including Smirnoff Ice, Smirnoff Black Ice and Archers Aqua) from 5.5% to 5% "*to increase our support to the trade in the form of pricing and promotional support…. Our aim with this abv change is to make RTDs more accessible thus creating benefit for our customers, our consumers, and the industry*."	The Publican's Morning Advertiser (2003). *Too late to cry wolf over bill*. July 3rd.
20031009	ABV RTDs Product change	Notes that Beverage Brands has reduced ABV of WKD from 5.5% to 5%. "A lower ABV means the company will pay lower duty on the 275ml vodka-based premium packaged spirit."	The Publican's Morning Advertiser (2003). *Duty savings for WKD stockists*. October 9th.
20050119	ABV Spirits/Wine Opinion	Discusses whether producers can have "commercial success with lower ABV products". Spokesperson for Barracuda Group quoted: "Pitchers and shooters have been a major factor behind our growth," he explains. "The big shooter brand across our estate is Corky's and I think the main reason behind its success is that it is 20 per cent ABV. We actually suppressed shooters like sambuca and pushed brands like Corky's a lot more because of the ABV difference. We don't want to throw fuel on the fire." Spokesperson describes "try-before-you-buy nights at our pubs" to allow staff to network with customers, talk through the new menu and "engender us to a female market - it gives them a safe place to have a drink with some good food. In 2003 wine sales went up by 20 per cent year on year. In 2004 they went up by 42 per cent".	Withrington A (2005). Climbing the ladder. *The Publican's Morning Advertiser,* January 19th.
20100416	ABV Spirits Opinion	Opinion piece about creating a new spirits category with a lower ABV by Intercontinental Brands' Managing Director John Mills	*Off Licence News* (2010). April 16th: 24.

Date	Topic	Content	Source
20110121	NPD ready-to-serve cocktails	Discusses launch of Bacardi Originals in two varieties, Mojito and a Cuba Libre, to be rolled out to key bars across the country from February 4 before an off-trade launch later in the year. Both drinks will be available in 275ml bottle serves, priced at around £3.75, and are "*designed to help busy bars that do not have the space or time to offer cocktails made from fresh. They are made from 100% Bacardi and been formulated to be seen as a refreshing change from a pint of beer or glass of wine. ABV levels have therefore been kept to around 5.4% per bottle*". Described as "*the first time a major drinks brand has moved into the ready to serve classic cocktail category*."	Siddle R (2011). Bacardi launches Originals ready to serve cocktail range. *Harpers,* January 21st.
20120611	ABV Rum NPD - low AVB	Launch in UK Whyte & Mackay's Cockspur Spiced Rum at 22% abv. Described as Cockspur's first new variant in the UK "*as consumer demand for golden and spiced rums continues to grow and demand for lower ABV products increase[s]*."	Morton A (2012). Product Launch - UK: Whyte & Mackay's Cockspur Spiced Rum. *just-drinks global news*, June 11th.

APPENDIX 5: Wine Market Country of Origin Tables

Table A1: Imports of table and fortified wine* into the UK 1989 and 1990		
	Million Litres	
	1989	1990
France	222	219
Germany	148	149
Italy	101	107
Portugal	15	15
Spain	48	48
Bulgaria	14	14
Australia	6	9
USA	6	6
Other countries	34	36
Total	**594**	**613**

*Wine (other than sparkling) of fresh grapes; grape must be with fermentation arrested by the addition of alcohol.
Source: Overseas Trade Statistics (In: Key Note. *Wine Market Reports.* 1991)

Table A2: The principal origins of still light wine imports by volume (%), 1992, 1996 and 1999			
	1992	1996	1999[e]
France	39	32	35
Italy	10	12	12
Australia	5	10	10
Spain	5	7	10
Germany	26	13	9
South Africa	1	5	6
USA	2	4	5
Bulgaria	4	5	4
Chile	1	4	3
Portugal	2	2	2
New Zealand	1	1	1
Other Eastern Europe	3	4	2
Other countries	1	1	1
Total	**100**	**100**	**100**

[e] Key Note estimates
Source: Overseas Trade Statistics/Key Note (In: Key Note. *Wine Market Reports.* 2000)

Table A3: The principal origins of sparkling wine imports by volume (%), 1992, 1996 and 1999			
	1992	1996	1999[e]
France	60	53	55
Spain	9	16	15
Italy	11	11	12
Australia	8	10	10
USA	3	3	3
Germany	7	2	2
Other countries	2	5	3
Total	**100**	**100**	**100**

[e] KeyNote estimates
Source: Overseas Trade Statistics/Key Note (In: Key Note. *Wine Market Reports.* 2000)

Table A4: Countries of origin for all wine of fresh grape by value (£m and %), 1998-2000					
	1998	**1999**	**2000**	**% share 2000 market**	**% change 1998-2000**
France	707	714	526	35.1	-19.7
Australia	181	251	278	17.2	53.6
Italy	209	164	160	9.9	-23.4
Spain	163	141	123	7.6	-24.5
USA	98	95	110	6.8	12.2
Germany	108	93	85	5.2	-21.3
Chile	57	79	83	5.1	45.6
South Africa	55	62	74	4.6	34.5
Portugal	54	50	43	2.7	-20.4
New Zealand	26	30	31	1.9	19.2
Argentina	13	17	22	1.4	69.2
Bulgaria	18	20	11	0.7	-38.9
Hungary	13	13	10	0.6	-23.1
Others	28	26	22	1.4	-21.4
Total	**1730**	**1755**	**1620**	**100.0***	**-6.4**

*does not sum due to rounding
Source: World Trade Atlas/Key Note (In: Key Note. *Wine Market Reports.* 2002)

Table A5: Imports of still light wine by country (million litres), 1994-2000							
	1994	**% share 1994**	**1996**	**1998**	**1999**	**2000**	**% share 2000**
France	249	39.2	216	254	247	216	26.3
Australia	47	7.4	67	89	121	142	17.3
Italy	66	10.4	82	102	103	105	12.8
Germany	121	19.0	87	80	82	85	10.4
USA	14	2.2	27	49	50	61	7.4
South Africa	17	2.7	34	41	45	53	6.5
Spain	51	8.0	49	62	57	52	6.3
Chile	6	0.9	24	35	46	47	5.7
Bulgaria	27	4.2	33	23	22	13	1.6
Argentina	1	0.2	5	9	11	12	1.5
New Zealand	5	0.8	7	8	9	10	1.2
Hungary	11	1.7	12	12	12	9	1.1
Portugal	8	1.3	10	8	7	7	0.9
Others	13	2.0	24	17	10	9	1.1
Total	**636**	**100.0**	**677**	**789**	**822**	**821**	**100.0***

*does not sum due to rounding
Source: Overseas Trade Statistics/KeyNote (In: Key Note. *Wine Market Reports.* 2002)

