BiGGAR Economics

Contribution of the Scotch Whisky Industry to the Scottish Economy

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CONTENTS **Page**

1 INTRODUCTION

This report reviews the evidence on the contribution that the Scotch whisky industry makes to the Scottish economy and the scope for a new tax on the production of Scotch whisky.

The report has been prepared by Graeme Blackett, Director of BiGGAR Economics, who has more than 20 years experience of as an applied economist in Scotland. In 2002, he was a co-founder of BiGGAR Economics, a leading economic consultancy providing advice to governments, government agencies, universities and companies in several European countries. He was previously a consultant with Deloitte and with the economic consultants SQW.

The contents of this report includes:

- Section 2 reviews the evidence on the economic impact of the industry in Scotland and the consumption taxes levied on whisky; and
- Section 3 considers the potential impact of a tax on production.

2 ECONOMIC IMPACT

The Scotch whisky industry regularly publishes information on its contribution to the Scottish economy. For example, a Scotch Whisky Association briefing[1] sent to MSPs following the 2011 Scottish Parliament election had the following headline message:

"Scotch Whisky is a cornerstone of our economy impacting local jobs and economies, communities, health, transport, tourism, the environment, exports and business."

That document also provided a number of facts and figures about the sector's economic impact for MSPs:

- £4 billion a year in gross value added to the economy;
- £1.1 billion invested annually on local supplies;
- 35,000 Scottish jobs supported across Scotland;
- £3.45 billion in exports (Scotch Whisky is Scotland's second largest export, after oil & gas);
- 60% increase in exports since 2000;
- £262,000 per employee (productivity is six times the Scottish average); and
- £800 million new capital investment over life of the last Scottish Parliament.

2.1 Economic Impact Study, 2008

The Scotch Whisky Association has also published research that provides some insight into what sits behind some of these facts and figures. In 2010 it published an economic impact study[2], based on data from 2008, which found that:

- the industry had a turnover of £3,940 million (i.e. £3.94 billion) in 2008;
- Gross Value Added (GVA) was £2,697 million (68.4% of turnover);
- operating costs (i.e. bought in goods & services) accounted for £1,243 million, of which £1,005 million were sourced in Scotland (81% of supplies), which included £201 million on cereals;
- the industry employed 10,284 workers in Scotland, with employee costs of £464 million;

[1] Scotch Whisky Association – briefing for the new Scottish Parliament, June 2011
[2] "The Economic Impact of Scotch Whisky Production in Scotland", Scotch Whisky Association, May 2010

- the industry invested £355 million in 2008, including £108 million in Scotland (i.e. 30% of investment was in Scotland; the other 70% was invested in other countries);
- the study also claims wider employment impacts of 18,206 supported by bought-in goods & services and investment (the supplier multiplier effect) and 6,450 jobs supported by household spending by employees (the income multiplier effect).

2.2 Economic Impact, 2011

While the economic impact study was only published in 2010, it was based on 2008 data. Other statistics published by the Scotch Whisky Association suggest that the sector has grown significantly since 2008.

The latest Scotch Whisky Association Statistical Report[3] for 2011 shows that, in volume terms:

- exports increased by 17% between 2008 and 2011 (from 302.4 million, litres of pure alcohol equivalent, LPA, to 354.0 million LPA);
- whisky released for UK consumption fell by 13% between 2008 and 2011 (from 28.9 million LPA to 25.9 million LPA); and, so
- overall production increased by 14% between 2008 and 2011 (from 331.3 million LPA to 379.2 million LPA).

The Statistical Report also gives a bottle equivalent measure of export sales (1,260 million), meaning that 1 LPA is equivalent to 3.56 bottles of whisky. This means that total production in 2011 was the equivalent of 1,350 million bottles.

The Statistical Report also gives a value of exports for 2011, £4,223 million, a 38% increase in the value of exports since 2008.

