

# The Economic Impact of the Production of Scotch Whisky, Gin and Vodka in Scotland

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# EXECUTIVE SUMMARY

## INTRODUCTION

1. Scotch Whisky is, by definition, an industry unique to Scotland and is one of the country's longest established manufacturing sectors. In this report for The Scotch Whisky Association, DTZ Piedad Consulting analyses the impact of the industry on the Scottish and UK economies.
2. In recent years there has been a considerable expansion in Scotland of the production of gin and vodka. This growth is a consequence of the existence of the Scotch Whisky industry, which had created the necessary infrastructure, e.g. spirit production facilities and available bottling capacity, which caused major companies to consolidate a significant part of their spirits production activity in Scotland. This growth in white spirits production has generated additional investment in facilities in recent years in Scotland amounting to in excess of £50m.
3. The study therefore also includes an assessment of the economic impact of gin and vodka production in Scotland. The report clearly distinguishes between the impact of gin and vodka production from that of Scotch Whisky.
4. Spirits production in Scotland not only employs more than 10,000 people, but also creates a large amount of employment in suppliers of goods and services – in Scotland and the rest of the UK: this is known as the “**indirect**” effect. The incomes earned in the industry and in its supplier firms create further employment as they are spent: this is the “**induced**” effect. By adding these direct, indirect and induced elements together, an assessment of the industry's economic impact can be made (the report appendix explains the recognised methodology). The industry is also an important contributor to the public purse with more than £1.6 billion in excise duty and VAT contributions paid annually to the Exchequer. Scotch Whisky is also one of the UK's top five export earning manufacturing industries, contributing in excess of £2 billion a year to the balance of trade.



## **SCOTCH WHISKY PRODUCTION**

5. In the year 2000:

- ◆ around 41,000 Scottish jobs depended on the production of Scotch Whisky - accounting for almost 2% of all jobs in Scotland;
- ◆ over £800 million of income (principally wages and salaries) was generated in Scotland; and
- ◆ at the UK level around 65,000 jobs were supported generating £1.3 billion of income within the economy.

## **GIN AND VODKA PRODUCTION**

6. Gin and vodka production is an increasingly important activity in Scotland. In the year 2000:

- ◆ around 2,300 jobs in Scotland depended on the production of these drinks;
- ◆ over £50 million of income was generated in Scotland by this production; and
- ◆ 3,250 jobs in the UK as a whole depended on the production of these drinks at Scottish plants, generating £64 million of income.

## **TOTAL IMPACT OF SCOTTISH SPIRIT PRODUCTION**

7. Drawing the figures for the two groups of products together, we find that in 2000:

- ◆ 68,000 jobs in the UK depended upon the production of spirits at Scottish plants; and
- ◆ the spirits industry in Scotland generated £1.3 billion of income for UK households.



### **IMPACT ON RURAL SCOTLAND**

8. Over 7,000 jobs in rural areas of Scotland depend upon the production of Scotch Whisky, generating income of £148.16 million per year. The close link between spirits production and the agriculture community is shown by the distilling industry's purchase of over £90m worth of cereals from Scottish suppliers.

### **COMPARISON WITH OTHER SECTORS**

9. Almost 2% of all Scottish employment in 2000 depended upon spirits production. Direct employment in spirits production (10,324 jobs) represented almost 20% of total employment in the Scottish food and drink manufacturing sector, and 4% of all Scottish manufacturing jobs.

# 1

## INTRODUCTION

- 1.1 DTZ Pidea Consulting was commissioned by The Scotch Whisky Association to undertake a study of the contribution that Scotch Whisky producers make to the Scottish and UK economies. The study examined the impact of the production of Scotch Whisky and of gin and vodka in Scotland.
- 1.2 The inclusion of gin and vodka production in the study reflects the fact that UK production of gin and vodka has become increasingly concentrated in Scotland in recent years and now represents a significant element of the spirits industry. Indeed, in excess of 70% of UK gin and vodka comes off bottling lines in Scotland. Major companies have consolidated much of their spirits production activity in Scotland because the existence of the whisky industry has created the necessary infrastructure including production facilities and bottling capacity. Without these local advantages, other spirit production would have been less encouraged to relocate to Scotland.
- 1.3 Although the production of Scotch and of gin and vodka are completely distinct processes, production of gin and vodka is undertaken by firms which produce whisky. In this report, reference to the impact of Scotch Whisky **producers** includes the economic impact of Scotch Whisky, gin and vodka production by those firms. References to the impact of Scotch Whisky **production** and to the Scotch Whisky **industry** excludes white spirits production.



