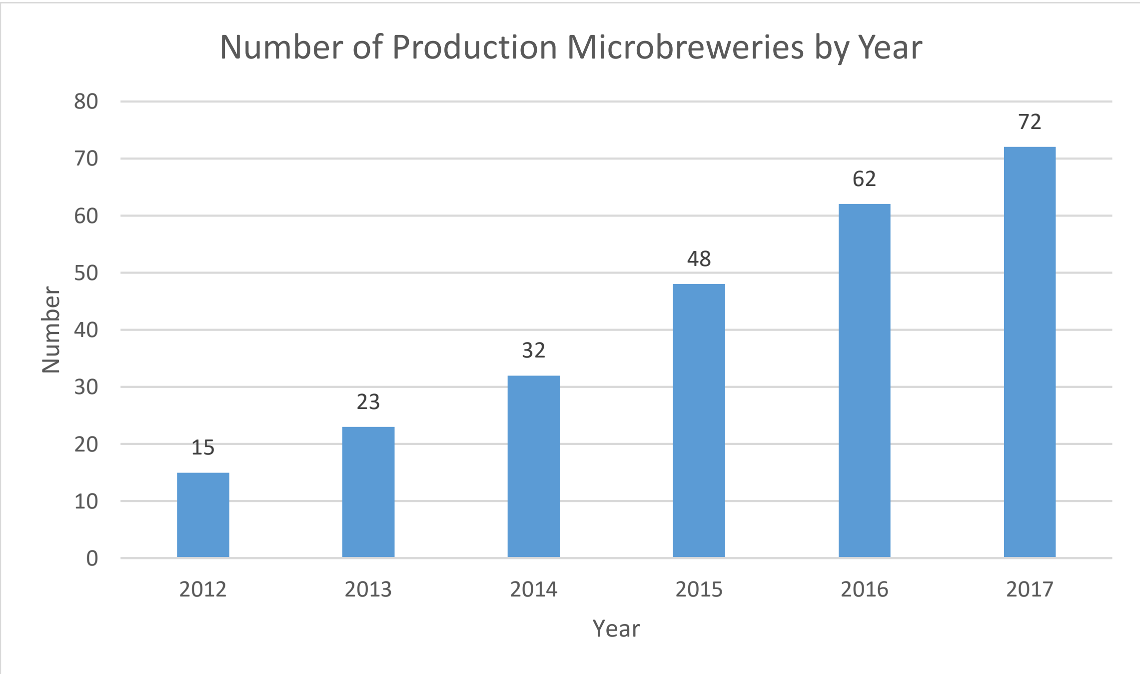
Craft Beer and Microbreweries in Ireland, 2017

A Report for Bord Bia and the Independent Craft Brewers of Ireland

Final Report, September 2017



Bernard Feeney, Economic Consultant

(feeneybernard@gmail.com)

Acknowledgements

The author would like to thank the Independent Craft Brewers of Ireland and Bord Bia for their support. Special thanks are due to the 51 Irish microbreweries that responded to a survey, which formed the basis for much of this report.

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Executive Summary

It is estimated that there are some 100 microbreweries operating in the Republic of Ireland, of which 72 are production microbreweries and at least 30 are brand owners that source all of their product from production microbreweries.

There has been a 16% increase in the number of production microbreweries from 62 in mid-2016 to 72 in mid-2017. There is evidence that only two new microbreweries have been established in the first half of 2017.

The output of craft beer by production microbreweries amounted to some 176,000 hectolitres (hl) in 2016. This represents a 31% increase on the 2015 figure of 134,000hl. In absolute terms, output rose by 42,000hl.

Both the change in output volume and the percentage growth rate in output volume in 2016 was less than the previous year. There is evidence that the market became more difficult for some microbreweries in 2016, with one in six breweries reporting a decline in production compared to 2015.

Total beer production in Ireland amounted to 7,680,000 hl in 2016. The production of Irish craft beer at 176,000hl in 2016 represents 2.3% of the production market

The consumer market for beer in Ireland was 4,576,000 hl for 2016. Irish craft beer consumption in Ireland amounted to 137,000 hl, indicating an Irish microbrewery share of Irish beer consumption of 3%.

In addition to the 137,000hl consumed in Ireland, Irish microbreweries also exported 39,000hl, or 22% of their total production.

Two-thirds of microbreweries export, although the volumes are typically small. Four producers account for 69% of all exports by volume. The USA, followed by the UK, France and Italy were the principal export markets by volume in 2016.

The total turnover of craft beer producers in 2016 is estimated at €52m, up 30% from €40m in 2015. In the five years since 2011, turnover has increased more than ten-fold.

There is currently substantial unused capacity in the microbrewing sector and more capacity is planned. This could facilitate major output growth in the short term, if the growth in demand is sustained. To date, domestic demand has largely driven output growth.

