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# **The economic outlook for the UK drinks sector and the impact of the changes to excise duty and VAT announced in the 2008 Budget and Pre-Budget Report**

February 2009

## EXECUTIVE SUMMARY

This report quantifies the economic contribution of the UK drinks industry and the outlook for the sector in the coming years. It then looks specifically at the impact of tax changes announced in the 2008 Budget and PBR. It considers the impact of increasing duty on alcohol prices and the response of demand and it investigates the impact on output, employment and tax receipts.

The main points are:

- The drinks industry ((both manufacturing and the parts of retailing which is dependent on the sale of alcohol) supports £28.6 billion in GDP in the UK economy (through direct and multiplier effects). This is 2.0% of the UK's total output.
- In total, 668,000 people are employed in the production and retailing of alcohol. Of these, 31,000 work in drinks production. In the on-trade (pubs, restaurants and hotels etc) 546,000 people and in the off-trade (supermarkets and off-licenses) 91,000 owe their jobs to the sale of alcohol. Including indirect and induced jobs, over 1.8 million jobs in the UK economy are supported by the drinks industry.
- In the early 1980s recession, consumer spending on alcoholic drinks fell by 9.8% over three years. In the recession of the early 1990s, real consumer spending on all alcohol fell by 8.9% over four years.
- Based on the deteriorating economic outlook and our latest forecasts, alcohol sales are expected to fall by 3.7% in 2008/9. This will contribute 0.1 percentage points to the fall in Gross Domestic Product (GDP) this year (or around £1.4 billion). It will lower employment by nearly 25,000 people. Sales are forecast to fall for the subsequent three years with real consumer expenditure on alcohol £3.3 billion less by 2012/13.
- The 2008 Budget and PBR policy changes will increase the price consumers pay for alcohol by up to 17% over the next five years. This at a time when real household disposable income is expected to grow very slowly due to the recession.
- Relative to a policy of no change, the increases in excise duty and VAT announced in 2008 are expected to lower sales of alcoholic drinks by between 11.5% and 12.4% by 2012/13 (depending on whether excise duty remains unchanged in 2009/10 or rises by 2%).
- Employment in the drinks industry is predicted to fall by between 75,000 and 80,000 people over this period as a result of the 2008 Budget and PBR policy changes and announcements. This figure could increase to as much as 120,000 if duty pass-through in the on-trade continues at rates calculated in our previous studies.
- The changes announced in the Budget and PBR (including the duty escalator) are predicted to decrease fiscal receipts to the Exchequer by £18 million in 2008/9 as higher duty payments are offset by lower VAT, employment and corporation tax receipts. In five years time

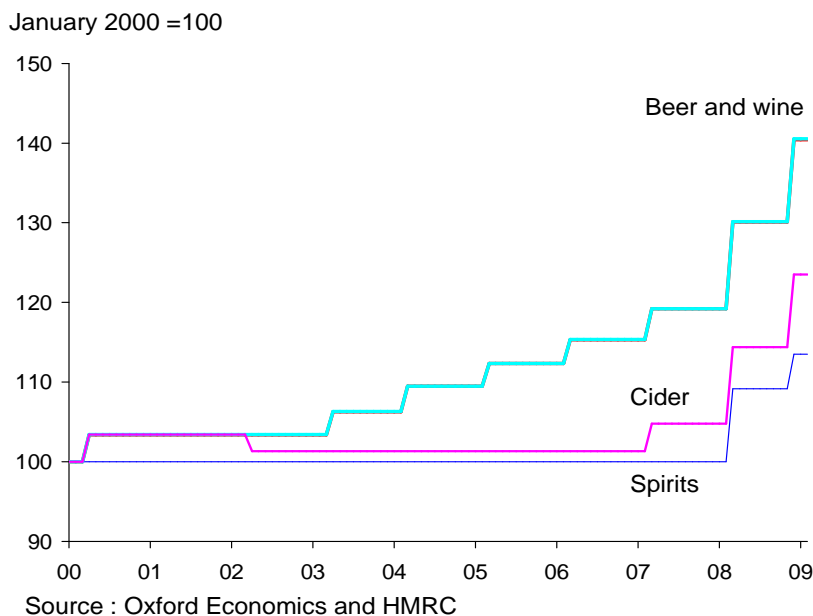
(2012/13) total alcohol-related receipts are expected to be only £190 million to £213 million higher than if the 2008 policy changes had not been implemented. This is only a very small gain compared to the overall cost to the trade.

- The fiscal calculation has been based on conservative assumptions about pass-through of excise duty. If duty pass-through in the on-trade continues at rates previously calculated by previous research, the public finances would be £600 million worse off in 2008/9 and up to £744 million worse off after five years (2012/13).
- In real terms, excise duty and VAT receipts are predicted to fall by £175 million by the end of 2010/11. This contrasts with the Treasury's expectation of a £1.5 billion increase at the time of the March Budget.

## 1. Introduction

In the 2008 Budget, the Chancellor announced that duty rates on all alcoholic drinks would increase by 9.1% from 17 March 2008. In the Pre-Budget Report (PBR) on 24 November 2008, the Chancellor increased excise duty on beer, cider and wine by a further 8% and spirits by 4%. The declared purpose of this PBR increase was to offset the reduction in Value Added Tax (VAT) from 17.5% to 15% between December 2008 to December 2009 and to hold prices broadly unchanged. The rise in duty will be maintained after December 2009 when the VAT change is reversed. As a result, excise duty on beer, cider and wine has increased by 17.8% since the beginning of March 2008 (Chart 1-1). The duty on spirits has increased by 13.5% over the same period.

**Chart 1-1: Excise duty on alcoholic drinks in the UK<sup>(a)</sup>**



(a) The duty rate on beer is that applicable to breweries producing over 60,000 Hectolitres. The cider rate is that applicable to still cider of strength 1.2% - 7.5% or sparkling up to 5.5%.

The Chancellor also announced in the March 2008 Budget he planned to increase alcohol duty rates by 2 per cent above the rate of inflation (RPI) in subsequent years. Clearly, future rates of inflation are unknown at the present, so we have used the economic forecasts that the Treasury uses in the PBR. The Treasury predict RPI inflation in the year to September will be -2.25% in 2009, 2.5% in 2010, 4% in 2011, 3.5% in 2012 and 3.5% in 2013.<sup>1</sup>

This report briefly quantifies the economic importance of the UK drinks industry and the outlook for the coming years. It then considers the impact of the measures announced in the March 2008 Budget and the November PBR. It examines the impact of increasing duty on alcohol prices and the response of demand. Finally the report investigates the impact on overall tax receipts.

<sup>1</sup> See Table B1: Economic assumptions for the public finance projections on page 186 of the 2008 Pre-Budget Report.