Table A6: Market shares of still light wine in the off-trade by origin and type of wine (%), 2000	
Red wine	**%**
Australian Red	7.4
Vins de pays (France)	5.5
Chile	3.6
US	3.2
Bordeaux (France)	2.4
Bulgaria	2.3
South Africa	2.3
Vino de tavola (Italy)	2.3
Rhône Valley (France)	1.7
Vins de table (France)	1.7
Vino de mesa (Spain)	1.5
Argentina	1.2
Rioja (Spain)	1.2
Chianti (Italy)	1.0
Corbières/Fitou (France)	0.9
Valpolicella (Italy)	0.9
Beaujolais	0.6
Portugal	0.6
Hungary	0.5
Minervois (France)	0.3
Navarra (Spain)	0.3
White wine	**%**
Australia White	8.6
Liebfraumilch (Germany)	4.9
South Africa	4.6
Tafelwein Hock (Germany)	3.7
Vin de pays (France)	3.5
US	2.4
Soave (Italy)	2.1
Chile	2.0
Vins de table (France)	1.4
Hungary	1.2
Bordeaux (France)	1.0
Frascati (Italy)	1.0
Vino de tavola (Italy)	1.0
New Zealand	0.9
Lambrusco (Italy)	0.8
Muscadet (France)	0.8
Piesporter (Germany)	0.6
Vino de mesa (Spain)	0.6
Argentina	0.5
Chablis	0.5
Bulgaria	0.4
Niersteiner (Germany)	0.4
Rioja (Spain)	0.3
Rose wine	**%**
US rosé	0.9
Valpolicella rosé (Italy)	0.8
Portugal rosé	0.7
Anjou	0.4

Note: % shares are of total still light wine in the off-trade
Source: The Drink Pocket Book (NCT Publications) (In: Key Note. *Wine Market Reports.* 2002)

Table A7: UK still light wine imports by prinicipal country of origin by volume (%), 1992-2003					
	1992	**1999**	**2001**	**2002**	**2003[e]**
France	36	30	25	24	23
Australia	5	15	19	21	22
Italy	16	12	12	10	10
USA	2	6	9	9	10
South Africa	1	5	7	9	9
Germany	24	10	9	10	9
Spain	5	7	6	6	6
Chile	1	6	6	6	6
Other countries	10	9	7	5	5
Total	**100**	**100**	**100**	**100**	**100**

[e]: estimates

Source: Overseas Trade Statistics/Keynote (In: Key Note. *Wine Market Reports.* 2004)

Table A8: Top ten still light wines by country of origin in the off-trade market by volume (%), 2002	
Type of wine	**% share of total**
French red	12.1
Australian red	10.5
Australian white	9.2
German white	8.8
French white	8.3
Italian white	7.1
South African white	5.6
Spanish red	5.5
Italian red	4.6
US red	3.9
South African red	3.8
Chilean red	3.6
US white	3.6
Chilean white	2.2

Source: ACNielsen, Drink Pocket Book 2004 published by World Advertising Research Center (www.warc.com) (In: Key Note. *Wine Market Reports.* 2004)

Table A9: Wines bought most often by country (% of adults), 2007	
Country	%
Australia	36.6
France	28.5
South Africa	19.2
USA*	18.8
Italy	17.8
Chile	16.7
Spain	14.3
Germany	10.8
New Zealand	9.0
Argentina	5.6
Britain	5.3
Portugal	3.4
Bulgaria	2.5
Yugoslavia	0.6
Other	5.2

* prompt: 'Californian'

Source: Target Group Index (TGI) © BMRB International Ltd, 2007 (In: Key Note. *Wine Market Reports.* 2007)

Table A10: wines bought by country (% of adults), 2007 and 2008 Question: 'Which country's wines do you drink?'		
	2007	2008
Australia	36.6	35.0
France	28.5	28.6
South Africa	19.2	19.8
Italy	17.8	19.5
USA*	18.8	19.4
Chile	16.7	18.0
Spain	14.3	14.3
Germany	10.8	9.8
New Zealand	9.0	9.8
Argentina	5.6	6.6
Britain	5.3	6.2
Portugal	3.4	3.0
Bulgaria	2.5	2.4

* prompt 'Californian'

Source: Target Group Index (TGI), © BMRB International Ltd, 2007, 2008. (In: Key Note. *Wine Market Reports.* 2008)

Table A11: Wines bought by country (% of adults), 2007-2009			
	2007	2008	2009
Australia	36.6	35.0	34.4
France	28.5	28.6	27.1
South Africa	19.2	19.8	20.1
USA*	18.8	19.4	19.5
Italy	17.8	19.5	18.3
Chile	16.7	18.0	17.2
Spain	14.3	14.3	14.9
New Zealand	9.0	9.8	10.7
Germany	10.8	9.8	9.2
Argentina	5.6	6.6	6.9
Portugal	3.4	3.0	3.7
Bulgaria	2.5	2.4	2.2

* prompt 'Californian'

Source: Target Group Index (TGI), © BMRB International Ltd, 2007, 2008, 2009. (In: Key Note. *Wine Market Reports.* 2009)

Table A12: Wine purchased most often by country (% of adults), 2010	
	% of adults
Australia	17.4
France	13.1
USA*	9.1
South Africa	8.6
Italy	8.4
Chile	7.4
Spain	6.0
New Zealand	4.5
Germany	3.8
UK	2.6
Argentina	1.7
Portugal	1.3
Bulgaria	0.5
Other	3.8

* prompt 'Californian'

Source: Target Group Index (TGI), © Kantar Media Q2 (January 2010-December 2010) 2011. (In: Key Note. *Wine Market Reports.*2011)

Table A13: Wine purchased most often by country (% of adults), 2011	
	% of adults
Australian	26.2
French	19.8
Italian	15.7
South African	15.7
USA	15.5
Chilean	14.8
Spanish	12.3
New Zealand	10.7
Germany	6.0
Argentinian	5.1
British	4.5
Portuguese	2.9
Bulgarian	1.4
Other	5.2

* prompt 'Californian'

Source: Target Group Index (TGI), © Kantar Media, Quarter 1 (October 2010-September 2011) 2012. (In: Key Note. *Wine Market Reports.*2012)

APPENDIX 6: Use and Popularity of Different Vessel Sizes and Types in Licensed Premises: Examples from the Alcohol & Hospitality Industries' Trade Press