1.4 The Scotch Whisky industry is of significant importance to the Scottish and UK economies, employing around 10,200 people directly in the UK of whom just under 10,000 are in Scotland. Production of other spirits brings total direct employment up to 11,000. The Scotch Whisky industry:

- ◆ sustains employment in some of the most economically fragile parts of Scotland
- ◆ is of significant benefit to the UK Exchequer – around £800 million in excise duty and VAT contributions are paid annually; and
- ◆ is one of the UK's top five manufacturing export earners, contributing in excess of £2 billion to the balance of trade each year.

1.5 This study analyses the economic significance of Scotch Whisky, gin and vodka production in Scotland and the UK for the year 2000. The analysis separates out the impact of the activities involved in the production of white spirits. The impact of distillery processes is distinguished from that of other parts of the production process. An assessment of the economic impact on rural Scotland is also made.

1.6 The report is set out as follows:

- ◆ **Section 2** provides an assessment of the economic significance of Scotch Whisky to the Scottish and UK economies
- ◆ **Section 3** analyses the economic significance of gin and vodka production in Scotland to the Scottish and UK economies;
- ◆ **Section 4** summarises the joint impact of production of Scotch Whisky and of gin and vodka; and
- ◆ **Section 5** analyses the impact of Scotch Whisky producers on rural Scotland.
- ◆ The methodology used in the impact estimates is detailed in an **appendix**.

# 2

## ECONOMIC IMPACT OF SCOTCH WHISKY PRODUCTION ON SCOTLAND AND THE UK

### KEY FINDINGS

#### 2.1 The key findings of the study relating to the economic impact of Scotch Whisky production are as follows:

- ◆ In total, the Scotch Whisky industry supports almost 41,000 jobs in Scotland.
- ◆ It supports almost 65,000 jobs at the UK level.
- ◆ Just over 9,500 are employed directly in Scotch Whisky production in Scotland, with a further 20,000 Scottish jobs in businesses which supply goods and services to Scotch Whisky companies.
- ◆ In 2000 Scotch Whisky producers spent almost £690 million with Scottish suppliers and a further £329 million with suppliers in other parts of the UK

## IMPACTS ON EMPLOYMENT AND INCOME

2.2 The economic impact of Scotch Whisky and spirits production can, as with any activity, be divided into three elements:

- ◆ The **direct** impact consists of the employment in the businesses engaged in the production of Scotch Whisky and the incomes (mainly wages) which households receive from that production
- ◆ The **indirect** impact is the income and employment created in supplier businesses in order to meet the demands of Scotch Whisky producers for inputs, materials and services
- ◆ The **induced** impact consists of the jobs and incomes generated in producing the goods and services bought with the incomes created through the direct and indirect impacts.

2.3 The direct impact has been calculated from data supplied by individual Scotch Whisky producers. The indirect and induced impacts were calculated by applying data on input expenditure supplied by the whisky producers to Input-Output tables produced by government economists. The techniques are explained in detail in Appendix A.

## DIRECT IMPACT

2.4 The Scotch Whisky producers employ 10,249 workers in the production of Scotch Whisky, 93% (9,573) of whom are employed in Scotland.

## INDIRECT IMPACT

2.5 The indirect impact of Scotch Whisky producers in Scotland was estimated through the analysis of their expenditure with Scottish suppliers. The sectors where Scotch Whisky producers make purchases are given in Table 2.1 which also shows the expenditure in both Scotland and the UK. Current and capital expenditure by the industry in the year 2000 was £689.72 million in Scotland and £1,018.87 million in the UK as a whole.