No figure is provided for the value of UK sales. However, if the average income per bottle sold in the UK increased only by the rate of UK inflation between 2008 and 2011 (i.e. a total of 6.9%[4] over the three year period, much less than the 18% increase per bottle or per LPA achieved in export markets), then the turnover of the sector in 2011 would have been £5,048 million, a 28% increase since 2008.

On this basis, it is possible to update the 2008 economic impact to take account of the recent growth in the sector, on the following basis:

- the industry had an estimated turnover of £5,048 million in 2011 (a 28% increase since 2008);

[3] "2011 Statistical Report", Scotch Whisky Association, October 2012

[4] See UK Treasury GDP Deflators for inflation assumption

- operating costs (i.e. bought in goods & services) are likely to have increased by 21% (14% to account for the increase in volume plus UK inflation over the 3 year period), which would give a total of £1,509 million; with 81% of supplies sourced in Scotland that would give a total of £1,220 million supplies from Scotland;
- average private sector earnings in the UK increased by 4.3% between mid-2008 and mid-2011; applying this to employment costs would give a total of £526 million.

On this basis, GVA can also be calculated. At the company or industry level, there are two ways to calculate GVA; either (i) GVA = Turnover less cost of bought in materials, components and services or (ii) GVA = operating profit plus employee costs plus depreciation plus amortisation[5].

In 2011, GVA can be estimated as £3,540 million, equivalent to 70% of turnover.

However, only £526 million of this GVA is accounted for by employee costs and so the other £3,013 million can be accounted for by operating profit and return on capital. Much of the Scotch whisky industry is owned and controlled from outside Scotland, meaning that little of the sector's GVA will be retained in Scotland.

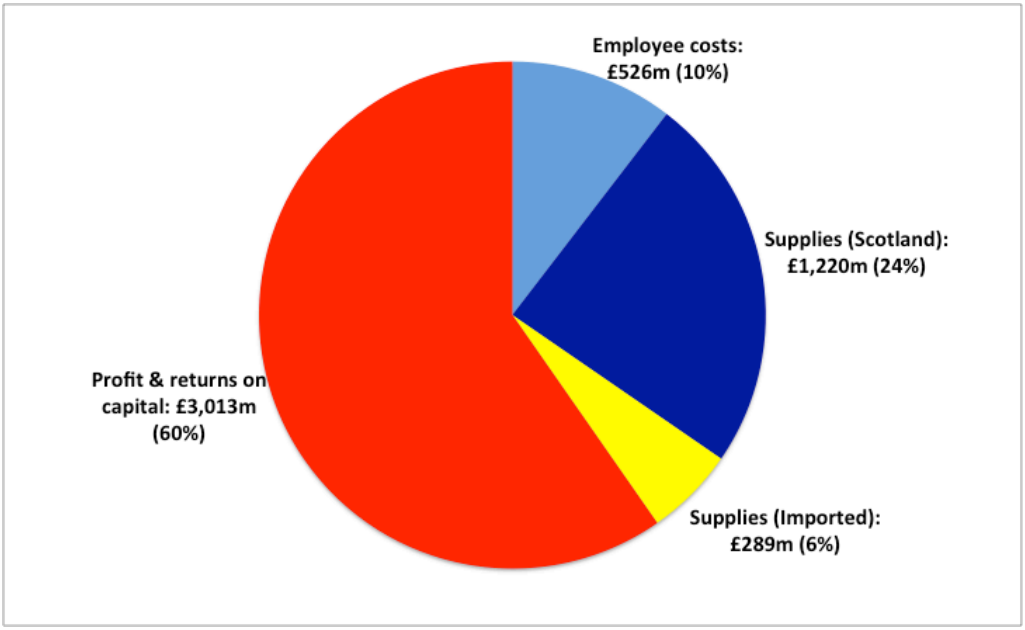
The direct economic benefits to Scotland total at estimated £1,746 million in 2011 (£526 million in employment costs and £1,220 million in supplies from supplies from Scotland), just 35% of the sector's turnover.

This is summarised in the figure overleaf.