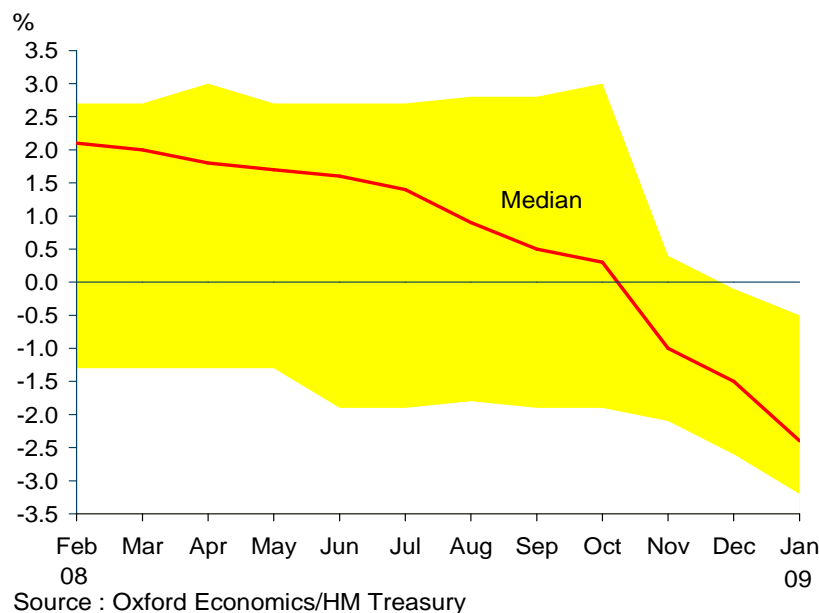
## 2. Economic impact and outlook for the drinks sector

This section begins by looking at the macroeconomic backdrop which the drinks sector faces. It investigates how consumer spending on alcoholic drinks has behaved in past recessions. It predicts how sales volumes will fare over the next five years. It looks at the importance of the drinks industry to the UK economy, both as a generator of economic activity and employer. Finally, it investigates how the predicted losses in sales volume will impact the sector's contribution to employment and Gross Domestic Product (GDP).

### 2.1. General macroeconomic outlook

According to the preliminary GDP estimate released on 23 January 2009 the UK economy entered recession in the second half of 2008. GDP is estimated to have fallen by -0.6% in 2008Q3 and -1.5% in 2008Q4.

**Chart 2-1: Median and range of forecasts for annual GDP growth in 2009**



The outlook for the UK economy in 2009 is bleak. Every month the Treasury collates and publishes<sup>2</sup> over forty organizations' economic forecasts. Chart 2-1 shows how the median (red line) and range (yellow area) of these organizations' GDP growth forecasts for 2009 have evolved over time. It shows expectations for growth have been revised downwards, particularly after October 2008. The latest (January) median forecast is that GDP will contract by -2.4% in 2009. The most optimistic organization

<sup>2</sup> HM Treasury, (2009), 'Forecasts for the UK economy: A comparison of independent forecasts', January

believes the economy will contract by -0.5% and the most pessimistic by -3.2%. HM Treasury's November PBR forecast was for a contraction of between to  $-3\frac{1}{4}\%$  and  $-1\frac{1}{4}\%$ .

A key driver of the UK economy entering recession has been weaker consumer spending. This reflects three main factors. First, weak real income growth due to higher food, energy and import prices. Second, the tightening in credit conditions, as lenders have raised loan rates and reduced the availability of new lending for riskier borrowers. Third, lower house and equity prices have reduced households' wealth and ability to borrow.

Consumer spending is expected to decline in 2009. In January, the median expectation of the forty organizations HM Treasury collect forecasts from was for private consumption growth to fall by -1.9% in 2009. This reflects expectations that a rise in unemployment will cause real household income to decline. This will more than offset the stimulus to demand of falling food and energy prices. Forecasters also expect consumer spending to be restricted by an increase in the rate at which households save their income. This reflects a lower ability to borrow (due to credit conditions remaining tight), so households will have to save up to undertake major purchases. The forecasting organizations also expect consumer confidence to fall, given the increased level of uncertainty about the future course of the economy and households' income levels.

## 2.2. Likely impact of the recession on drinks sales

With consumer spending forecast to fall in 2009 and remain subdued in 2010, sales of alcoholic drinks are already declining. There are two ways we can try to judge the extent to which drinks sales volumes will fall. The first is to look at how consumer spending on drinks has behaved in past recessions. Chart 2-2 shows the annual growth in GDP and real consumer spending on alcohol<sup>3</sup> since 1960. In the three periods when GDP falls (1974 and 1975; 1980 and 1981; and 1991), real consumer spending on drinks also fell. In the early 1980s recession, real consumer spending on alcoholic drinks fell by 9.8% over three years. In the recession of the early 1990s, real consumer spending on all alcohol fell by 8.9% over four years.

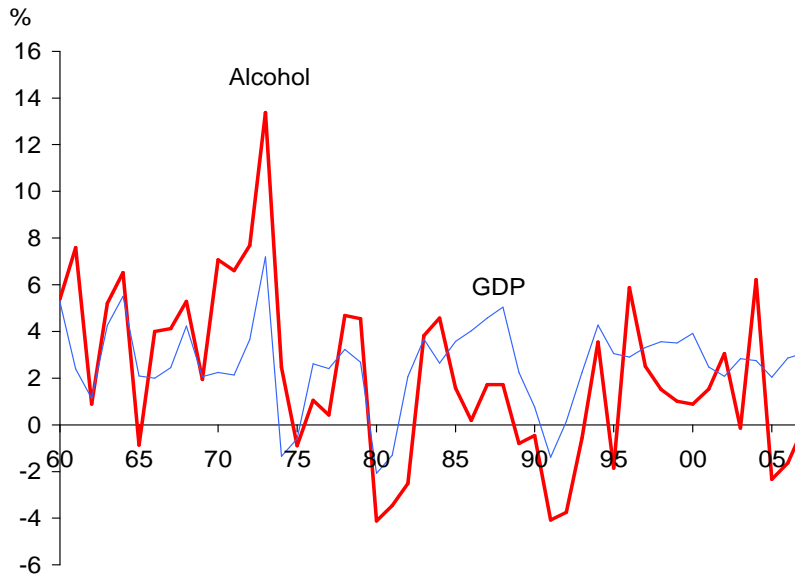
Annual data are available on real consumer spending by each drink type (split by retail location) from 1965 to 2007. Table 2-1 shows the average rate at which real spending grows in the 38 years in which GDP has increased (Column 2) and the 5 years in which it has decreased (Column 3). In the average year when GDP falls, real spending on all alcohol fell by 2.0%, regardless of location. Looking at the individual drinks, the sharpest falls in real spending in negative growth years occurs on spirits, declining by an average of -3.1% (particularly in the on-trade (-4.5%)). On average, real spending on beer and cider has fallen by -2.4% when economic activity declines, with the off-trade showing the sharpest falls historically (-5.1%). Although spending on wine has increased on average in years when

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<sup>3</sup> Consumer spending on alcoholic drinks data are sourced from ONS (2008), 'Consumer Trends, Quarter 3 2008', No. 50.

economic activity contracts (0.5%)<sup>4</sup> this increase must be compared to 5.8% growth in years in which GDP increases.