Table 2.1 Scotch Whisky Production: Supplier Expenditure in Scotland and the UK 2000 (£ million)

<b>Sector</b>	<b>Scotland</b>	<b>UK</b>
Cereals	89.32	118.59
Packaging	131.28	255.31
Bottles	95.27	149.40
Plant & Machinery	44.89	59.84
Energy	28.60	40.43
Transport & Distribution	55.02	82.53
Other Services	245.35	312.76
<b>Total</b>	<b>£689.72m</b>	<b>£1,018.87m</b>

- 2.6 The industry relies heavily on local suppliers with 68% of the industry's expenditure on goods and services being made with companies based in Scotland. The largest element of spending - 33% of Scottish input purchases - is on packaging and bottles.
- 2.7 This spending on goods and services generates almost 20,000 jobs in Scotland and around 34,000 in the UK as a whole (Table 2.2).

#### **INDUCED IMPACT**

- 2.8 Further income and employment is generated as incomes created within the economy both directly and indirectly are spent. The induced impact created around 11,500 jobs and income of £226 million in Scotland and £441 million of income in the UK. The induced impact is included in Table 2.2.

Table 2.2 Total Economic Impact of Scotch Whisky Production on Scotland and the UK 2000

<b>Employment</b>	<b>Scotland</b>	<b>UK</b>
Direct	9,573	10,249
Indirect	19,772	33,916
Induced	11,465	20,628
<b>Total Employment</b>	<b>40,810</b>	<b>64,793</b>
<b>Income (£million)</b>		
Direct	254	317
Indirect	327	553
Induced	226	441
<b>Total Income</b>	<b>£ 807 m</b>	<b>£ 1,311m</b>

### TOTAL IMPACT

2.9 The estimated total impact of Scotch Whisky production in the year 2000 was as follows:

- ◆ around 41,000 jobs in Scotland depended on Scotch Whisky production
- ◆ around £800 million of income was generated in Scotland; and
- ◆ around 65,000 jobs in the UK depended on Scotch Whisky production generating £1.3 billion of income.

2.10 Table 2.3 provides a further analysis which separates the economic impact arising from distilling with that from the other production activities (e.g. packaging and distribution). The table shows that the processes of blending, packaging and distribution create even more jobs than distillation. The analysis demonstrates that:

- ◆ around 40% of employment is generated through the distillation process;
- ◆ distilling employs 3,470 people directly and generates indirectly and by the induced impact another 12,204 jobs in Scotland and 22,483 in the UK as a whole; and

- ◆ other activities support, in total, over 25,000 jobs in Scotland and 38,800 in the UK.

Table 2.3 Total Economic Impact of Scotch Whisky Production in Scotland And the UK 2000 by Activity

Employment	Scotland		UK	
	Distilling	Other	Distilling	Other
Direct	3,470	6,103	3,470	6,779
Indirect	8,013	11,759	14,335	19,581
Induced	4,191	7,274	8,148	12,480
<b>Total</b>	<b>15,674</b>	<b>25,136</b>	<b>25,953</b>	<b>38,840</b>
<b>Income (£million)</b>				
Direct	86.00	168.00	113.00	204.00
Indirect	126.65	200.35	206.93	346.07
Induced	82.34	143.66	162.41	278.59
<b>Total</b>	<b>£294.99 m</b>	<b>£512.01 m</b>	<b>£482.34 m</b>	<b>£828.66m</b>

# 3

## THE ECONOMIC IMPACT OF SCOTTISH GIN AND VODKA PRODUCTION ON SCOTLAND AND THE UK

### KEY FINDINGS

3.1 **The impact of gin and vodka production in Scotland on the Scottish and UK economies has been estimated using the same analytical techniques as for Scotch Whisky. The main findings of the analysis are as follows:**

- ◆ **Production of gin and vodka in Scotland employs just over 750 people**
- ◆ **The production of gin and vodka in Scotland in 2000 involved purchases from Scottish businesses amounting to almost £32 million and almost £46 million at the UK level.**
- ◆ **This spending with suppliers supported over 800 jobs in Scotland and just under 1,500 jobs in the UK as a whole**
- ◆ **When account is taken of the effects of expenditure of the incomes earned by people whose jobs directly and indirectly depend upon the industry in Scotland, the total impact of Scottish gin and vodka production in 2000 was to support almost 2,300 jobs in Scotland and 3,250 at the UK level.**

## DIRECT IMPACT

- 3.2 Some 751 workers are directly engaged in the production of gin and vodka in Scotland. Wages and salaries for these employees totalled £19 million in the year 2000.