Of the £3,013 million that can be accounted for by operating profit and return on capital, little of this seems to be re-invested in the Scottish economy. The briefing for MSPs gave a figure for investment of £800 million over the life of the last Scottish Parliament, £200 million per year, which is less than 7% of the estimated operating profit and return on capital for 2011.

[5] See, for example, "Additionality & Economic Impact Assessment Guidance Note", Scottish Enterprise, November 2008.

Share of Scotch Whisky Turnover (£m), 2011 (Total = £5,048m)



2.3 Tax Arrangements

The Scotch Whisky Association has its roots in an industry associated established one hundred years ago, following a significant increase in the duty on whisky introduced by Chancellor Lloyd George in the 1912. The tax treatment of Scotch whisky has been one of the primary functions of the Association in the last hundred years.

The economic impact figures set out above are based on the turnover of the sector itself. This means that excise studies and other consumption taxes such as VAT are not included.

Scotch Whisky Association figures[6] for 2010 show that the UK excise duty on a bottle of whisky was £6.66 and VAT was £1.62 (15% VAT), giving total consumption tax of £8.28 out of a total price for a typical bottle of £10.85.

The Statistical Report for 2011 shows that excise duty has increased to £7.51 in 2012. VAT has also increased to 20%. This means that in 2012, the consumption taxes on a bottle of whisky and the price of a typical bottle are as follows:

- excise duty: £7.51;
- VAT: £2.02;
- Total consumption taxes: £9.53 (79% of consumer price);

[6] "The UK Duty Burden", Scotch Whisky Association, 2010.

- Total price: £12.10.

These are consumption taxes and so are paid for by the consumers of whisky rather than by the industry itself.

However, consumption taxes can impact on an industry by effecting the level of demand.

2.4 UK Tax and Demand

The demand for whisky has been declining in the UK, in absolute terms and in terms of the share of the overall demand for alcohol.

Figures from HMRC[7] that provide trend data on demand for alcohol show that between 1986/87 and 2010/11, in the UK:

- consumption of spirits increased by 13% (from 2.01 LPA per adult to 2.27); and
- consumption of all types of alcohol increased by 11% (from 9.53 LPA to 10.59).

However, figures from the Scotch Whisky Association 2011 Statistical Report suggest a 42% decline in UK demand for whisky in this period.

Over this period of time, taxes on all forms of alcohol have increased. So, for example, the HMRC figures show that tax on a bottle of vodka increased by 34.6% between 1999 and 2011 (to £9.05) while tax of a bottle of whisky increased by 33.8% (to £9.63).

On this basis, it seems unlikely that whisky's declining share of UK alcohol demand cannot be explained by tax increases.

However, in order to inform the modelling set out in the next section of this report, analysis was undertaken of the tax charged on UK whisky sales and on UK demand for whisky.