Chart 2-2: Annual growth in real GDP and real consumer spending on alcohol



Source : Oxford Economics and ONS

Table 2-1: Average growth in real consumer spending in years with positive and negative GDP growth between 1965 and 2007

	In years in which GDP growth was positive	In years in which GDP growth was negative
<i>Column 3</i>	<i>Column 2</i>	<i>Column 3</i>
<b>All drinks</b>	<b>2.2%</b>	<b>-2.0%</b>
-o/w off-trade	3.8%	-2.0%
-o/w on-trade	1.6%	-2.0%
<b>Spirits</b>	<b>3.1%</b>	<b>-3.1%</b>
-o/w off-trade	3.8%	-0.4%
-o/w on-trade	2.5%	-4.5%
<b>Wine</b>	<b>5.8%</b>	<b>0.5%</b>
-o/w off-trade	4.4%	-0.9%
-o/w on-trade	10.6%	2.4%
<b>Beer and cider</b>	<b>0.5%</b>	<b>-2.4%</b>
-o/w off-trade	3.0%	-5.1%
-o/w on-trade	0.0%	-2.0%

Source: ONS and Oxford Economics

<sup>4</sup> The rise over the three recessionary periods reflects a large rise in the 1980s (which is likely to reflect wines transformation to a mass market drink). Sales fell in the recessions of the early 1990s and mid-1970s.

An alternative way of judging how real consumer spending on alcoholic drinks will behave in 2009 and beyond is to use an econometric model of the demand for each drink-type. These are estimated using actual data for the past (and are described more fully in Section 3) and forecasts for macroeconomic variables from Oxford Economics' UK macroeconomic model. Combining the two enables us to generate predictions for how real consumer spending on alcoholic drinks will change over the next few years.<sup>5</sup> Table 2-2 shows real consumer spending of alcoholic drinks is expected to fall by -3.7% in 2008/9, reflecting the large rises in excise duty, VAT changes after December and the deterioration in the state of the economy. In the next financial year, spending on drinks is expected to fall by 2.1%, reflecting the recession and an assumption (for illustrative purposes) that excise duty increases by 2% in the Budget. In 2010/11, the return of VAT to 17.5%, an assumption that excise duty is increased at the PBR forecast for RPI plus 2% offset the return of the economy to positive economic growth causing real consumption spending to fall by -2.0%.

In the years further out into the future, there is less uniformity about the forecasts for spending on the various drink types. The forecast for each drink is driven by two major factors. First, the impact of the duty escalator rises on the price consumers pay (which depends on duty's share of the retail price). Demand responds according to the own-price elasticity used for each drink. Second, the longer term trend in spending on each drink. As the economy returns to trend growth rates, the models tend to predict growth rates similarly to those seen in the past.

**Table 2-2: Forecasts of the annual change in real consumer spending on alcoholic drinks**

	2008/9	2009/10	2010/11	2011/12	2012/13	Cumulative loss of sales over the five years (in 2003 prices)
Beer and cider	-3.3%	-2.5%	-4.4%	-1.8%	-0.7%	£-2,673 mn
Spirits	-3.0%	-2.4%	-3.1%	-1.6%	-0.2%	£-1,041 mn
Wine	-4.4%	-1.6%	1.3%	1.8%	4.3%	£366 mn
Total	-3.7%	-2.1%	-2.0%	-0.4%	1.3%	£-3,348 mn

Source: Oxford Economics

These forecasts of real consumer spending produce excise duty receipt projections similar to those published in the PBR. This is a surprising given the differences in the own-price elasticities used here and those estimated by Huang (2003). Indeed at the time of the PBR, HMRC revised down their Budget forecasts for 2008/9 and 2009/10 by £300 million each year. It would appear that HMRC have used considerable judgement in their forecasting of excise receipts, rather than simply following the predictions that flow from Huang's (2003) model.

Although total excise and VAT receipts on alcohol are predicted to rise in nominal terms over the next

<sup>5</sup> Forecasting the depth and duration of any recession is a very difficult task. Should the deterioration in the state of the economy be sharper or last longer than currently predicted, actual spending on alcoholic drinks will be worse than is forecast in Table 2-2.



three years, what this tax revenue can purchase actually declines due to inflation. In real terms, excise duty and VAT receipts are predicted to be £175 million lower by 2010/11. This contrasts with the Treasury's expectation of a £1.5 billion rise at the time of the March Budget and the introduction of the escalator.

### 2.3. The contribution of the drinks industry to UK GDP

The alcohol industry is estimated to have directly contributed just under £13 billion to UK GDP in 2007 (Table 2-3). Just over two thirds (68%) comes from on-trade sales, 20% from production and 12% from off-trade sales. Split by drinks type, beer and cider contribute the most at 44%, spirits 29% and wine 28%. The alcohol production figures are sourced from the ONS Annual Business Inquiry (ABI).<sup>6</sup> The retailing distribution figures relate to each drinks' share of that sector's turnover (appropriately excluding excise duty and VAT).<sup>7</sup>

**Table 2-3: The alcohol industries' direct contribution to GDP in 2007**

	Manufacture	Hotels and restaurants	Supermarkets and off-licenses	Total
	(£ million)	(£ million)	(£ million)	(£ million)
Beer and cider	495	4,772	378	5,645
Spirits	2,100	1,276	376	3,752
Wine	N/A <sup>(1)</sup>	2,858	815	3,673
Total	2,595	8,805	1,569	12,968

Source: Oxford Economics and ONS

<sup>(1)</sup> The ABI data on wine manufacture (SIC15.93) and cider and other fruit wines manufacture (SIC15.94) are suppressed for confidentiality reasons.

In practice, the economic impact of the drinks industry on the UK economy is larger than shown as it makes purchases from UK-based suppliers and its' staff spend their wages in retail and leisure outlets. Both of these impacts generate economic activity and employment. The standard way of calculating the size of these additional impacts is to use what are known as economic multipliers. The supply linkage multiplier (sometimes known as the indirect multiplier) reflects the impact of the industry's purchases of inputs from its UK supply chain. The consumption (or induced) multiplier shows the impact of the drinks industry's staff and those directly in its supply chain consumer spending.

Measuring the impact of the drinks industry using multipliers derived from the ONS (2002)<sup>8</sup> analytical tables is not straight forward as the drinks manufacturers are in both the on-trade and off-trade

<sup>6</sup> We have concerns over the accuracy of the 2007 ABI figure for breweries' GDP. The 2007 gross value added figure was 60% below the 2006 figure of £1,241 million, albeit that turnover only fell by 14% and employment by 11%.

<sup>7</sup> Data on consumer spending on each drink from Consumer Trends and combined with ABI data on retailers' turnover.

<sup>8</sup> ONS (2002), 'United Kingdom Input-Output Analyses: 1995 Analytical Tables', May.

retailers' supply chains. We therefore calculate the total amount of GDP the drinks industry supports by combining the estimate of direct GDP in Table 2-3 with the multipliers in Table 2-4 for the retail parts of the trade. On this basis, we believe the drinks industry supported £28.6 billion of UK GDP in 2007 (or 2.0% of total).

**Table 2-4: Multipliers sourced from the ONS (2002) input-output analytical tables for the drinks industry**

Industry	Supply linkage multiplier	Consumption multiplier
Alcoholic beverages	2.13	3.01
Hotels, catering, pubs etc	1.60	2.74
Retail distribution	1.65	2.88

Source: ONS (2002)

The relationship between consumer spending, UK alcohol producers' and retailers' output, their purchases from their supply chain and their staff's spending of their wages is complex. However if we undertake a simple calculation and map our predictions for real consumer spending on alcoholic drinks in Table 2-2 to the size of GDP supported by the drinks industry, it suggests UK GDP will fall by 0.1% in 2008/9 as a result of the loss of sales. The impact on UK GDP will be about half that size in 2009/10.