## INDIRECT IMPACT

- 3.3 The indirect impact of gin and vodka production in Scotland was assessed through the analysis of the producers' expenditure with suppliers. Current and capital expenditure in the year 2000 generated by Scottish production was £31.84 million in Scotland and £45.63 million in the UK as a whole (Table 3.1).

Table 3.1 Scottish Gin and Vodka Production: Supplier Expenditure in Scotland And the UK 2000 (£ million)

<b>Sector</b>	<b>Scotland</b>	<b>UK</b>
Cereals	6.82	7.35
Packaging	10.24	19.48
Bottles	3.70	4.48
Plant & Machinery	0.33	1.40
Energy	0.87	1.63
Transport & Distribution	3.14	3.64
Other Services	6.74	7.65
<b>Total</b>	<b>£31.84m</b>	<b>£45.63 m</b>

- 3.4 Some 70% of expenditure with suppliers in relation to gin and vodka production in Scotland takes place with companies based in Scotland. The main element is packaging and bottles which accounts for 44% of the industry's Scottish input purchases.
- 3.5 Production of gin and vodka in Scotland generated over 800 jobs in suppliers in Scotland and around 1,500 in the UK as a whole (Table 3.2).

## INDUCED EMPLOYMENT

3.6 The induced impact of Scottish gin and vodka production created household incomes of £14.25 million in Scotland and £21.60 million in the UK (Table 3.2).

Table 3.2 Total Economic Impact of Scottish Gin and Vodka Production on Scotland and the UK 2000

<b>Employment</b>	<b>Scotland</b>	<b>UK</b>
Direct	751	751
Indirect	811	1,487
Induced	727	1,012
<b>Total Employment</b>	<b>2,289</b>	<b>3,250</b>
<b>Income (£million)</b>		
Direct	19.00	19.00
Indirect	17.58	23.22
Induced	14.25	21.60
<b>Total Income</b>	<b>£50.83 m</b>	<b>£63.82 m</b>

## TOTAL IMPACT

3.7 The key findings of the analysis are that in the year 2000:

- ◆ 2,289 jobs in Scotland depended on gin and vodka production generating over £50 million of income; and
- ◆ in the UK as a whole 3,250 jobs depended on Scottish production generating around £64 million of income.

3.8 Table 3.3 shows the impact of gin and vodka production in Scotland, disaggregated into that arising from distilling and from other activities. The analysis shows that:

- ◆ 28% of employment is generated through the distillation process;
- ◆ activities such as packaging and distribution support around 800 jobs in Scotland and almost 1,500 jobs in the UK.

Table 3.3 Total Economic Impact of Scottish Gin and Vodka Production on Scotland and the UK 2000 by Activity

Employment	Scotland		UK	
	Distilling	Other	Distilling	Other
Direct	81	670	81	670
Indirect	392	419	533	954
Induced	176	552	238	774
<b>Total</b>	<b>649</b>	<b>1,641</b>	<b>852</b>	<b>2,398</b>
<b>Income (£million)</b>				
Direct	2.00	17.00	2.00	17.00
Indirect	6.64	10.94	7.91	15.31
Induced	3.35	10.90	5.20	16.40
<b>Total</b>	<b>£11.99 m</b>	<b>£38.84 m</b>	<b>£15.11 m</b>	<b>£48.71 m</b>

# 4

## THE TOTAL IMPACT OF THE SCOTTISH SPIRITS INDUSTRY ON SCOTLAND AND THE UK

### KEY FINDINGS

- 4.1 **A summary of the total impact of production of Scotch Whisky, gin and vodka in Scotland on the Scottish and UK economies is shown in Table 4.1.**
- 4.2 **The spirits industry in Scotland in 2000:**
  - ◆ **generated income of £857 million and 43,000 jobs in Scotland; and**
  - ◆ **created incomes of almost £1.4 billion and 68,000 jobs in the UK as a whole**
  - ◆ **accounted for 20% of employment in the whole Scottish Food and Drink sector.**