Date	**Topic**	Content	Source
19940210	**Glass sizes (on-trade)** **Opinion/Trends**	Opinion piece on wine glasses. Key points: • A glass of the right size sells more wine. • A glass filled to the brim discourages the purchase of a second glass. • A glass filled 2/3 full smells, tastes and looks better. • Vendors should be prepared to educate consumers who think that they are not getting value for money unless wine glasses are filled to the brim.	Caterer & Hotelkeeper (1994). *Grape Expectations*. February 10th.
19950817	**Glass sizes (on-trade), Glass shape**	Report suggesting that the trend towards bigger bowls in glass stemware is continuing, but there is a trend for shortening stem lengths to increase stability. Suggestion that increasing public knowledge and consumption of wine has put an end to the dominance of the Paris goblet.	Caterer & Hotelkeeper (1995). *Bowled statement*. August 17th.
19960411	**Glass sizes (on-trade)** **Legislation/Wine**	Article detailing the wide choice of style, quality and price of wine glasses available. The article states that the most important factor in the change of glass style in pubs and bars has been the introduction of calibrated glasses for sales of wine by the glass in response to legislation that requires glasses to be marked with either a 125ml line, or a 175ml line. Retailers who want to avoid serving wine in a marked glass are advised that they can first pour it into a marked glass and then transfer it to the glass of their choice. Alternatively, the wine can be poured in legal measures from a marked carafe.	Caterer & Hotelkeeper (1996). *Shaping Up*. April 11th.
19960502	**Serving size - beer** **Off-trade**	Article containing a prediction that there will be an increasing number of pack types for the major standard brands off-trade echoing the trend in premium lagers.	Off Licence News (1996) *A coming of age*. May 2nd: 12.
19961121	**Glass sizes (on-trade)** **Wine**	Article on Carlsberg-Tetley's strategy. A representative from the company stated that "dry-led" pubs (i.e. pubs with good food) are their main target market. Carlsberg-Tetley's can offer extra services such as tailor-made wine list, own-label wines, draft wines (wine boxes), and educational tastings for customers. Although they cannot control overpricing in pubs, the company is trying to encourage customers to use a 175ml glass instead of the more common 125ml glass as it appears to offer better value for money. The company suggests offering two sizes, calling the 175ml the standard and the 125ml the small.	Caterer & Hotelkeeper (1996). *Diving for Pearls*. November 21st.
19990817	**Glass sizes (on-trade)** **Opinion**	Article on a restaurant's experiences of using "over-sized lined" wine glasses. The restaurant introduced them in an attempt to be seen as giving value. However, it was found to be expensive in terms of glasses, and resulted in over-pouring. In addition, some customers were "quarrelsome" as they expected brim measures.	Caterer & Hotelkeeper (1999). *A Brief History of Tim.* June 17th.

Date	Topic	Content	Source
20001109	**Glass sizes (on-trade)** **Opinion/Trends**	Report on trends in on-trade wine glasses emerging from discussions with a selection of hotels and restaurants. Key findings: • Wine glasses are getting bigger. • Stems are getting taller. • "Bog-standard" glasses such as the 6oz Paris goblet are losing favour. • There is an increasing range of glass styles available.	Caterer & Hotelkeeper (2000). *Working Glasses*. November 9th.
20001123	**Glass sizes (on-trade)** **Opinion**	Opinion piece on selling wine by the glass. Wine retailer Logan reported selling four times the volume of wine by the glass compared to by the bottle. Although he offers the smaller 125ml glass size, Logan advises new businesses to stick with the 175ml measure for simplicity. Logan believes it is a mistake to offer wine only in the larger 250ml glasses popular with some brewery-owned pubs and restaurants, as it makes the cost per glass too high and may reduce profits because customers are less likely to buy a second glass.	Caterer & Hotelkeeper (2000). *A Glass Act*. November 23rd.
20010807	**Serving size – wine** **Opinion**	Article on a new service in all 17 M&C hotels in the UK that allows customers to select from 16 wines in the room minibar, and from a separate list called "Wine in Your Room" that allows customers to call room service and have wine from the list sent to their room. The service is reported to have been popular, particularly among female guests who are less likely to drink alone in the bar or restaurant. The introduction of 250ml wine glasses in the hotels is reported to have been welcomed as "guests can make one big glass last through their starters and their main course if they are eating in their room".	Caterer & Hotelkeeper (2001). *List Properties*. August 7th.
20040609	**Glass sizes (on-trade)** **Survey data**	Report of a survey (n=1,100 restaurants, hotels and pubs) finding that: • The 250ml wine glass was the "preferred size among retailers and customers". • Only 4% of pubs used 125ml wine servings, compared with 50% of pubs two years previously. • The proportion of restaurants using 250ml measures had doubled in two years, and the proportion of hotels using the larger measure had increased from 19% in 2001 to 58% in 2003. The survey also found an increase in popularity of wine by the bottle rather than by the glass, an increase in the popularity of pitchers of beer and wine, and a continuing rising trend in the number of double measures of spirits sold.	Caterer & Hotelkeeper (2004). *Wine Glass of Choice has Doubled in Size*. June 9th. [Cannot locate original survey]
20040614	**Glass sizes (on-trade)** **Survey data**	Report of survey data showing a trend for the move away from 125ml wine servings towards 250ml servings. The survey (n=1,100 restaurants, hotels and pubs) found that 90% used 250ml as standard, while a survey 2 years previously found that most on trade retailers used 125ml glasses, and only 29% used 250ml glasses.	The Publican's Morning Advertiser (2004). *Wine glass size doubles, says new research*. June 14th.
20050119	**Serving Size** **Opinion**	Report on the increasing popularity of long sweet drinks, pitchers and shooters. The increasing popularity of the shooter brand Corky's is highlighted. Opinion piece states that the reason behind its success is its low ABV (20%) compared to shooters like sambuca.	Withrington A (2005). Climbing the ladder. *The Publican's Morning Advertiser,* January 19th.