## 2.4. The importance of the drinks industry as an employer

The ONS Annual Business Inquiry for 2007 indicates 31,000 people were employed in the UK manufacturing alcoholic drinks. This is 0.1% of total employment. Just over half (52%) were employed in production of beer, 35% in spirits, 6% in cider and wine and the remainder (6%) making other drinks (Table 2-5).

**Table 2-5: Numbers employed in the production of alcohol in the UK, their average gross wage and employment tax payments in 2007**

SIC codes	Type of manufacturing industry	Average employment in 2007 (000s)	Gross annual pay in 2008	Income tax in 08/09	Employee NICs in 08/09	Employer NICs in 08/09	Total employment taxes
15.9	All beverages	48	£33,334	£5,460	£3,066	£3,688	£12,194
Of which: containing alcohol							
15.91	Spirits	11	£33,528	£5,499	£3,087	£3,693	£12,794
15.93	Wines and	2	N/A				
15.94	cider						
15.96	Beer	16	£33,712	£5,535	£3,108	£3,716	£12,359

Source: ONS' Annual Business Inquiry, Annual Survey of Hours and Earnings and HMRC tax rates

Some of this employment is in rural communities, helping to sustain them by providing local employment where there are few alternative job opportunities. In England and Wales DEFRA<sup>9</sup> categorize electoral wards by a rural versus urban classification. We have downloaded employment data for each of the drinks producing industries by ward and matched this to the classification. It shows 39.5% of wine makers, 18.8% of cider makers and 9.3% of malt producers are employed in areas classified as villages, hamlet and isolated dwellings (Table 2-6). This compares to 6.3% of the jobs in all industries in England and Wales.

**Table 2-6: Cider making, vineyard and malt manufacturing employment by DEFRA's urban versus rural classification in 2007 in England and Wales**

	Wine		Cider		Malt		All <sup>(1)</sup>
	Employees	%	Employees	%	Employees	%	%
Urban	43	7.6	107	7.9	1,338	76.6	78.0
Town and Fringe	281	49.7	983	72.3	41	2.3	6.7
Village, Hamlet & Isolated Dwellings	223	39.5	256	18.8	163	9.3	6.3
Unknown	18	3.2	14	1.0	205	11.7	9.0
Total	565	100.0	1,360	100.0	1,747	100.0	100.0

Source: NACM, ONS and Oxford Economics

(1) All industries in England and Wales.

The Scottish Executive classifies employment in parliamentary constituencies into various urban versus rural classifications. We have labelled each constituency according to the largest classifications. Table 2-7 shows 5.8% of all spirits employment is undertaken in remote rural constituencies. A further 11.9% of spirits employees work in constituencies classified as 'accessible rural'. The two combined (17.7%) are higher than the figure for all industries' employment in Scotland (13.0%)

**Table 2-7: Employment in the spirits industry in Scotland categorised by urban versus rural classification in 2007**

Rural versus urban classification	Number of employees	%	All industries (%)
Remote Rural	504	5.8	6.2
Accessible Rural	1,037	11.9	6.8
Accessible Small Towns	23	0.3	0.8
Other Urban Areas	3,835	43.9	34.2
Large Urban Areas	3,336	38.2	52.0
Total	8,735	100	100

Source: Oxford Economics

<sup>9</sup> See [www.defra.gov.uk/rural/ruralstats/rural-definition.htm](http://www.defra.gov.uk/rural/ruralstats/rural-definition.htm).

The sale of alcoholic drinks also creates employment in the wholesale and retail sector. In 2007, hotels and restaurants (the Standard Industrial Classification which includes pubs and bars) employed 1.9 million people. Supermarkets and off-licenses employed a further 1.1 million and 34,000 respectively. We estimate how many of those people owe their jobs to the sale of alcohol by calculating the share of each industry's turnover alcohol is responsible for (after excluding excise duty and VAT). We take this share of employment as being due to the sale of alcoholic drinks. Sales of beer and cider, wine and spirits provided 15%, 4% and 9% respectively of the hotels and restaurants sector's (which includes pubs) revenue in 2007. From this we estimate 546,000 people in the on-trade owe their jobs to the sale of alcoholic drinks (Table 2.9). Sales of alcoholic drinks' share of supermarkets' and off-licenses' combined total revenue is 8%. This equates to 91,000 people in the off-trade.

**Table 2-8: Total numbers of people employed in retailing outlets that sell alcohol, their average gross annual wage and employment tax payments**

SIC codes	Type of industry	Average employment in 2007 (000s)	Gross annual pay in 2008	Income tax in 08/09	Employee NICs in 08/09	Employer NICs in 08/09	Total employment taxes
H	Hotels and restaurants	1,931	14,929	£1,779	£1,042	£1,312	£4,132
52.11	Supermarkets	1,098	13,145	£1,422	£845	£1,084	£3,351
52.25	Retail sale of alcoholic and other beverages	34	10,021	£788	£530	£684	£2,001

Source: ONS Annual Business Inquiry, Annual Survey of Hours and Earnings and HMRC tax rates

**Table 2-9: Estimate of employment in the on-trade and off-trade due to alcohol sales in 2007**

	Share of on-trade turnover	Employment in the on-trade due to alcohol (000s)	Share of off-trade turnover	Employment in the off-trade due to alcohol (000s)
Beer and cider	15%	296	2%	22
Spirits	4%	79	2%	22
Wine	9%	177	4%	47
<b>Total</b>	<b>28%</b>	<b>546</b>	<b>8%</b>	<b>91</b>

Source: Oxford Economics

As with the industry's contribution to GDP, the drinks sector will also create jobs in its supply chain and through its staff's purchases at retail and leisure outlets. A number of other studies have quantified the number of people employed in the alcohol manufacturers' supply chain. Ernst and Young (2006)<sup>10</sup> find the brewing sector employs 32,000 people in its supply chain. DTZ Pieda Consulting (2003)<sup>11</sup> find Scotch whisky production employs 34,000 people in its supply chain. The National Association of Cider Makers estimate 5,000 people are employed in cider producers supply chain. The Wine and Spirit Trade Association estimate that 30,000 worked in the wine supply chain in 2007. But we are unaware of any estimates for the retailing side's supply chain.

To produce an estimate of the total employment supported by the drinks industry we combine the estimates of direct employment in the drinks manufacturing industry and the proportion of those in the retailing sector who owe their jobs to the sale of alcohol with the multipliers in Table 2-4. This suggests 1,851,000 jobs are supported by the drinks trade (Table 2-10). Of these, 542,000 are in the supply chain and 642,000 as a result of the drinks industry and its supplier's staff spending their wages.

**Table 2-10: Total employment supported by the drinks industry**

	Direct	Indirect	Induced	Total
Manufacture	31	30	32	93
Hotels and restaurants <sup>(1)</sup>	546	385	565	1,496
Supermarkets and off-licences <sup>(1)</sup>	91	60	111	262
<b>Total</b>	<b>668</b>	<b>542</b>	<b>642</b>	<b>1,851</b>

Source: Oxford Economics

<sup>(1)</sup> The direct jobs in the on-trade and off-trade are the people owe their jobs to the sale of alcohol.

<sup>10</sup> Page 190 of Ernst & Young (2006), 'The contribution made by beer to the European economy', January.

<sup>11</sup> DTZ Pieda Consulting (2003), 'The economic impact of the production of Scotch whisky, gin and vodka in Scotland'.