Table 4.1 Total Economic Impact of Scottish Spirits Producers on Scotland and the UK 2000

<b>Employment</b>	<b>Scotland</b>	<b>UK</b>
Direct	10,324	11,000
Indirect	20,583	35,403
Induced	12,192	21,640
<b>Total</b>	<b>43,099</b>	<b>68,043</b>
<b>Income (£million)</b>		
Direct	273.00	336.00
Indirect	344.58	576.22
Induced	240.25	462.60
<b>Total</b>	<b>£857.83m</b>	<b>£1,374.82 m</b>

#### IMPACTS OF ACTIVITIES WITHIN THE INDUSTRY

- 4.3 Table 4.2 demonstrates that most of these impacts arise from activities other than distilling. Bottling, packaging and distribution are an even greater part of the spirits industry than is the production of the spirit itself – though without spirit production there is no product.

Table 4.2 Total Economic Impact of Scottish Spirits Producers on the UK 2000 by Activity

<b>Employment</b>	<b>Distilling</b>	<b>Other</b>	<b>Total</b>
Direct	3,551	7,449	<b>11,000</b>
Indirect	14,868	20,535	<b>35,403</b>
Induced	8,386	13,254	<b>21,640</b>
<b>Total</b>	<b>26,805</b>	<b>41,238</b>	<b>68,043</b>
<b>Income (£million)</b>			
Direct	115.00	221.00	<b>336.00</b>
Indirect	214.84	361.38	<b>576.22</b>
Induced	167.61	294.99	<b>462.60</b>
<b>Total</b>	<b>£497.45 m</b>	<b>£877.37 m</b>	<b>£1,374.82 m</b>

4.4 Table 4.3 shows that:

- ◆ Almost 64,800 jobs in the UK depend on **Scotch Whisky production** generating around £1.3 billion of income.
- ◆ 3,250 jobs in the UK as a whole depend on **gin and vodka production in Scotland** generating almost £64 million of income in the UK economy; and

Table 4.3 Total Economic Impact of Scottish Spirits Producers on the UK 2000

<b>Employment</b>	<b>Scotch Whisky</b>	<b>Gin and Vodka</b>	<b>Total</b>
Direct	10,249	751	<b>11,000</b>
Indirect	33,916	1,487	<b>35,403</b>
Induced	20,628	1,012	<b>21,640</b>
<b>Total</b>	<b>64,793</b>	<b>3,250</b>	<b>68,043</b>
<b>Income (£ million)</b>			
Direct	317	19.00	<b>336.00</b>
Indirect	553	23.22	<b>576.22</b>
Induced	441	21.60	<b>462.60</b>
<b>Total</b>	<b>£1,311 m</b>	<b>£63.82 m</b>	<b>£1,374.82 m</b>

4.5 It is concluded that 43,000 Scottish jobs depend upon the Scottish spirit industry. Food and drink is the largest manufacturing sector in Scotland accounting for almost one fifth of all manufacturing employment in the country. Along with fish processing, the manufacture of spirits is the largest employer within the food and drink sector accounting for just under 20.5% of all jobs in the manufacture of food and drink. Thus, 4% of all Scottish manufacturing jobs depend upon the spirits industry in Scotland.

# 5

## THE ECONOMIC IMPACT ON RURAL SCOTLAND

### KEY FINDINGS

#### 5.1 **The production of spirits in Scotland, and of Scotch Whisky in particular, makes an important contribution to the economy of rural Scotland.**

- ◆ **Almost 3,000 people are employed in spirits production in rural areas of Scotland – this represents 30% of all direct employment in the distilling sector in Scotland**
- ◆ **Much of this employment – especially in distilling - is in the more remote and economically fragile areas of Scotland**
- ◆ **Purchases of cereals by the industry support a further 2,000 jobs in rural Scotland**
- ◆ **When account is taken of the effects of the spending of the incomes earned by people employed in spirits production in rural Scotland and by those whose jobs depend upon supplying the industry, it is estimated that 7,000 jobs in rural Scotland depend upon spirits production.**