Date	Topic	Content	Source
20050607	**Glass size** **Opinion** **1/3 pint**	Article on the planned introduction of 2/3 pint measures, or 'schooners'. The London Drinker reported the industry's plan to introduce this measure is in an effort to attract females to drinking beer, but a survey by the Evening Standard suggested that only a third of female drinkers were interested in schooner measures.	Darby I (2005). Was a sip of media planning specialists enough for clients? *Campaign*, June 17: 12.
20051006	**Glass size** **Wine - opinion**	Report of a claim by the *Good Pub Guide 2006* that the trend of pubs moving away from 125ml wine measures towards 175ml and 250ml measures to make more money is putting the health of customers at risk. The Guide claims that this practice results in customers drinking more than they want to, and drinking more than is safe if they are driving.	Caterer and Hotelkeeper (2005). *The week in brief: row over bigger wine glasses*. October 6: 8.
20060405	**Bottle size – wine** **On-trade**	Report on the popularity and profitability of single serve wine bottles. AC Nielsen market research found that single-serve wine bottles (175ml, 187.5ml and 250ml) only represent approximately five per cent of all on-trade sales in the UK. They are, however, reported to be the fastest growing format with the 175ml measure, showing 67 per cent volume growth. Pernod Ricard, which sells some Jacob's Creek in single-serve format stated that "fractional bottles are a profitable way to retail wines in the on-trade… delivering more margin than RTDs at a similar retail price."	Withrington A (2006). *Mini Adventure*. The Publican's Morning Advertiser, April 5th.
20060824	**Glass sizes/Glass shape (on-trade)** **New size – 16oz**	Report on Diageo's UK on-trade launch of a new 16oz spirits and mixer glass. The company recommends 50ml of spirit and 200ml of mixer for a longer drink that is designed to appeal to consumers "during mid-tempo or low-key drinking occasions". The new glass was designed "along more masculine lines" to appeal to male drinkers in response to research that found that the highball glass was considered too feminine. A serving in this glass contains 2.2 units of alcohol. 12oz glasses in the same style were available "for female consumers and for those who would prefer to stick with 25ml measures". The report outlines Diageo's hope that the two sizes would become the standard spirit and mixer glasses across the UK, and their target of 18,000 UK outlets in the first year.	Cran D (2006). Diageo introduces a glass for the boys. *Harpers*, August 24th.
20061027	**Serving size** **Cider, on- and off-trade**	Report on cider. Key points: Multiple specialists have seen a 33 % rise in cider sales. Supermarkets have seen a 25% rise in sales. Sales in independents have only grown 1%. Magners has been unable to meet demand for its ciders, especially in 1-litre bottles, in the off-trade, and its famous pint bottle has not been made available to off-licences. Earlier in the year, successfully Morrisons re-merchandised cider in their stores with PET and cans on one fixture, and glass on another. The Co-op planned to introduce a premium bottled cider sector in stores.	Boggis C (2006). Cider's core element of success is snowballing. *Off Licence News*, October 27th: 32.

Date	Topic	Content	Source
20070900	**Serving size – wine** **Legislation, Opinion**	Report on the contravention of the 1988 Weights and Measures (Intoxicating Liquor) Order by a bar in Selfridges, Oxford Street that offered a "wine jukebox" allowing customers to sample from 52 wines in measures of 25ml, 75ml and 125ml. The Order, as amended in 1995, that stated that wine must only be served in 125ml (or multiples thereof) and 175ml measures. A representative of the bar complained that the law "makes no sense" and actually encourages consumers to drink more.	Caterer & Hotelkeeper (2007). Pressure grows for change in law on wine measures. September 6th.
20080130	**Glass sizes (on-trade)** **Wine**	Report of a bill proposed by Liberal Democrat MP Greg Mulholland for an amendment to Weights and Measures legislation that would require pubs, bars and restaurants to make 125ml measures of wine available, as he believes that 175ml and 250ml wine measures make customers less aware of how much alcohol they are consuming, and contribute to binge drinking.	Walton C (2008). MP calls for smaller wine glasses. *Caterer & Hotelkeeper*, January 30th.
20080414	**Glass sizes (on-trade)** **Survey data**	Report from the market research company CGA suggesting that the trend for larger wine measures in licensed premises may not be as pronounced as claimed in recent press reports. The study of 103,000 premises found that: • 30% offer 125ml measure. • 62% offer 175ml measure. • 24% offer 250ml measure. • 250ml was the predominant measure in branded venues only. • 125ml was the predominant measure in sports and social clubs with 54.5% of the market. • There was a 3.5% move away from the 125ml glass in the previous 12 months, mostly towards wine by the bottle. A CGA spokesperson stated that the evidence does not back up claims by the "health lobby" of irresponsible practice.	Wilmore J (2008). Nearly a third of venues still offer 125ml measure. *The Publican's Morning Advertiser*, April 14th. [Unable to locate survey.]
20080514	**Glass size** **Off-sales/home**	Report on E&J Gallo Winery's 'Rosé on the Rocks' campaign to encourage consumers to drink rosé over ice. The campaign, in a sponsorship tie-up with two large bagged-ice makers, was to feature the roll-out of half a million gift bags containing over-sized wine glasses and an ice tray.	Charles G (2008). E&J Gallo to run summer rosé activity. *Marketing*, May 14th: 4.
20081006	**Serving size** **Wine/New product**	Report of the introduction of the "glamorous and fun" Australian rosé sparkling wine brand Pink to on-trade sector following its success in the grocery sector. The 200ml size bottle, known as a Pink Piccolo, is exclusive to on-trade, and was designed to appeal to women aged 25-35 and to "tap into the emerging trend for sparkling wine and champagne served in smaller, single serve bottles".	Harpers (2008). Foster's debuts Pink Piccolo to UK on-trade. October 6th.

Date	Topic	Content	Source
20081205	**Glass sizes (on-trade)** **Wine/Legislation**	Report of the British Hospitality Association's (BHA) response to the government's new mandatory code on the promotion and sale of alcohol. A BHA spokesperson said that the code was designed to "deal with the problems of a very small minority of city pubs but inflicting unnecessary new rules and regulations on licensed premises", and stated that the requirement for licensed premises to offer 125ml wine measures would result in expense to restaurants to replace glasses. The spokesperson called the code "nanny state nonsense" and cast doubt on whether smaller glasses would have any impact on excessive drinking.	Thomas D (2008). Alcohol code is 'nanny state nonsense', says BHA. *Caterer & Hotelkeeper*, December 5th.
20090928	**Glass/Serving sizes (on-trade)** **Proposed legislation**	Report of Government proposals for beer, wine and spitits for sale in licensed premises in response to a consultation by the National Measurement Office. Proposals include: • Wines sold in a quantity of ≤75ml permitted to be sold in any quantity without quantity indications (for wine tasting and sampling sessions). • Replace existing specified measures for fortified wine with smaller 50ml and 70ml measures. • Specified measures of 25ml and 35ml for brandy to bring into line with other spirits. • 2/3 pint measures for beer and cider.	Harpers (2009). *New measures for wine sales*. September 28th.
20091008	**Glass shape** **NPD/Schooner**	Report on the activities of the BitterSweet Partnership which was created to increase the number of female beer drinkers. In response to a research finding that more women would consider drinking beer if the design and size of beer glasses was changed, the Partnership was working with a designer to design glasses that were more appealing to the female audience.	Hook S (2009). Girl glasses to be designed. *The Publican's Morning Advertiser*, October 8th.
20091105	**Serving size – wine** **Legislation, Opinion**	Report on changes to the specified quantities for wine on licensed premises in the Weights and Measures Legislation that was expected to come in to force in April 2010. The change was to legalise 'sips' and taster quantities of wine to be sold.	Sims F (2009). How Selfridges sommelier Dawn Davies took on the law - and won. *Caterer & Hotelkeeper*, November 5th.
20100104	**Off-trade/home pourers** **PH research**	Report on the findings of a series of experiments by the "Know Your Limits" campaign suggesting that people pour larger measures at home than they would be served on licensed premises. The experiments found that: • An average home serving of spirits was 57ml. • People poured an average 38ml when asked to estimate a single 25ml serving; the age group 31-50 were most generous, pouring an average of 41ml; men poured more than women (average 43ml versus 32ml). • Women were the most generous pourers of wine, serving the equivalent of the recommended daily limit for women in one glass.	Emmas C (2010). English drinkers pour double at home. *Harpers*, January 4th.
20100114	**Glass shape** **NPD/Half pint**	Report on the unveiling of the winning design in a competition run by the BitterSweet Partnership to design a half-pint glass to appeal to female consumers. Plans for production were in place.	Lewis R (2010). Public vote finds female-friendly half-pint glass. *The Publican's Morning Advertiser*, January 14th.