### 3. The impact of the 2008 announcements on excise duty on alcohol and VAT

This section explains how we have modelled the changes in excise duty on alcohol and VAT announced in the Budget and PBR in 2008. It quantifies the impact of the 2008 policy changes (including the duty escalator) on employment, profits, output and the tax receipts dependent on the drinks and hospitality trade.

#### 3.1. Modelling the impact of changes in excise duty

The analysis of the impact of a duty change on sales of alcoholic drinks rests on two key factors. The first is the extent to which the price to the consumer changes in response to a change in duty. This is known as the rate of (duty) pass through. The second key determinant is how consumer demand responds to the price change. Section 3.1.1 deals with the issues surrounding duty pass through and Section 3.1.2 the responsiveness of demand to price changes.

##### 3.1.1. Pass through

Economic theory suggests the extent to which firms along the alcoholic drink supply chain pass on excise duty rises to consumers is dependent on the degree of competition they face. If the market is perfectly competitive, the full amount of the excise duty will be passed on to the consumer. If the market is less competitive, firms have the power to decide the degree to which they alter their price. Both under pass-through and over-pass through are possible.

In practice, the rate of pass-through is a business decision. It will depend partly on the complexities of the supply-chain and route to market and how companies operate within this supply chain (e.g. companies/retailers may work on fixed gross margins). It is likely to have a strategic element: firms decisions whether to absorb a duty rise by lowering their profit margins or pass on the rise will reflect their beliefs about what their competitors are likely to do and the extent to which they believe consumers will respond by switching away from their product. This decision may also depend on where the current price is relative to a 'price point' – psychological important price levels at which the consumer is unwilling to purchase the drink at a higher point.<sup>12</sup> Alternatively, at the simplest level price changes in parts of the on-trade may always be rounded to the nearest whole number (e.g.10 pence).

The drinks industry was hit by several adverse shocks in 2008: high commodity and energy prices which raised input costs, the depreciation of sterling which raised the cost of imports and the two existing duty rises. All three factors have depressed profit and already low margins, which would point towards any future duty rise being fully passed on to consumers. Against that the UK economy

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<sup>12</sup> See the Wine and Spirit Trade Association (2008), 'Budget Submission 2008', for a discussion of the importance of pricing points in the retailing of wine in the UK.

entered recession in the second half of 2008. Consequently, consumers' incomes are likely to grow less rapidly or actually decline, so they are likely to be more resistant to price rises.

In the analysis that follows, and therefore the effect on price, we assume full pass through in the on-trade and the off-trade. This is a conservative assumption. Previous econometric analysis undertaken for the British Beer & Pub Association found that pass through from duty changes to prices in the on-trade is around 3.5 times the duty rise. However, given the current economic backdrop<sup>13</sup> and the unprecedented size of the recent duty increases announced it may not be possible for this level of pass-through to be fully maintained. Annex A contains some sensitivity analysis around the results and what the impact would be if this level of pass-through were maintained in the on-trade.

### 3.1.2. Price elasticity of demand for alcoholic drinks

The second important determinant of the impact of a duty increase is the extent to which drinkers respond to the price rise by lowering their consumption levels (known as the price elasticity of demand). The own-price elasticity shows the percentage drinks sales will fall, after a 1% per cent rise in their price.

In the real world, the price elasticity of demand for alcoholic drinks varies between people. Age, sex, income, educational history and other attributes all influence the extent to which people respond to price changes. The personal characteristic that has received the most research attention is the amount people drink. Most evidence shows that heavy drinkers reduce the quantity they drink less in response to price increases than those who drink in moderation. Manning et al (1995)<sup>14</sup> estimate the price elasticities across the drinking distribution. They find heavy drinkers are less price sensitive and the 5% of drinkers that consume the most alcohol have a price elasticity not significantly different from zero. Wagenaar et al (2008)<sup>15</sup> finds a mean price elasticity of -0.28 for heavy drinkers compared to -0.51 for all drinkers. The recent University of Sheffield (2008)<sup>16</sup> study also finds hazardous and harmful drinkers in the UK have a price elasticity of -0.21, relative to moderate drinkers' elasticity of -0.47. These results suggests price (and therefore excise duty) is not the way to deal with problem drinkers.

To make the matter more complex the same person may respond differently to price changes at different times. Location is thought to be important, an individual may be more (or less) tolerant of a price rise in a pub (or elsewhere in the on-trade), than in a supermarket. The elasticity is also likely to vary around pricing points for those drinks which they are important (for example, wine).

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<sup>13</sup> Econometric work undertaken by Bank of England economists (Small (1998)) finds price-cost mark-ups and profit margins in both the manufacturing and service sector tend to be pro-cyclical.

<sup>14</sup> Manning, W.G., Blumberg, L., Moulton, L.H (1995), 'The demand for alcohol: The differential response to price', *Journal of Health Economics*, Vol. 14, pages 123-148.

<sup>15</sup> Wagenaar, A.C, Salois, M.J., Komro, K.A (2008), 'Effects of beverage alcohol taxes and prices on consumption: A systematic review and meta-analysis of 1003 estimates from 112 Studies. Presented at the 34th Annual Alcohol Epidemiology Symposium of the Kettil Bruun Society for Social and Epidemiological Research on Alcohol Victoria, British Columbia June 2-6, 2008.

<sup>16</sup> University of Sheffield (2008), 'Modelling alcohol pricing and promotion effects on consumption and harm'.

This study uses the own-price elasticities calculated in the most recent research work undertaken for the five alcohol trade bodies: the British Beer and Pub Association (BBPA); the Gin and Vodka Association (GVA); the National Association of Cider Makers (NACM); the Scotch Whisky Association (SWA) and the Wine and Spirit Trade Association (WSTA). Given these bodies' role, they have considerable expertise and knowledge of their own drinks market as well as access to the most appropriate, up-to-date and robust datasets. Their estimates should therefore be better informed. They range between -0.99 and -2.0 (Table 3.1).

**Table 3-1: Alcohol trade bodies' estimates of the own-price elasticities for different drinks**

Drink type	On-trade	Off-trade
Beer <sup>(1)</sup>	-1.5	-1.0
Cider <sup>(2)</sup>	-2.0	-1.5
Spirits <sup>(3)</sup>	-1.73	
Wine <sup>(4)</sup>	-0.99	

(1) Oxford Economics (2004) for the BBPA

(2) The Bulmer Scottish & Newcastle model.

(3) The GVA and SWA regard the own-price elasticity of -1.73 as a conservative estimate.<sup>17</sup>

(4) Europe Economics' study upper bound for wine elasticities.

These own-price elasticities indicate that demand is considerably more responsive to price than those that underpin HM Treasury's 'tax ready reckoners' for alcohol. These are based on Huang's (2003)<sup>18</sup> econometric research which estimates statistical relationships between 1970 and 2002.<sup>19</sup> Given the changes in the alcohol market (which includes greater wine consumption, the introduction of the Single European Market abolishing limits on personal imports from the EU, rise of the supermarkets and alterations in pub ownership), it is difficult to see why statistical relationships and the data on which they are based dating from the 1970s and 1980s have much relevance to the current market. Huang (2003) is also limited in that it treats cider as part of beer, which is problematic if the two behave differently (as is the case in recent years with the sharp increase in the popularity of bottled cider).