## THE RURAL CONTEXT

- 5.2 Of the estimated population of 5,119,200 in Scotland at mid-1999, approximately 28% live in communities of less than 10,000 people - the Scottish Executive's definition of a rural area. The Scotch Whisky sector is linked to the prosperity of these "rural" areas, partly due to the direct and indirect employment that it provides in rural locations and its use of cereals, but also through close links with the tourism industry. Many a tourist to Scotland includes at least one distillery in their itinerary. Around forty of the distilleries open their doors to the public, receiving around one million visitors a year between them.
- 5.3 Employment in many rural sectors is in decline; the traditional industries, which are the mainstay of rural life face a particular challenge. The key business growth sectors of the Scottish economy are not strongly represented in rural areas.

## DIRECT IMPACT

- 5.4 Data in Table 5.1 indicate the location in Scotland of directly employed workers and show that 29% of direct employment by Scottish spirit producers is in rural areas. Most of the locations classified as rural had much smaller populations than 10,000 and few included here had populations of more than 5,000 people. As Table 4.1 indicates, almost 60% of distilling activities take place in rural areas of Scotland compared to only 13% of other activities.

Table 5.1 Direct Employment by Location

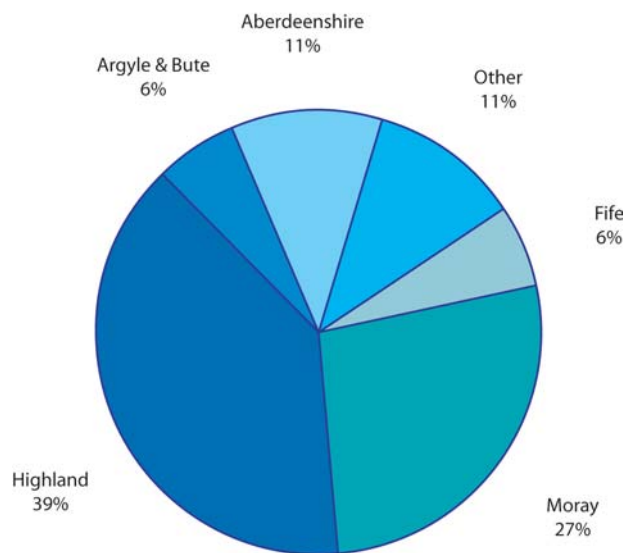
	<b>Distilling</b>	<b>Other Activities</b>	<b>Total</b>
Urban Scotland	1,461	5,893	7,354
Rural Scotland	2,090	880	2,970
<b>Total</b>	<b>3,551</b>	<b>6,773</b>	<b>10,324</b>

- 5.5 Seven percent of these direct employees (751 workers) are involved in gin and vodka production and of these 65% are employed in rural locations. Wages and salaries to the 2,970 rural workers were £75.50m in 2000.



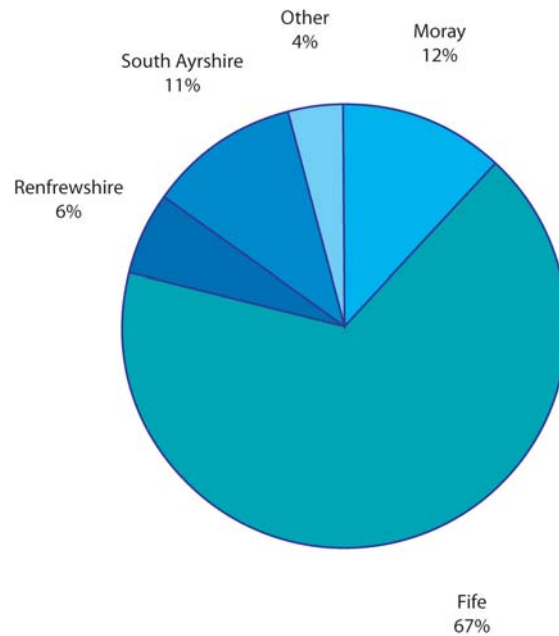
5.6 Figure 5.1 shows the location of rural workers employed in distilling. Three quarters of these workers work in the Moray / Aberdeenshire / Highland areas. Another six percent are located in Argyll and Bute. It is evident that much of the employment is in remote rural areas.