Date	Topic	Content	Source
20100611	**35cl Spirits bottles** **Serving size**	Report on spirit bottle sizes. 35cl bottles are reported to have been successful in independent and convenience stores. This size of bottle is considered to be more affordable for budget-conscious customers. 50cl bottles are also reported to be popular with independent retailers and their customers.	Holter G (2010). Small can be beautiful: Suppliers are excited about the potential of 50cl wine bottles and research backs this up. *Off Licence News*, June 11th: 31.
20100611	**50cl Wine bottles** **Serving size**	Report on the trial of a 50cl wine bottle in 600 Tesco Express stores. The bottle was developed as part of a strategic partnership between two companies and was offered across several brands from both portfolios. The stores offered a three for £10 promotion that allowed customers to mix and match brands. A company representative stated that the new bottle size was developed to respond to customers' "occasion driven purchases, such as midweek treats". The representative highlighted the opportunity for this size lies in its convenience and "obvious benefits for portion control". However, it was reported that the Tesco trail had failed to lead to interest from off-trade retailers.	Holter G (2010). Small can be beautiful: Suppliers are excited about the potential of 50cl wine bottles and research backs this up. *Off Licence News*, June 11th: 31.
20100730	**Glass sizes (on-trade)** **Wine**	Report of the trend predictions of James Salmon, general manager of ViVas in terms of on-trade glass-size. Salmon predicted that 125ml would become the standard wine serving size in response to government responsible drinking legislation. Salmon framed this as a positive for industry, as it: • Reduces the cost of entry into the wine category as the cost per glass comes down. • It encourages people to try wines as they don't have to spend so much. • It is more likely that people will have another glass of 125ml than another 175ml, increasing average spend. • Wine remains at ideal temperature longer.	Caterer & Hotelkeeper (2010). *ViVAS – Supplier Profile*. July 30th.
20100916	**Glass size** **Larger glass**	Report of a new branded Heineken glass, designed for beer to be served with "a continental style big head". The glass is larger than one pint, but has the pint level clearly marked, and is marked with information about the alcohol content of the drink "to promote responsible drinking".	Black R (2010). New Heineken glass for a perfect pour. *The Publican's Morning Advertiser*, September 16th.
20110818	**Glass size** **Schooner/Two-thirds**	Report of the launch of 2/3 pint glassware for Heineken, Amstel and Tiger brands in response to the legalisation of 2/3 pint 'schooner' measures for beer and cider.	Perrett M (2011). Heineken unveils new two-thirds glass. *The Publican's Morning Advertiser*, August 18th.
20111125	**Glass sizes (on-trade), Glass shape** **New size - Schooner**	Report of a new CE-approved 2/3 pint beer 'schooner' glass, among the first to be launched in the UK after the legalisation of 2/3 pint measures for beer and cider.	Frewin A (2011). Libbey two-third pint beer schooner glasses from John Artis. *Caterer & Hotelkeeper*, November 25th.
20120323	**Glass sizes**	Article on uptake of the 2/3 pint or 'schooner' measure across the UK. Although it is taking time to gain popularity, it is reported that some bars and pubs are pioneering the measure. The example is given of the Scottish brewer and bar company BrewDog which offers schooners in all of its six UK bars The company which produces its own glassware offers beers of 6% to 9% ABV in schooners. Some licensees have chosen to use BrewDog's glassware, but this is still relatively uncommon.	Gerrard N (2012). All aboard the schooner – the two-third pint measure. *Caterer & Hotelkeeper,* March 23rd.

Date	Topic	Content	Source
20120326	**Glass sizes (on-trade)** **New size - Schooner**	Report of Heineken's plans to deliver 500,000 new branded glasses to UK on-trade outlets in 2010 "to give licensees the opportunity to extend consumer choice and capitalise on the sales boost that a new drinking experience can offer."	Gerrard N (2012). Heineken to deliver 500,000 schooner glasses into on-trade in 2012. *Caterer & Hotelkeeper*, March 26th.
20120326	**Glass sizes (on-trade)** **New size - Schooner**	Report of consumer research by the brewer Molson Coors on 2/3 pint 'schooner' measures. The research found that: • 40% of British drinkers would order a 2/3 pint if it was on offer. • Only 1 in 10 was aware of schooner measures. • 77% of 18 to 34 year olds cited at least one benefit from ordering a schooner. • 25% of respondents like the fact that schooners offer less liquid/alcohol. • 13% of respondents said they would order a schooner with food. • 20% of respondents see price as a factor in choosing schooners. A representative from Molson Coors stated that these consumer insights highlight demand for 2/3 pints and present an opportunity for pubs and bars to increase sales. The article also reports on the Scottish brewer and bar company Brewdog that offers schooners in all six of its UK bars has seen schooners outselling pints, with their Nottingham bar selling 1,070 pints and 2,241 schooners in one month. The higher popularity of schooners is attributed to the fact that the bar's two core beers are typically offered in this measure.	Gerrard N (2012). All aboard the schooner – the two-third pint measure. *Caterer & Hotelkeeper,* March 23rd.
20120518	**Glass size** **Wine**	Report on the choice of a number of "high profile" on trade operators to drop 250ml servings of wine in favour of smaller or better-quality glasses, encouraged by the government's crack down on binge drinking. A representative from Bidendum anticipated a decline in the popularity of 250ml measures as restaurants opt for better margins through serving quality over volume.	Emmas C (2012). Super-size 250ml serve ditched by top operators. *Harpers Wine and Spirit*, May 18: 4.