### 3.2. Impact on drinks sales of the Budget and PBR announcements

The model we use to undertake the analysis specifies the real sales volume of each drink is determined by its own real price and the behaviour of real consumer spending. It uses the own-price elasticities set out in Table 3-1.<sup>20</sup> Consequently, beer and cider are modeled in the on and off-trades separately, while spirits and wine are modeled in aggregate. We analyse what happens when duty and VAT are left unchanged at their pre Budget 2008 levels. We then repeat the analysis implementing the changes in the Budget and PBR including the announcements about the future value

<sup>17</sup> The GVA elasticities are based on a re-estimation of Huang's (2003) model using the same ONS dataset, but using up to date data.

<sup>18</sup> Huang, C D, (2003), 'Econometric models of alcohol demand in the UK', HM Customs and Excise.

<sup>19</sup> In recent years, the Budget forecasts have persistently over-predicted excise receipts from alcohol. This further leads to further question marks about the validity of Huang's (2003) results.

<sup>20</sup> We have chosen to ignore the cross price elasticities as they are notorious difficult to estimate and empirical estimates frequently do not exhibit the properties theory suggests they should.



of the alcohol duty escalator (RPI plus 2 per cent). We use HM Treasury's PBR predictions for RPI (detailed in Section 1). The PBR forecast predicts that RPI inflation will be -2¼% in the fiscal year 2009/10. It is as yet unclear whether the HM Treasury will follow their announcements about duty policy when RPI inflation is negative. We have therefore undertaken two versions, one when duty is left unchanged in 2009/10 and the other when it rises by 2%.

The economic backdrop for all three scenarios is common. Consequently, across each drink-type the impact of the recession and the income elasticity play an identical role. The analysis therefore focuses purely on the different excise duty policies and the responsiveness of demand to changes in drinks prices.

Table 3-2A shows the percentage difference in sales volume following the excise duty and VAT announcements made in the Budget and PBR (including the duty escalator) and those predicted if taxes had been left unchanged at their pre-Budget 2008 levels.<sup>21</sup> Across all drinks, consumption is -1.2% lower in 08/09 as a result of the policy changes relative to a policy of no change. After five years (2012/13) total sales are -11.5% lower than if policy had remained unchanged. Spirits, cider, wine and then beer are hit the hardest in terms of lost sales as a result of the policy changes. The sales losses are more severe if duty is increased by 2% in 2009/10 (Table 3-2B).

**Table 3-2A: Cumulative loss of sales volume due to the implementation of the 2008 Budget and PBR changes relative leaving duty and VAT at their pre-Budget 2008 levels**

	08/09	09/10 <sup>(1)</sup>	10/11	11/12	12/13
Beer	-1.1%	-1.4%	-4.9%	-6.6%	-8.2%
Cider	-3.1%	-3.6%	-8.5%	-11.0%	-13.3%
Spirits	-7.3%	-7.8%	-13.9%	-18.2%	-22.0%
Wine	-0.8%	-2.0%	-5.7%	-8.5%	-11.1%
Total	-1.2%	-2.3%	-6.2%	-8.9%	-11.5%

Source: Oxford Economics

(1) As the result of the forecast negative RPI, duty is predicted to remain unchanged in 2009/10.

**Table 3-2B: Cumulative loss of sales volume due to the implementation of the 2008 Budget and PBR relative to leaving duty and VAT at their pre-Budget 2008 levels**

	08/09	09/10 <sup>(1)</sup>	10/11	11/12	12/13
Beer	-1.1%	-2.0%	-5.8%	-7.8%	-9.7%
Cider	-3.1%	-4.5%	-9.3%	-11.8%	-14.2%
Spirits	-7.3%	-9.5%	-15.4%	-19.7%	-23.5%
Wine	-0.8%	-3.1%	-7.2%	-10.5%	-13.7%
Total	-1.2%	-3.3%	-7.1%	-9.9%	-12.4%

Source: Oxford Economics

(1) Ignoring the forecast of negative RPI, duty is increased by the announced 2% in 2009/10.

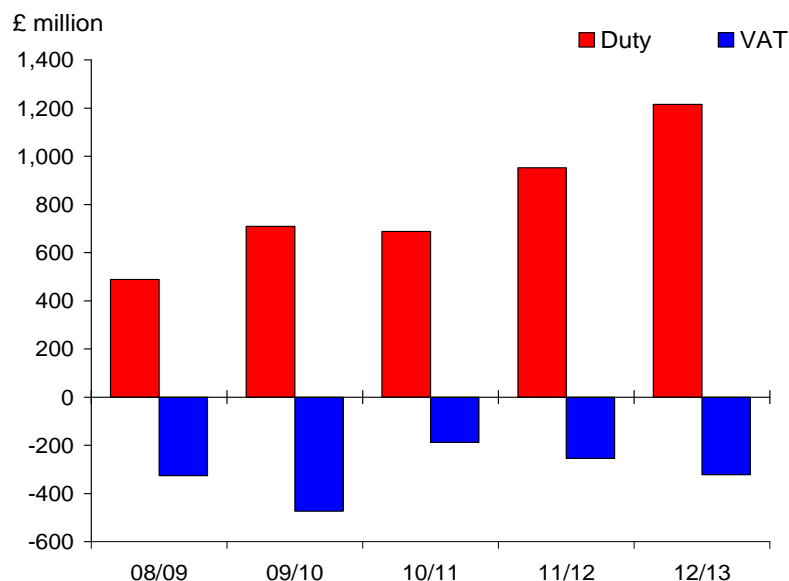
<sup>21</sup> Tables 2-2 and 3-2A/B are not directly comparable. Table 2.2 uses the most up to date data available to produce a forecast of real consumer spending on drinks. The forecast factors in the impact of the recession and other developments in the economy that affect consumer spending and prices. Tables 3-2A and B use data only 2008Q1. They seek to isolate the impact of the Budget and PBR policy changes. So the recession and other economic developments are in affect ignored, as they are common to both the policy of no change and the actual Budget and PBR changes.

### 3.3. Impact on excise duty and VAT

The Budget, PBR and duty escalator changes to the rate of excise duty affect duty receipts in two ways. For each glass, can or bottle sold, more duty revenue will be forthcoming. Against that the rise in duty is likely to increase the price to the consumer, decreasing the quantity sold. As discussed above which effect dominates depends on the price elasticity of demand. The rise in excise duty increases the pre-tax price of the good, increasing VAT earned per item sold. Again the impact of higher prices on demand lowers VAT receipts. The analysis assumes the customers which are put off from purchasing drinks due to higher prices save their income. However, it is recognized that a proportion of this may be spent on other goods on which VAT is levied.

Using the alcohol trade bodies' estimates of the responsiveness of drinks demand to price changes following the duty rise, we estimate excise duty receipts will increase in every year (relative to a duty standstill and no VAT changes). Excise receipts increase by £490 million in 2008/9 (Chart 3-1 and Table 3-4). In five years time (2012/3), they are £1,215 million higher. VAT receipts are lower each year. This reflects lower sales volumes and the reduction in the rate between December 2008 and 2009. VAT receipts are £326 million lower in 2008/9 and £272 million lower in five years time. The results for both taxes are slightly greater if duty rises by 2% in nominal terms in 2009/10. After five years, duty is £1,303 million higher than if the 2008 changes had not occurred, whilst VAT is £342 million lower.