Figure 5.1  
Rural Employment in Distilling by Region



5.7 Figure 5.2 shows the location of rural workers in other activities related to spirit production in Scotland. The location of these workers, although still in rural areas, tends to be in less remote rural locations than is the case for those involved in distilling.

Figure 5.2  
Rural Employment in Other Activities by Region



### INDIRECT AND INDUCED IMPACT

5.8 To estimate the impact of Scotch Whisky and gin and vodka production on the rural communities in Scotland, it was necessary to estimate the level of third party spend on goods and services from rural areas. Data from SWA members was not available at a level that would have allowed us to determine for each category of spend how much took place in rural areas. However, we were able to estimate the amount of spend on cereals and made the assumption that this was rural spend and that the greater part of spend on other goods and services takes place in urban areas. Table 5.2 shows the level of spend on cereals in Scotland by Scotch Whisky producers in 2000.

Table 5.2 Third Party Spend in Rural Scotland (£ million)

	<b>Whisky</b>	<b>Gin and Vodka</b>	<b>Total</b>
Cereals	<b>£89.32 m</b>	<b>£6.82 m</b>	<b>£96.14m</b>

5.9 Indirect and induced employment and income was calculated as before and the results are given in Table 5.3. The figures show that around 7,000 jobs in rural Scotland depend upon spirit production, generating income of £148.16 million per year.

Table 5.3 Total Economic Impact of Spirit Production in Rural Scotland 2000

<b>Employment</b>	<b>Distilling</b>	<b>Other</b>	<b>Total</b>
Direct	2,090	880	2,970
Indirect	2,001	0	2,001
Induced	1,636	475	2,111
<b>Total</b>	<b>5,727</b>	<b>1,355</b>	<b>7,082</b>
<b>Income (£million)</b>			
Direct	51.79	24.04	75.83
Indirect	30.76	0	30.76
Induced	32.19	9.38	41.57
<b>Total</b>	<b>£114.75 m</b>	<b>£33.42 m</b>	<b>£148.16 m</b>

# APPENDIX

## METHODOLOGY


- A.1. This appendix describes the methodology used to assess the economic impact of Scotch Whisky, gin and vodka production in Scotland on the Scottish and UK economies.
- A.2. Scotch Whisky production is a chain of linked processes, which eventually result in the provision of a product to the final customer. The process of producing Scotch Whisky includes:
- ◆ distillery operations (mainly distillation)
  - ◆ maturation & warehousing
  - ◆ blending
  - ◆ bottling & packaging
  - ◆ transport & distribution
  - ◆ advertising & marketing.
- A.3. The distillation processes for white spirits are different from those for Scotch – for example, gin production involves distillation, rectification, together with the introduction of botanicals before the bottling and packaging process begins. White spirits are not matured. While many years elapse between distillation of Scotch and the sale of the product, gin and vodka can be sold as soon as they are produced.

A.4. These processes take place within companies that may be single distilleries or international businesses. Members of The Scotch Whisky Association (SWA) account for almost all production of Scotch and this study is based on data supplied by those firms through the association. The Gin and Vodka Association, whose members account for 95% of gin and vodka production, have also provided information relating to spirits production in conjunction with the Neutral Alcohol Producers Association.

A.5. The economic impact of the Scotch Whisky producers on the Scottish and UK economies is created by a flow of expenditure generating employment in distilleries and in other activities, in supplier companies and throughout the economy. The impact on income and employment was estimated in terms of the following:

- ◆ **Direct impact** i.e. the numbers of staff employed and their related wages and salaries;
- ◆ **Indirect impact** – income and employment that is generated in companies supplying goods and services to all parts of the production process; and
- ◆ **Induced impact** – further income and employment is generated as incomes created within the economy both directly and indirectly are spent.