Based on international experience, there is substantial potential for further development of the Irish craft beer industry in terms of both numbers and output. An increase in the number of breweries to more than one hundred and a five-fold increase in output is possible over the longer term.

There is a need for other microbreweries to expand their export performance, if significant growth in output is to be maintained.

A recurring concern in the sector relates to restrictions on sale of own beer to brewery visitors and, to a lesser extent, at farmers' markets. This is seen as a valuable marketing tool that would have significant dividends for Irish tourism. At the time of writing, the Intoxicating Liquor (Breweries and Distilleries) Bill 2016 is before the Oireachtas and undergoing amendments to bring it into line with other retail legislation. Some 88% of microbreweries either have or intend to develop a visitor facility at their brewery, if the Bill is enacted.

Employment in production microbreweries has exceeded 500 persons for the first time in 2017. At 516, the total number of persons employed is 7.6% up on 2016. Of the total of 516 persons employed, 342 represent full jobs. This is a small decline in full-time employment since 2016. There are also 113 employed part-time, an increase from 75 in 2016. Seasonal employment amounted to 61 persons in 2017 up from 53 in 2016. Thus, there has been a shift from full-time to part time and seasonal employment.

Employment on a full time equivalent (FTE) basis has increased only marginally from 390 in 2016 to 408 in 2017. In fact, 47% of microbreweries have reduced employment on an FTE basis in 2017.

Microbrewing is a much more labour intensive activity than conventional large scale brewing. Micro-brewing in Ireland is thirteen times more labour intensive than macro-brewing.

Every person employed in production micro-brewing is matched by another in the wider economy that supplies the industry.

The craft brewing labour force earns incomes that are spent on goods and services produced in Ireland. The production of these goods and services also gives rise to employment. This induced employment is estimated to amount to 130 persons for 2016. On this basis, the craft brewing industry supports almost 900 direct, indirect and induced jobs in Ireland.

There are microbreweries in operation in 25 of the 26 counties, with the exception of Westmeath. Employment in the micro-brewing industry is thus very widely dispersed throughout the country, bring economic benefits throughout the country.

1. Introduction

This report was prepared on behalf of Bord Bia and the Independent Craft Brewers of Ireland (ICBI). It is the fourth such study commissioned by the ICBI, following publication of an initial study in 2014 and update studies in 2015, and 2016. [1] .The findings of the first study contributed to the government decision in Budget 2015 to raise the production ceiling below which microbreweries can avail of excise duty relief, from 20,000 to 30,000 hectolitres. In the 2016 Budget, excise tax relief was made available upfront instead of on a rebate basis. This was an issue highlighted in the 2015 report.

The purpose of the current study was to:

- Provide an update on the development of the micro-brewing industry In Ireland; and
- Review the potential of the industry and the contribution that it is making to the economy;

The report relates to the microbrewing industry in the Republic of Ireland. Based on an internet search and industry sources, a list of microbreweries was developed and these microbreweries were subject to a survey. Data referenced in this report are drawn from the survey unless otherwise indicated.

Appendix 1 discusses the organisation of the survey, the response rates achieved and the methodology by which estimates of craft beer production from the microbrewery sector were derived from survey data.

The Report is organised as follows: Section 2 summarises the recent development of the microbrewing industry in Ireland in terms of output, revenues and market share. The future prospects for craft brewing are assessed in Section 3. The operational characteristics of the industry are described in Section 4. Section 5 assesses the impact of the microbrewing industry on the economy as a whole. Section 6 presents conclusions.

[1] The Development and Economic Impact of Microbreweries in Ireland. Bernard Feeney for the ICBI, August 2014.
Craft Beer and Microbreweries in Ireland, 2015. Bernard Feeney for the ICBI, August 2015.