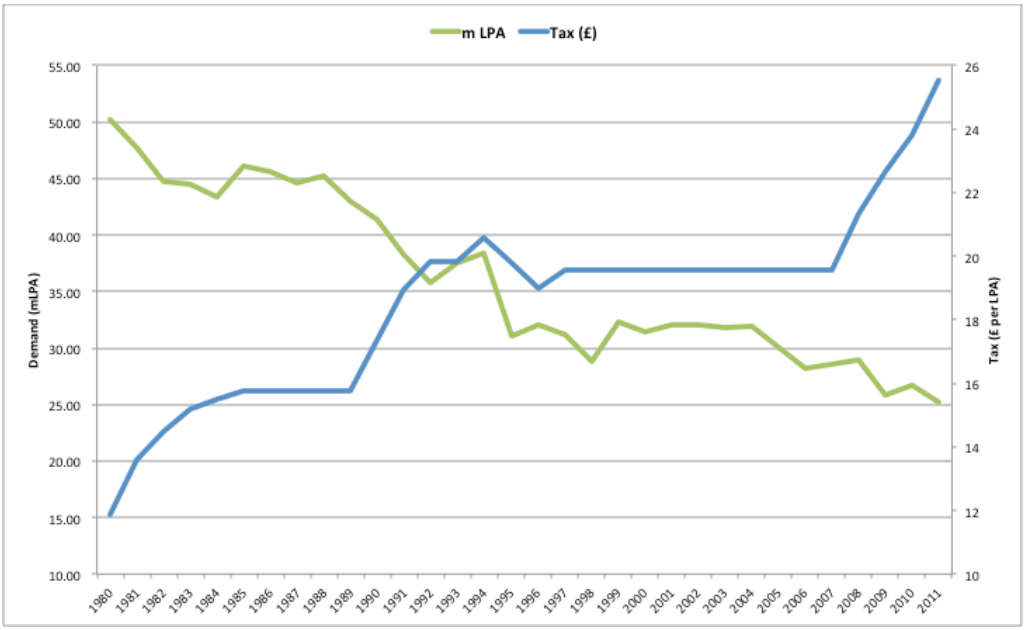
As the first of the graphs below summarises, tax on whisky has increased in three main time periods over the last 30 years: the early 1980s, the early 1990s and since 2007. Between 1980 and 2011, the tax on whisky consumption in the UK (excise duty and VAT) has increased by 115% (i.e. more than doubled) from £11.87 per LPA to £25.52. Over the same period of time whisky released for UK consumption per year has fallen by almost half from 50.16 million LPA to 25.21 million LPA.

The second of the graphs shows the changes in tax and demand, with 1980 = 100 for both, so that the relative changes can be seen more clearly. Over the period 1980, for every 1% increase in tax, there has been a 0.43% decrease in demand. However, again it should be noted

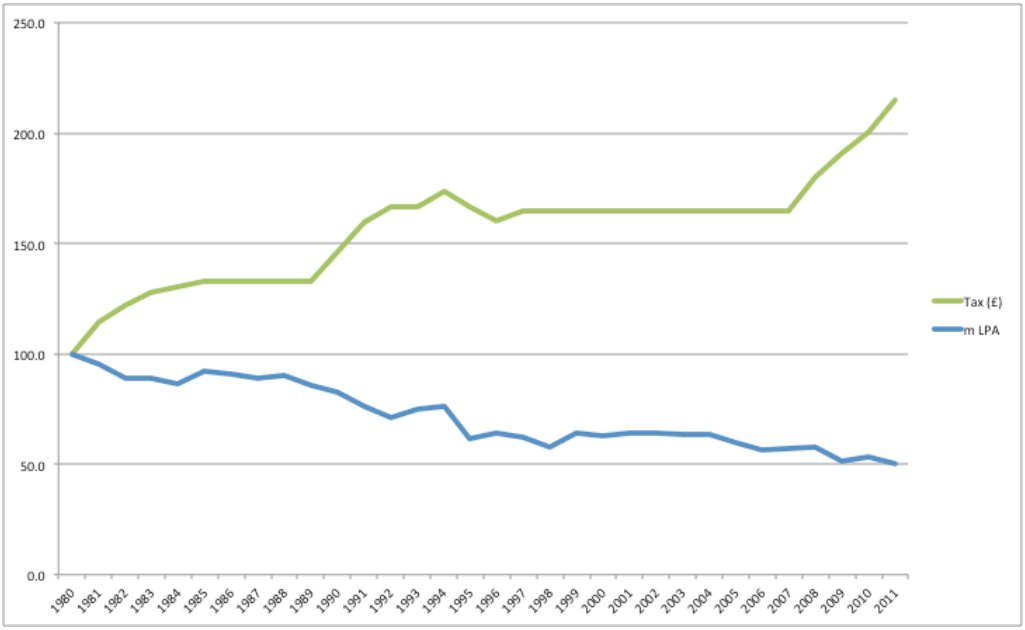
[7] "Alcohol Factsheet", HM Revenue and Customs, March 2012.

that while there is a correlation between increasing tax on whisky and reducing demand, there is little evidence to support the idea that tax has caused the demand reduction.