APPENDIX 7: Changes in Glass Shape: Examples from the Alcohol & Hospitality Industries' Trade Press

Date	Topic	Content	Source
19950817	Glass sizes (on-trade), Glass shape	Discusses continuing trend towards bigger bowls in glass stemware, "although practicality is asserting itself in a shortening of stem length". Describes how long, elegant stems are still popular, but "are cropped by a centimetre or two to increase stability". Discusses how larger bowls and longer stems are becoming popular both in crystal ware and "at the mass end of the market" where increasing public knowledge and consumption of wine have led to decline in popularity of the Paris goblet.	Caterer & Hotelkeeper (1995). *Bowled statement*. August 17th.
19960411	Glass sizes (on-trade) Legislation/Wine	Discusses the "wide choice of style, quality and price" of glasses, and the impact of fashion on what glass shape customers prefer. "Even at the lower end of the price range in pubs, bars and banqueting suites, the Paris goblet with its cramped almost spherical bowl is being replaced by glasses with more elongated, tapered bowls. **The most important factor in the change of glass style in pubs and bars has been the introduction of calibrated glasses for selling wine by the glass". Summarises the 1995 legislation on glass served by the glass and how restaurateurs can avoid serving wine in a marked glass by first pouring it into a marked glass and then transferring it to the glass of their choice, or pouring it in legal measures from a marked carafe.**	Caterer & Hotelkeeper (1996). *Shaping Up*. April 11th.
19960502	Packaging Beer bottles vs cans	Reports on a repositioning exercise for Scorpion lager. Spokesperson quoted: "By moving the brand into 27.5cl bottle with a new distinctive label it is now making its mark in the premium packaged beer market, while producing a higher profit margin for the retailer." A brand manager for Miller Genuine Draft quoted on how bottles are outperforming cans.	Off Licence News (1996) *A coming of age*. May 2nd: 12.
19970710	Packaging beer	Release by Heineken of its best-selling beer "in a limited edition 50cl aluminium can "shaped like a pub glass"".	Baillie J (1997). The shape of things to come. *Packaging Week*, July 10th: 30.
19971100	Packaging beer	Reports on moves towards packaging innovations such as **an Amstel Light beer can shaped like a beer glass** and a can shaped like a coke bottle.	Darrington H (1997). Drinktec interbrau bigger than ever. *Food Manufacture*, November: 36.
19990826	Glass shape Stout – tulip-shaped	Launch by Guinness of **new tulip-shaped pint glass in the UK**. Currently used in Ireland, "the new 'high performance' glass features the brand logo twice".	Marketing (1999). *Briefs*. August 26th.
19990827	Glass shape Stout – tulip-shaped	Guinness' new tulip-shaped glass is "designed to create a smoother drink and more consistent head". Design was selected from 24 alternatives and will be rolled out in UK pubs.	Design Week (1999). *Digest*. August 27th:.4.

Date	Topic	Content	Source
20020405	Glass shape Opinion	Discusses how beers in Belgium have their own unique branded glass, resulting in "**an enhanced drinking session, with elevated esteem for the product and, for the brewer, a helpful nudge towards brand loyalty"**. Reports on how Interbrew has transferred the idea to the UK, with **embossed Stella glasses** that "add class to the glass and at the same time give brand-conscious youth a label to flaunt in front of their peers". Mentions moves by other brewers in same direction, and notes that Guinness has been using its own branded glass for decades.	Off Licence News (2002). *Right glass for the right beer*. April 5th:6.
20041127	Glass shapes Beer on-trade	Brewer Fuller, Smith & Turner claims that LONDON PRIDE has outstripped Pedigree as UK best-selling premium-strength cask ale. Describes Fuller's aims to consolidate London Pride's leadership position in 4% ABV and above beers by **increasing** marketing spend. **Reports that "a new fancy Continental-style beer glass had proved successful in attracting younger drinkers**."	Johnson A (2004). *Fuller's Takes Top Spot With Pride*. The Express, November 27th: 86.
20051224	Glass shape Opinion	Discusses "fundamental questions, such as: does the **shape** of a wine **glass** make a difference; does warming a brandy glass improve the flavour; and does it really matter whether a cocktail is shaken or stirred?".	Williams C (2005). Savour the flavour; The complex aroma of your festive booze owes as much to physics as to what's in the glass. *New Scientist*, December 24th: 54.
20060526	Glasses – Beer branded	Discusses a training session in which Belgian beers are offered in branded and unbranded glasses "to show how special glass shapes affect the aroma of beers."	Huddleston N (2006). Growing profits with specialities: The BSBP Speciality Beers Circuit Training day helped wise attendees up to the potential of this liquid gold mine. *Off Licence News*, May 26th: 40.

Date	Topic	Content	Source
20060824	Glass sizes/Glass shape (on-trade) New size – 16oz	Launch by Diageo of **new 16oz spirits and mixer glass** into the UK on-trade. "The bigger size means a larger spirits measure and longer drink - Diageo recommends 50ml of spirit and 200ml of mixer - which is designed to appeal to consumers during mid-tempo' or low-key drinking occasions". Targeted particularly at male drinkers, following research that found that the highball glass typically used for spirits and mixers "was thought to be too feminine in style". **The new glass is designed "along more masculine lines and the end product is the same height as a tulip pint glass, with a wide top and narrow base"**. A grid indentation near the top has "five lines representing the five aspects of the perfect serve: spirit, mixer, glass, ice and garnish" and is included in response to research which "showed that men like to have something to play with while holding a drink". Claims that in line with Diageo's policy on responsible drinking, the larger glass still contains **"only 2.2 units of alcohol",** less than a pint of lager (2.3 units) and a 250ml glass of wine (3 units). 12oz glasses in the same style will be available "for female consumers and for those who would prefer to stick with 25ml measures". Express hope that "in time the two sizes will become the standard spirit and mixer glasses across the UK, which will give the consumer greater consistency and better value for money".	Cran D (2006). Diageo introduces a glass for the boys. *Harpers*, August 24th.
20090811	Glass shape NPD	Describes distribution of more than 300,000 new Stella Artois chalice glasses to UK licensees. Glass is "tweaked to give more functional benefits, such as keeping the head for 45% longer and the beer 23% colder after 10 minutes", "shaped to retain the flavour of the beer" and made of toughened glass. InBev claims "research shows that pubs using the chalice glass experience a 14% sales increase" compared to other outlets.	Lewis R (2009). InBev improves Stella's chalice glass. *The Publican's Morning Advertiser*, August 11th.
20091008	Glass shape NPD/Schooner	Reports on how **"**The BitterSweet Partnership, created to get more women into beer", is working with a designer to create bespoke beer glasses to appeal to female drinkers. Spokesperson claims "Research indicates that a quarter of women would consider beer if glassware changed…It's not just the size of pints that puts women off, it's the whole design". Suggests manufacturers should take cues from the Continent, where different shaped glasses are used: "while many women don't like to drink beer in the UK, a fifth do opt for beer on holiday.""	Hook S (2009). Girl glasses to be designed. *The Publican's Morning Advertiser*, October 8th.
20100114	Glass shape NPD/Half pint	Reports on developments in glassware to appeal more to women. Claims that 31% of women in a survey said that beer packaging was "ugly and manly", with some quoted as saying they would"be more inclined to choose beer if it came in an interesting, quirky-shaped glass". Claims that "the way their drink is served" is the second biggest reason for drink choice among cocktail drinkers (46% compared with 7% of beer drinkers) and suggests that there is a need for the beer industry to offer alternatives to the pint glass. Refers to The BitterSweet Partnership's glassware competition, to **find "a new female-friendly half-pint glass**."	Lewis R (2010). Public vote finds female-friendly half-pint glass. *The Publican's Morning Advertiser*, January 14th.