**Chart 3-1: Increase in excise duty and VAT receipts on all alcoholic drinks in response to the policy announcement of 2008**



Source : Oxford Economics

### 3.4. Impact on employment, employment taxes and profitability

Section 2.4 provided details on the direct employment in the drinks industry. As a brief recap, 31,000 people were employed in the UK manufacturing alcoholic drinks. We estimate a further 546,000 people in the on-trade and 91,000 people in the off-trade owe their jobs to the sale of alcoholic drinks.

Tables 3-2A and B show the costs of policy announcements made in the Budget and PBR relative to a policy of no change in terms of lost sales volumes. Assuming a constant productivity ratio (sales per person employed) for each industry within the alcohol sector, we can calculate how many fewer jobs are required to manufacture<sup>22</sup> and sell the lower quantities. We calculate employment will be 75,000 jobs lower in 2012/13 assuming no rise in the duty rate in 2009/10 (Table 3-3). If the duty rate increases by 2% in that year, 80,000 jobs will be lost by 2012/3.

Information is available on the average gross earnings of workers in each industry from the ONS' Annual Survey of Hours and Earnings. The gross wages earned by staff of drinks producers and in the retailing of alcohol are shown in Tables 2-5 and 2-8. Using tax rates for 2008/9, we can calculate how much each employee in the various industries that comprise the drinks sector contributes to the Exchequer in terms of employment taxes (income tax and both types of National Insurance Contributions). The latest data (May 2008) from the Department of Work and Pensions (DWP) shows the average weekly payment of Jobseeker's Allowance was £56.55 (or £2,941 on an annual basis).

We can calculate the likely cost of employment losses to the Exchequer by combining the information on job losses by industry within the sector and each staff member's average employment tax payments and entitlement to benefits when made unemployed. As can be seen from the tables, the loss of a job in the production of alcohol incurs a greater loss to the Exchequer than the loss of a job in retailing (either on-trade or off-trade). If we assume the duty does not rise in 2009/10, we estimate employment tax receipts and payments of JSA will be £397 million lower in five year's time due to the policy changes undertaken in 2008 (Table 3-3). If excise duty is increased by 2% in 2009/10, the loss to the Exchequer will be £422 million.

**Table 3-3: Employment and employment tax losses due to the policy changes announced in 2008 (relative to leaving tax rates unchanged at their pre-2008 Budget levels)**

	Assuming no duty rise in 2009/10		Assuming a duty rise of 2%%	
	Employment losses (000s)	Employment taxes and JSA (£ million)	Employment losses (000s)	Employment taxes and JSA (£ million)
08/09	-14	-115	-14	-115
09/10	-17	-97	-23	-138
10/11	-42	-274	-48	-297
11/12	-59	-323	-64	-346
12/13	-75	-397	-80	-422

Source: Oxford Economics

<sup>22</sup> Over 90% of UK whisky and 75% of gin production is exported. As employment in spirits manufacturing only comprises 1.6% of total jobs in the alcoholic drinks industry, we do not control for this impact.

The ONS' Annual Business Inquiry contains data on turnover, cost of inputs of bought in goods and services and employment. If we subtract from turnover the payments to the two factors of production, we are left with a measure of profit for each of the industries in the alcohol trade. As for employment, we scale the estimates of profitability in the retail sector (on-trade and off-trade) by spending on alcohol's share of each industry's turnover. This gives us figures for the profit generated by the sale of each drink type.<sup>23</sup>

If it is assumed<sup>24</sup> each unit of a drink-type's output earns the same amount of profit, we can calculate the impact of the duty increases and VAT cut on the alcohol industry's profits. We use the current rate of corporation tax of 28% to generate an estimate for the impact on this type of tax receipt. If the demand for alcoholic drinks responds to duty-related price increases according to drinks trade bodies' research, profits in the trade will be £1,092 million lower in five years time assuming no change in duty in 2009/10 or £1,164 billion lower if duty rises by 2%. This means corporation tax receipts will be £328 million or £349 million lower respectively (Table 3-4).

### 3.5. Fraud

HMRC (2008) seeks to estimate the excise duty revenue lost because of the illicit market in spirits (they have yet to develop estimates for other drink types).<sup>25</sup> For 2005/6, they estimate the illicit market share was 6% of the total spirits market.<sup>26</sup> Given there is always considerable uncertainty about estimates of black market activity and the data are annual with a short back run, we have not attempted to model the impact of increasing duty on the illicit market. Suffice to say increases in duty increase the incentive to purchase illicit versus duty paid drinks. A rise in duty is therefore likely to lead to some duty and VAT revenue loss as people switch into the illicit market. As duty rates widen further with European neighbours, this also increases the likelihood of cross-border shopping with subsequent revenue impacts.

### 3.6. Total fiscal impact of the policy changes announced in 2008

The combined impact on total fiscal receipts from the Budget and PBR changes relative to not changing duty and VAT from their pre-Budget 2008 levels is shown in Table 3-4 and Chart 3-2. It shows total fiscal receipts fall by £18 million in 2008/9. This reflects the fact that reductions in VAT, employment taxes and additional JSA payments and reduced corporation tax receipts offset almost entirely the return from higher excise duties. . By 2012/13, the Exchequer gains from the policy by

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<sup>23</sup> It should be acknowledged that the latest ONS ABI data are for 2007, as profits and mark-ups are procyclical, this may overestimate the level of profitability drinks firm earn (and therefore corporation tax) in the current recession.

<sup>24</sup> This is a simplifying assumption to undertake the calculation, it is acknowledged profit margins vary across drinks.

<sup>25</sup> HMRC (2007), 'Measuring indirect tax gaps – 2008', November.

<sup>26</sup> In the PBR the Government also announced the intention to strengthen the current spirits fraud strategy and extend it to cover all forms of alcohol fraud ensuring that the approach to tackling alcohol fraud and smuggling keeps pace with developments in this area. Page 103 of the PBR.

£190 million (if duty is held constant in 2009/10) or £213 million (if it increases by 2% in the same year)  
– but at the cost of between 75,000 and 80,000 jobs.

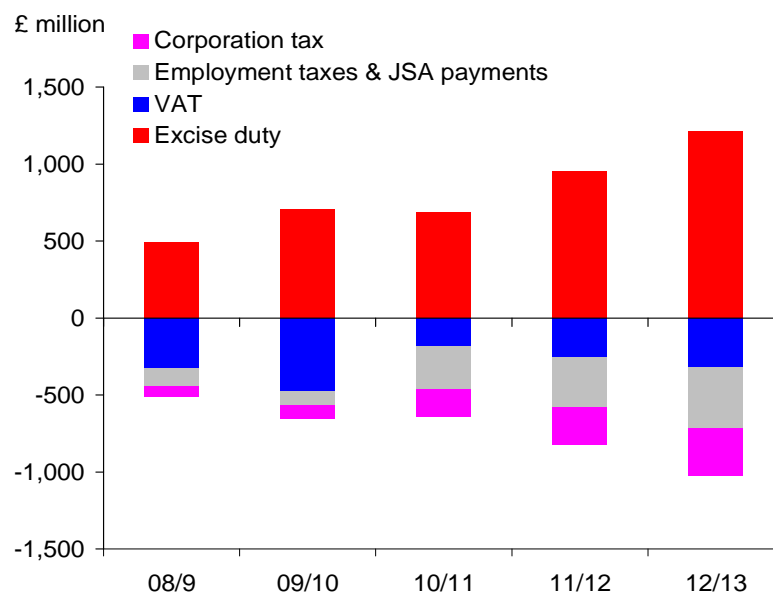
**Table 3-4: Cumulative fiscal impacts of the Budget, PBR and duty escalator compared to a policy of holding taxes constant at their pre-Budget 2008 levels**