UK Scotch Whisky Tax & Demand 1980-2011



Change in UK Scotch Whisky Tax & Demand 1980-2011 (1980=100)



3 IMPACT OF PRODUCTION TAX

The contribution of the Scotch whisky industry to the Scottish economy would be expected to increase if a greater proportion of the sector was owned and controlled from Scotland.

Another way of increasing the Scottish economic contribution of the Scotch whisky industry might be to introduce a tax on the production of Scotch whisky. Such a tax would give recognition to the importance of the Scottish brand and Scottish raw materials (such as cereals and water) to the financial performance of the sector.

The Scotland Act 2012 includes provision for the Scottish Government to introduce new taxes, with the agreement of the UK Government.

This section considers what the impact of such a tax might be and models the potential effects of such a tax, in terms of potential tax revenues.

3.1 Consequences of a Production Tax

The modelling considers the potential tax revenues that might be associated with a production tax, taking into account:

- whether the tax would be borne by producers or passed on to consumers in the form of higher prices;
- the potential impact of demand associated with any price increases;
- the effect of lower profits on corporation tax revenues;
- the effect of lower demand (in the UK) on excise duty and VAT revenues;
- the total whisky production tax revenues that might be collected; and
- net tax receipts (the whisky production tax, less any reduction in other taxes).

As a production based tax, every bottle (or bottle equivalent) of Scotch whisky would be subject to the tax, whether sold within the UK or exported.

Lesson 101 in economics at any university will teach students that such a production tax would lead to a deadweight loss to the economy since there will be;

- a reduction in demand associated with an increase in the price (as producers pass all or some of the tax to consumers); and/or
- a reduction in supply as producers cut production as a result of the

lower prices they are now receiving (if they don't pass all of the tax on to consumers).

However, in practice, the impact of a production tax on economic efficiency may not be as high as this theory may predict.

It is likely that producers seek to supply at a price based on what the market will bear, in order to maximise income and profit (already taking into account the elasticity of demand and prices of rival alcohol products). They might therefore chose to avoid reducing demand by holding prices at current levels.

Indeed it could be argued that the high levels of profit generated by the Scotch whisky industry and relatively low levels of investment (when compared to profits) that significant producer surpluses are being realised.

Moreover, the high levels of profits being generated may mean that there is scope for a production tax that will reduce profits since the profits that will be generated after such a tax could still be substantial enough to encourage producers to stay in the business, not to reduce production and to continue to invest.

The long lead in production times associated with the production of whisky (associated with the time that whisky takes to mature), mean that decisions taken on supply take some years to effect the market.

Nevertheless, the modelling of the impact of the tax has considered two extremes: all of the tax falling on producer profits and all of the tax being passed on to consumers.

3.2 Results of Model

Four different levels of a whisky production tax have been modelled: 10p, 20p, 50p and £1 per bottle.

3.2.1 Tax Met from Profits

The first calculation estimates impact if all of the tax was met from profit. In such a scenario there would be no impact on demand and so the tax revenues collected would simply be the tax rate times the number of bottles produced (1.35 billion in 2011).

However, if the tax did reduce profits, that could decrease the corporation tax collected from the sector. Information on corporation tax paid by the Scotch whisky sector is not readily available since some of the larger companies produce a range of different products and others are private companies that do not publish accounts in the same detail as publicly listed companies. The analysis therefore considers the worst case scenario of all of the reduced profit leading to reduction in corporation tax liabilities (at the 2013 rate of 23%).

The net tax revenues if all of the tax was met from profits would therefore be, the revenues from the whisky production tax less reduced corporation tax revenues. However, under the powers of the Scotland Act 2012, if a new whisky production tax was introduced by the Scottish Government, it would receive the associated revenues while the reduction in corporation tax would hit UK Treasury revenues.

3.2.2 Tax Met from Profits

The second calculation estimates impact if all of the tax was passed on to consumers in the form of higher prices.