Date	Topic	Content	Source
20100409	Glass shape New design	Describes first restyled branded Guinness glass a decade. Design is intended to make the glass "taller, slimmer and easier to stack", with a "thicker base for safety, better grip for consumers and improved head retention". Company claims that new branded glassware can result in a 4% increase in sales.	Lewis R (2010). New Guinness glass revealed: Diageo has improved its branded glassware for Guinness for the first time in a decade, but the tulip shape remains. *The Publican's Morning Advertiser*, April 9th.
20100831	Glass shape Research (summary)	Summarises research into effect of glass shape on drinkers' perceptions and consumption. "Business intelligence and mystery shopping company Retail Active" found that drinkers poured up to 80% more into a short wide glass than a tall slender glass of the same volume. Research by "Oxford University psychologist Professor Charles Spence found that people drink 88% more when consuming drinks from short wide glasses" because of the "vertical-horizontal illusion" in which people focus on heights rather than widths and over-estimate the vertical". Retail Active managing director states that "even experienced bar staff pour more alcohol into tumblers when estimating a shot of spirits".	Foottit L (2010). Glass shape can make people drink more. *The Publican's Morning Advertiser*, August 31st.
20110100	Glass shape Slender shape (beer)	Launch of new Heineken bottle and new unified global identity for bottles, glassware and cans The new bottle will come in "just five different volume sizes" and will be available in western Europe from the beginning of 2011 and across the rest of the world by 2012. The new bottle replaces the "XLN (extra long neck) and Heineken shortneck packaging" and is introduced in an embossed and a standard version. The embossment on the neck and back "not only looks good, but also adds a pleasing to-the-touch feel, whilst a distinctive embossed mark acts as a stamp of quality and authenticity". The new packaging visual identity also includes updates to key brand elements "including an ellipse curve, derived from Heineken's racetrack logo". Heineken's trademark green has been "enriched" and the red star emblem raised above the logo. The packaging introduces "sensory elements such as embossments, strategically placed indents and tactile ink, offering consumers aesthetic improvements, adding to the overall drinking experience". The tactile ink, created by a series of small raised dots on the surface of the can, is claimed to give the consumer "a better feeling in the hand, enhanced grip and help the brand appear more refreshing and recognizable". **The latest drinking glass features an embossed curve on the side which is claimed to add "a pleasant feeling when held. It also helps bar staff by providing a guidance point for how it should be held at the draught column, helping staff to create the 'perfect pour'". Claims that the new slender shape has also been proven to stay cool longer.**	www.thedrinksreport.com (2011). Heineken launches new bottle and new unified global identity for bottles, glassware and cans. January.

Date	Topic	Content	Source
20111125	Glass sizes (on-trade), Glass shape New size - Schooner	Launch of Libbey two-third pint beer schooner glasses. Described as among the first to be launched in UK to meet the new legal draught beer measure. The new size - between a half pint and a full pint – is expected to help "revive sales of alcohol, which fell by 13% in 2010 from 2004 levels". Two different glasses in the range, 'Endeavor' ("a robust, tall, slim stacking beer glass" at £1.90) and 'Munique' ("a stemmed beer glass for premium tipples" at £1.68).	Frewin A (2011). Libbey two-third pint beer schooner glasses from John Artis. *Caterer & Hotelkeeper*, November 25th.
20120322	Glasses Branded	Discusses how serving beer in branded glasses can lead to increased sales. "AB InBev research shows outlets that use the Belgian brand's new Stella Artois global chalice have enjoyed a net sales uplift of 7.1%". Reports on a Carlsberg UK poll, which reportedly found that "71% of customers believe pints served in correctly-branded glassware to be a clear sign of quality". Pubs and bars which have recently introduced the new Carlsberg glass are claimed to have seen sales rise by 11% "equivalent to an additional 29 pints per outlet, per week."	Bates J (2012). Rich man, pour man: Training barstaff to excel in serving beer correctly means happy customers and more money in the till. Morning Advertiser March 22nd: 42-43.
20120323	Glasses – Beer branded	Mentions launch of new branded glasses for Heineken, Amstel and Tiger brands this week.	Gerrard N (2012). All aboard the schooner – the two-third pint measure. *Caterer & Hotelkeeper,* March 23rd.
20120329	Glass shapes Ale	Launch of two new Greene King IPA variants: IPA Gold (4.1 % ABV), "for experimental younger drinkers", and IPA Reserve (5.4% ABV), "a full-bodied ale aimed at experienced cask-ale drinkers". Also reports on new toughened glassware for the IPA range, including tankard and tulip-shaped glasses.	Perrett M (2012). Greene King pulls out stops for IPA. *Morning Advertiser*, March 29: 20.
20120712	Glass shape	Four Roses (Bourbon) **drinks will be served "in branded jam jars"** at Blues Fest gigs in London and Manchester between 26th June and 6th July 2012 as part of the sponsorship. Claims that "this unique delivery has contributed to Four Roses' current +32% growth* in the UK".	Global Brands Ltd. (2012). *Four Roses bourbon unveiled as official Blues Fest 2012 sponsor*. July 12th. Online: http://www.globalbrands.co.uk/component/k2/item/37-four-roses-bourbon-unvelied-as-official-blues-fest-2012-sponsor.html.
20121013	Glass shape	Reports on Four Roses Bourbon targeting Christmas with a Four Roses Yellow Label gift pack (rsp: £19.47) with two jam jar glasses in Asda.	Porter J (2012). Alcoholic Drinks innovations: smoked porter and speakeasy-era bourbon. *The Grocer*, October 13th: 50.
20121013	Glass shape	Reports on how Four Roses' history and "unique jam jar serve" have contributed to the brand's current 35% growth in the UK.	Global Brands Ltd. (2012). *Four Roses bourbon.* Online: http://www.globalbrands.co.uk/brands/spirits/four-roses-bourbon.html [accessed 15 Oct 2012].

APPENDIX 8: UK Glassware Market Data Tables

Table B1 contains a snapshot of retail distribution of glassware in the UK (Key Note's 1999 analysis of 'Distribution' of glassware in the UK). The 'department or variety stores' category includes the following: "A significant development has been the advent of the home furnishing chains, e.g. MFI Homeworks, The Pier, Cargo Homeshops, Jerry's Home Stores, all of which have increased competition in the High Street."