A.6. The **direct** impact is self explanatory. The **indirect** impact is more complex – if we consider a pound spent by a whisky producer on inputs bought from a Scottish (or UK) supplier, part of that pound will become wages and profits in the supplier firm (thus creating income in the economy), part will be spent with the supplier's suppliers and part will "leak" from the system as imports or taxes. Some tax will return into the economy, but for the purpose of this study, as the destination of tax revenue is unknown, it is not included in the analysis. The spending flowing to the supplier's suppliers creates further steps in the process. The **induced** effect is similar; part of the incomes earned in producers and in suppliers will be spent with Scottish (and UK) companies, setting off the same process as for the indirect impact. The total impact consists of the entire household income and employment resulting from these effects.



A.7. The steps in the analysis have been to:

- (i) determine the number of jobs directly supported by the industry and the incomes accruing to these households;
- (ii) establish expenditure by producers on capital and operational expenditure for the year 2000 within Scotland and the UK and to classify this expenditure according to supplier industrial sector;
- (iii) apply the results of (ii) to the relevant sector of the Input-Output tables to establish the indirect output and income effects;
- (iv) calculate the induced impact; and
- (v) draw together the results to show the impact on the Scottish and UK economies.

A.8. Detailed data for the study have been obtained from members of The Scotch Whisky Association and the Gin and Vodka Association.

A.9. Data were collected from eighteen companies and groups. It was not possible for all companies to provide a complete set of data separating the purchases and employment involved in white spirits rather than whisky production. However, the data that we did receive were detailed enough to allow the analysis to be undertaken. The data received covered 90% of employment and output in the production of Scotch Whisky and of Scottish produced gin and vodka and were then pro rated to equate to 100% of the sector.

## **DIRECT IMPACT**

A.10. Direct employment covers all the activities undertaken by Scotch Whisky companies, which to a greater or lesser extent are engaged in:

- ◆ distillery operations
- ◆ maturation and warehousing
- ◆ blending
- ◆ bottling and packaging.

A.11. Data were collected on the number of employees and their remuneration in 2000.

## **INDIRECT IMPACT**

A.12. The suppliers providing goods and services to Scotch Whisky producers have employees whose jobs and incomes depend in part on the Scotch Whisky producers' expenditure. The main activities creating indirect employment and income are:

- ◆ cereal producers / suppliers
- ◆ bottling and packaging companies
- ◆ energy producers
- ◆ distribution and haulage companies
- ◆ business services (including advertising)
- ◆ capital goods manufacturers.

A.13. Data were collected on all spend with suppliers in 2000 in the above categories and also for any other expenditure. The data obtained were for **all UK** purchases associated with Scotch production. Gin and vodka data are for purchases arising from the distillation and bottling activities **in Scotland**.

A.14. The process by which producers' expenditure creates income for suppliers and suppliers' suppliers can be estimated by feeding the information on expenditure supplied by the industry through the Input-Output Tables for Scotland (1998) and for the UK (1990 and 1998 update).

A.15. The Scottish Input-Output tables allow for indirect employment to be calculated directly whereas the UK ones require further calculation which is as follows. The UK Input-Output tables are applied to calculate the value-added (or income) accruing in the UK for all input purchases. The employment creation associated with this income is then calculated using an estimate of output per head data for the whole economy. In 2000 this figure was £54,250. This was taken as an approximation of output per head for the chain of suppliers to the industry as this includes a wide range of economic activities.



## INDUCED IMPACT

- A.16. For Scotland induced income was calculated by using an income multiplier of 1.39. This comes from calculations made by the Scottish Office (now Scottish Executive) economists DS Henderson and G Storie and reported in the Scottish Economic Bulletin no. 38. The income figure was then converted into employment using a measure of average income per person in employment of £19,750 in 2000 (New Earnings Survey).
- A.17. Induced income in the UK was estimated using the calculation that for every £1 paid to an employee in the UK, a further 80p of expenditure is generated throughout the economy. (MJ Surrey, "The Domestic Economy" in Morris (ed) *The Economic System in the UK*). The induced income was then divided by UK output / employee value of £54,250 to give an induced employment estimate.