The first consideration is the extent to which a price rise might lead to a reduction in demand. There is no definitive research available that provides data on the elasticity of demand for whisky (i.e. the extent to which price rises might result in reductions in demand). However, the experience of tax on whisky in the UK provides the basis for an assumption. Over the period 1980 to 2011 each 1% increase in tax was associated with a 0.43% reduction in demand (although there is little evidence of a causal relationship and it is likely that reductions in demand have a number of causes). However, to test the work case scenario, the assumption has been made that each 1% tax related price increase would result in a 0.43% reduction in demand for Scotch whisky. Current (consumption) taxes on whisky in the UK are equivalent to £9.53 per bottle so a 10p production tax would be equivalent to a 1% tax related price increase.

This elasticity assumption has been used to calculate how demand might fall, in response to a number of production tax rates. The tax revenues associated with a production tax were then calculated by applying the tax rate to the estimate of bottles that would be produced to meet the lower levels of demand.

Any reduction in demand would also reduce income to the producers and the profits on which corporation tax is paid. As noted above, the amount of corporation tax paid is not readily available. However, the total income to the sector per bottle (net of consumption taxes) is calculated as £3.74 per bottle (turnover of £5,048 million divided by 1.35 billion bottles). As the economic impact calculations demonstrated, up to 60% of this could be associated with profits. As a conservative assumption, it has been assumed that every bottle fewer that was demanded would result in lost corporation tax of £0.51 (£3.74 times 60% times 23% corporation tax).

A reduction in demand in the UK (which accounted for just less than 7% of total Scotch whisky production in 2011), would also see the UK Treasury lose consumption taxes (of £8.28 per bottle).

The net tax revenues if all of the tax was passed on to consumers would therefore be, the revenues from the whisky production tax less

reduced corporation tax revenues and reduced UK consumption tax revenues.

3.2.3 Results

On this basis, a tax at the following rates per bottle, could generate net tax revenues of:

- 10p per bottle: £104 million (if all of the taxes came from producer profits) or £128 million (if the tax was passed on to consumers);
- 20p per bottle: £208 million (if all of the taxes came from producer profits) or £254 million (if the tax was passed on to consumers);
- 50p per bottle: £520 million (if all of the taxes came from producer profits) or £626 million (if the tax was passed on to consumers);
- £1 per bottle: £1,039 million (if all of the taxes came from producer profits) or £1,222 million (if the tax was passed on to consumers).

The following tables summarise the calculations.

Modelling a tax on Whisky Production (10p & 20 per bottle)

Tax per bottle	**10p**	**20p**
Bottles produced, million (2011)	1,350	1,350
If all from profit		
Gross bottle tax (£m)	135	270
Corporation Tax lost (max. at 23%)	-31	-62
Net tax (£m)	**104**	**208**
If passed to consumers		
Current Tax per bottle (UK, 2012, £)	9.53	9.53
% increase in tax	1.0	2.1
Demand elasticity (-% of +1% tax)	0.43	0.43
Demand Bottles, million	1,344	1,338
Gross bottle tax (£m)	134	268
Corporation Tax lost (max. at 23%)	-3	-6
Excise Duty & VAT lost (UK only)	-4	-7
Net tax (£m)	**128**	**254**

Modelling a tax on Whisky Production (50p & £1 per bottle)

Tax per bottle	**50p**	**£1**
Bottles produced, million (2011)	1,350	1,350
If all from profit		
Gross bottle tax (£m)	675	1,350
Corporation Tax lost (max. at 23%)	-155	-310
Net tax (£m)	**520**	**1,039**
If passed to consumers		
Current Tax per bottle (UK, 2012, £)	9.53	9.53
% increase in tax	5.2	10.5
Demand elasticity (-% of +1% tax)	0.43	0.43
Demand Bottles, million	1,319	1,289
Gross bottle tax (£m)	660	1,289
Corporation Tax lost (max. at 23%)	-16	-31
Excise Duty & VAT lost (UK only)	-18	-36
Net tax (£m)	**626**	**1,222**