Table B1: Retail distribution of glassware by value (%), 1998

Point of Purchase	% in 1998
Department or variety stores	40
Grocery multiples	25
Specialist, gift and factory outlets	20
Hardware and kitchen supply shops	3
Mail order and catalogue	4
Other	8
Total	**100**

Data sources: Key Note. *Glassware. Market Report.* 1999

Table B2: Consumer expenditure on glassware, tableware and household utensils at current prices (£m), 2000-2009

Year	£m	% change from previous year
2009	4,377	-3.50%
2008	4,534	-
2007	-	-
2006	4,767	3.80%
2005	4,591	-
2004	4,833	3.20%
2003	4,683	-
2002	-	-
2001*	1,074	10.30%
2000*	974	-

*for third quarter only

Data sources: ONS Consumer Trends 2009, 2006; ONS no date (In: Keynote. *Non-Food Sales in Supermarkets. Market Assessments*. 2010, 2008, 2006, 2002)

Table B3: Average weekly UK household expenditure on glassware, tableware and household utensils (£), 2000-2008

Year	£
2008	1.30
2007	1.50
2005/2006	1.60
2003/2004	1.60
2002/2003	1.60
2000/2001*	5.00

*expenditure on kitchen and garden equipment and household hardware

Data sources: ONS Family Expenditure Survey 2009, Family Spending 2008, 2006, Expenditure & Food Survey 2003/2004, 2002/2003, Family Spending 2000/2001 (In: Key Note. *Glassware. Market Reports.* 2011, 2009, 2007, 2005, 2004 & 2002)

Key Note's 1999 and 2003 analysis of 'Consumer Penetration' of glassware in the UK, (in two reports only):

Table B4: Households owning and purchasing glassware (% of adults), 1998		
Glassware/Crystal (includes tumblers etc.)	**1998**	**2003**
Have or own	72.4	75.8
Bought new in last 12 months	7.0	7.4
First time buyer	1.8	1.6
Bought as replacement	3.5	3.8
Amount spent in previous 12 months	**1998**	**2003**
£100 or more	0.3	0.3
£50-£99	0.4	-
£30-£49	0.8	-
£20-£29	1.2	-
Under £20	4.1	4.6
Household Income (per annum)	**1998**	**2003**
£15,000+	-	83.4
£7,000-£14,000	-	75.8
£6,999 or less	-	65.7
Social Grade		
AB	85.9	85.7
C1	77.0	79.8
C2	70.2	72.7
D	62.5	66.9
E	56.0	59.8
Household Size	**1998**	**2003**
1 person	66.1	-
2 persons	74.5	-
3 persons	73.6	-
4 persons	75.8	-
5 or more persons	67.4	-
Age	**1998**	**2003**
15-19	-	58.9
20-24	-	67.3
25-34	-	73.7
35-44	-	77.4
45-54	-	83.4
55-64	-	80.3
65 and over	-	76.6

Data Source: Target Group Index BMRB International Ltd, 1998, 2003 (In: Key Note *Glassware. Market Report*. 1999 & 2004)

Table B5: UK retail sales/UK market by value of glass tableware and ornamental ware at current prices (£m at retail sales price), 1990-2010											
Year	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Sales (£m at rsp)	335.8	216.3	-	-	-	-	-	-	-	334	340
% change year-on-year	-0.4	-	-	-	-	-	-	-	-	-	1.8
Value (£m at rsp)	-	-	-	303	306	310	318	321	327	334	338
% change year-on-year	-	-	-	-	1	1.3	2.5	0.9	1.9	2.1	1.2
Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Sales (£m at rsp)	345	358	358	356	255	356.5	354	354.5	355	355.5	-
% change year-on-year	1.5	3.8	0	-0.6	-0.3	0.4	-0.07	0.1	0.1	0.1	-
Value (£m at rsp)	342	-	-	-	-	-	-	-	-	-	-
% change year-on-year	1.2	-	-	-	-	-	-	-	-	-	-

Data sources: Key Note. *Glassware. Market Reports.* 2011, 2009, 2007, 2005, 2004, 2002, 1999 &1991

Table B6: UK imports and exports of drinking glasses by value (£000), 1997-2010						
Year	**UK Imports Intra-EU (£000)**	**UK Imports Extra-EU (£000)**	**UK Imports Total (£000)**	**UK Exports Intra-EU (£000)**	**UK Exports Extra-EU (£000)**	**UK Exports Total (£000)**
2010	52,953.9	37,443.1	90,397.0	75,84.6	5,168.1	12,752.7
2008	61,737.3	32,000.5	93,737.8	94,24.2	4,231.8	13,656.0
2006	61,136.0	23,176.0	84,312.0	75,39.5	5,226.1	12,765.6
2004	57,921.0	22,420.0	80,341.0	13,056.0	5,952.0	19,008.0
2003	52,491.0	28,633.0	81,124.0	8,286.0	7,180.0	15,466.0
2000	43,200.0	20,800.0	64,000.0	20,500.0	15,800.0	36,300.0
1997	45,557.0	17,078.0	62,635.0	20,742.0	22,324.0	43,066.0
1998	42,124.0	19,546.0	61,670.0	18,417.0	23,428.0	41,845.0

Data sources: Overseas Trade Statistics, HM Revenue & Customs (In: Key Note. *Glassware. Market Reports.* 2011, 2009, 2007, 2005, 2004, 2002 & 1999)

APPENDIX 9: Summary of methodology

This report is based on the General Household Survey data sets from 1990-1991 to 2005. These conversion factors can be applied to data from other sources, depending on the information collected.

Table C1: Conversion factors for beer, shandy and wine: 1990-2005

Year	Wine: unit equivalent per glass	Beer, lager, stout, cider: unit equivalent per half pint of draught, canned and bottled beer	Shandy
1990	1.39	1.12	0.56
1991	1.43	1.13	0.56
1992	1.47	1.14	0.57
1993	1.51	1.14	0.57
1994	1.55	1.15	0.58
1995	1.60	1.16	0.58
1996	1.64	1.16	0.58
1997	1.68	1.16	0.58
1998	1.72	Varies according to type of beer: see below	
1999	1.78		
2000	1.84		
2001	1.89		
2002	1.95		
2003	2.01		
2004	2.08		
2005	2.13		

Notes:

The volumes of canned and bottled beers were coded by interviewers in the GHS until 1997. This continued for bottled beer after 1998 but not for canned beerswhere standard assumptions were made.

Wine estimates are based on changes in glass size and ABV shown in Section 2.3.2 of this report.

From 1998 to 2005, the unit equivalent of half a pint of normal strength beer, lager, cider or shandy is assumed to be 1.1 units per half pint of draught beer, 1.3 units per half pint of canned or bottled beer.

Where volume is not known, a small can is assumed to be equivalent to 1.5 units, a large can equivalent to 2 units, a bottle of beer equivalent to 2 units.

From 1998 to 2005, the unit equivalent of half a pint of strong beer, lager, cider or shandy is assumed to be 1.8 units per half pint of draught, canned and bottled beer.

Where volume is not known, a small can is assumed to be equivalent to 2.1 units, a large can equivalent to 2.9 units, a bottle of beer equivalent to 2.9 units.