	08/09	09/10	10/11	11/12	12/13
Excise duty (£ million)					
2009/10 0% <sup>(1)</sup>	490	708	689	952	1,215
2009/10 2% <sup>(2)</sup>	490	793	772	1,037	1,303
VAT (£ million)					
2009/10 0%	-326	-473	-187	-255	-322
2009/10 2%	-326	-491	-206	-273	-342
Employment taxes and JSA payments (£ million)					
2009/10 0%	-115	-97	-274	-323	-397
2009/10 2%	-115	-138	-297	-346	-422
Corporation tax (£ million)					
2009/10 0%	-67	-84	-181	-244	-306
2009/10 2%	-67	-105	-201	-264	-326
Total (£ million)					
2009/10 0%	-18	54	47	130	190
2009/10 2%	-18	59	68	154	213

Source: Oxford Economics

- (1) Excise duty is assumed to be held constant in 2009/10 when RPI is predicted to be -2¼%.  
(2) Excise duty is assumed to increase by 2% in 2009/10 when RPI is predicted to be -2¼%.

**Chart 3-2: Fiscal impacts of the Budget, PBR and duty escalator compared to a policy of holding taxes constant at their pre-Budget 2008 levels<sup>(1)</sup>**



Source : Oxford Economics

- (1) Excise duty is assumed to be held constant in 2009/10 when RPI is predicted to be -2¼%.

## 4. Conclusion

The drinks industry makes a very significant contribution to the economy. It directly employs 668,000 people (or 2.3% of total in the UK). Of these, 31,000 work in drinks production. The remainder work in retailing. In the on-trade 546,000 people owe their jobs to the sale of alcoholic drinks. In the off-trade (supermarkets and off licenses) 91,000 owe their jobs to the sale of drinks.

The drinks industry directly contributes just under £13 billion to UK GDP. Just over two thirds (68%) comes from on-trade distribution, 20% from production and 12% from off-trade distribution. The industry also supports economic activity in its supply chain and through its staff spending their wages in retail and leisure outlets. We estimate the industry supports an additional £15.6 billion elsewhere in the UK economy. In total, the drinks industry supports £28.6 billion in GDP, or 2.0% of total.

The UK economy entered recession in the second half of 2008. In the early 1980s recession, real consumer spending on alcoholic drinks fell by 9.8% over three years. In the recession of the early 1990s, real consumer spending on all alcohol fell by 8.9% over four years. The prospect for sales over the next few years are bleak. We expect sales volumes of all drinks to fall by 3.7% in 2008/9 alone and real consumer expenditure on alcohol to be £3.3 billion less by 2012/13.

In the 2008 Budget, the Chancellor announced that duty rates on all alcoholic drinks would increase by 9.1% from 17 March 2008. In the Pre-Budget Report (PBR) on 24 November 2008, the Chancellor increased excise duty on beer, cider and wine by a further 8% and spirits by 4%. As a result, excise duty on beer, cider and wine has increased by 17.8% since the beginning of March 2008. The duty on spirits has increased by 13.5% over the same period. The Chancellor also announced in the March 2008 Budget that he planned to increase alcohol duty rates by 2 per cent above the rate of inflation (RPI) in subsequent years.

Compared to a policy of leaving excise duty and VAT unchanged, we expect the 2008 announcements on excise duty on alcohol will lower sales volume by between 11.5% and 12.4% over the next five financial years (2008/9 to 2012/13). We expect this reduction in sales will cost between 75,000 and 80,000 people their jobs. This at a time when unemployment is expected to rise. When all types of fiscal receipts are considered, the policy is predicted to increase taxes by between £190 and £213 million by 2012/13.

## ANNEX A: SENSITIVITY ANALYSIS AROUND DUTY PASS THROUGH IN THE ON-TRADE FOR BEER AND CIDER

**Table A-1: Cumulative fiscal impacts of the 2008 Budget and PBR policy changes on alcohol related revenues – assuming on-trade pass through of 3.5 on beer and cider**

	08/09	09/10	10/11	11/12	12/13
Excise duty (£ million)					
2009/10 0% <sup>(1)</sup>	255	408	403	591	788
2009/10 2% <sup>(2)</sup>	255	461	455	645	845
VAT (£ million)					
2009/10 0%	-404	-573	-297	-392	-484
2009/10 2%	-404	-600	-325	-420	-513
Employment taxes and JSA payments (£ million)					
2009/10 0%	-298	-254	-393	-490	-579
2009/10 2%	-298	-314	-426	-523	-612
Corporation tax (£ million)					
2009/10 0%	-152	-192	-279	-361	-437
2009/10 2%	-152	-221	-307	-388	-464
Total (£ million)					
2009/10 0%	-600	-610	-565	-652	-711
2009/10 2%	-600	-674	-602	-687	-744

Source: Oxford Economics

<sup>(1)</sup> Excise duty is assumed to remain constant in 2009/10 when RPI is predicted to be -2¼%.

<sup>(2)</sup> Excise duty is assumed to increase by 2% in 2009/10 when RPI is predicted to be -2¼%

Under this scenario the number of job losses by 2012/13 resulting from the Budget and PBR announcements compared to if duty had been frozen is between 113,000 and 120,000. Beer and cider sales would be between 21.4% and 22.7% lower by 2012/13.

**Table A-2: Cumulative fiscal impacts of the 2008 Budget and PBR policy changes on alcohol related revenues – assuming on-trade pass through of 2 on beer and cider**

	08/09	09/10	10/11	11/12	12/13
Excise duty (£ million)					
2009/10 0% <sup>(1)</sup>	366	545	569	799	1,031
2009/10 2% <sup>(2)</sup>	366	616	639	869	1,104
VAT (£ million)					
2009/10 0%	-366	-526	-232	-311	-390
2009/10 2%	-366	-547	-254	-334	-413
Employment taxes and JSA payments (£ million)					
2009/10 0%	-211	-184	-312	-394	-476
2009/10 2%	-211	-232	-339	-422	-505
Corporation tax (£ million)					
2009/10 0%	-111	-143	-222	-294	-362

## The economic impact of the Budget and PBR February 2009

2009/10 2%	-111	-167	-245	-317	-386
Total (£ million)					
2009/10 0%	-321	-306	-196	-200	-196
2009/10 2%	-321	-331	-200	-204	-200

Source: Oxford Economics

- (1) Excise duty is assumed to remain constant in 2009/10 when RPI is predicted to be -2¼%.
- (2) Excise duty is assumed to increase by 2% in 2009/10 when RPI is predicted to be -2¼%

Under this scenario the number of job losses by 2012/13 resulting from the Budget and PBR announcements compared to if duty had been frozen is between 91,000 and 98,000. Beer and cider sales would be between 15.4% and 16.4% lower by 2012/13.