2. Development of the Microbrewery Sector

2.1 Number of Microbreweries

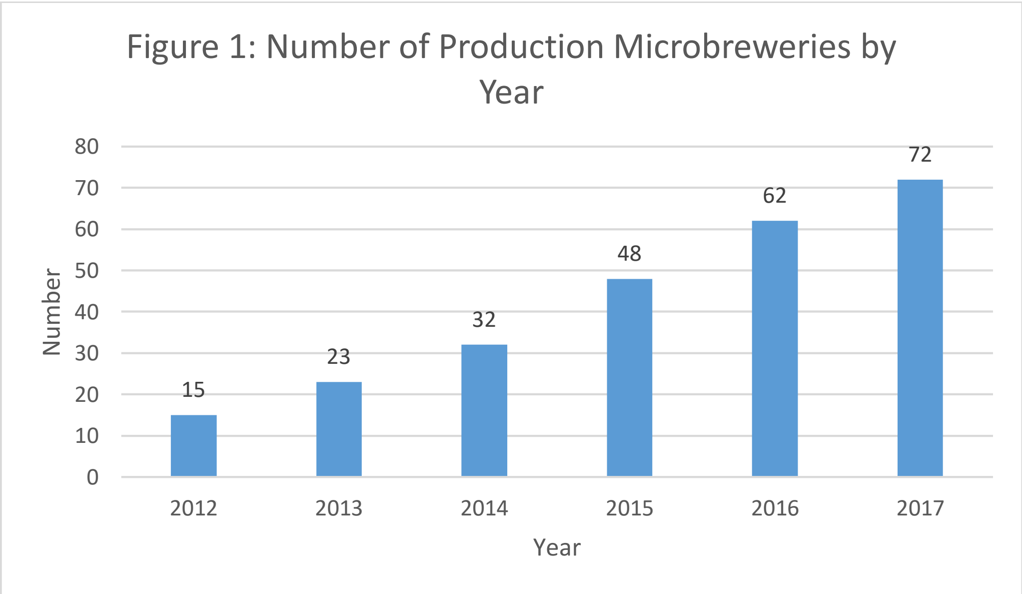
In broad terms, microbrewing comprises two different types of brewing enterprise:

- Microbreweries which produce beer on their own premises for sale on or off the premises;
- Brand owners that source all of their product from production microbreweries.

Throughout the report, these two categories are encompassed in the term 'microbrewery'. Those that produce beer in their own right are referred to as "production microbreweries". These include pubs, hotels and restaurants that have a brewery on their premises. Those that contract out production are referred to as "brand owners". Some brand owners that are in the process of establishing their own brewing plant go through an initial contract phase, before commencing production in their own right.

At the time of writing in July 2017, it is estimated that there are over 100 microbreweries operating in the Republic of Ireland, of which 72 are production microbreweries and a the remainder are brand owners.[2]

There has been a 16% increase in the number of production microbreweries from 62 in 2016 to 72 in 2017. The number of microbreweries has increased almost fivefold since 2012 (see Figure 1). Since 2015, the rate of increase in new breweries has slowed from a high of 50% to the 16% recorded in 2017.



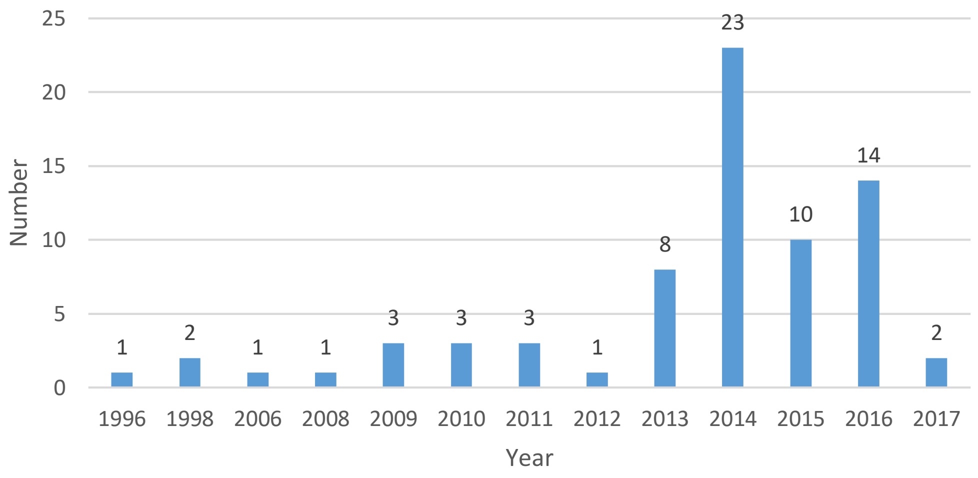
Source: Compiled by the author from survey and Bord Bia data. Figures refer to the number of breweries in production at approximately mid-year.

[2] While every effort has been made to identify all existing microbreweries, it is possible that a small number may have been missed, particularly among contracting companies.

Figure 2 sets out the year in which the current 72 production microbreweries first commenced production. It is estimated that 14 new production microbreweries commenced production in 2016, compared with a total of 10 in 2015. 2014 was the peak year for new entrants at 23. There has been phenomenal growth in new enterprises in the last three years: 49 of the 72 production microbreweries commenced production in 2014 to mid-2017.

During the first half of 2017, only two further production microbreweries commenced operations. While there are a number of breweries that are being planned, it would appear that the rate of introduction of new entrants has slowed considerably and may not reach double figures for 2017 as a whole. .

Figure 2: Number of Production Microbreweries by Year Production First Commenced



Source: Compiled by the author based on survey data; refers to 72 production microbreweries in operation in mid-2017.

2.2 Output

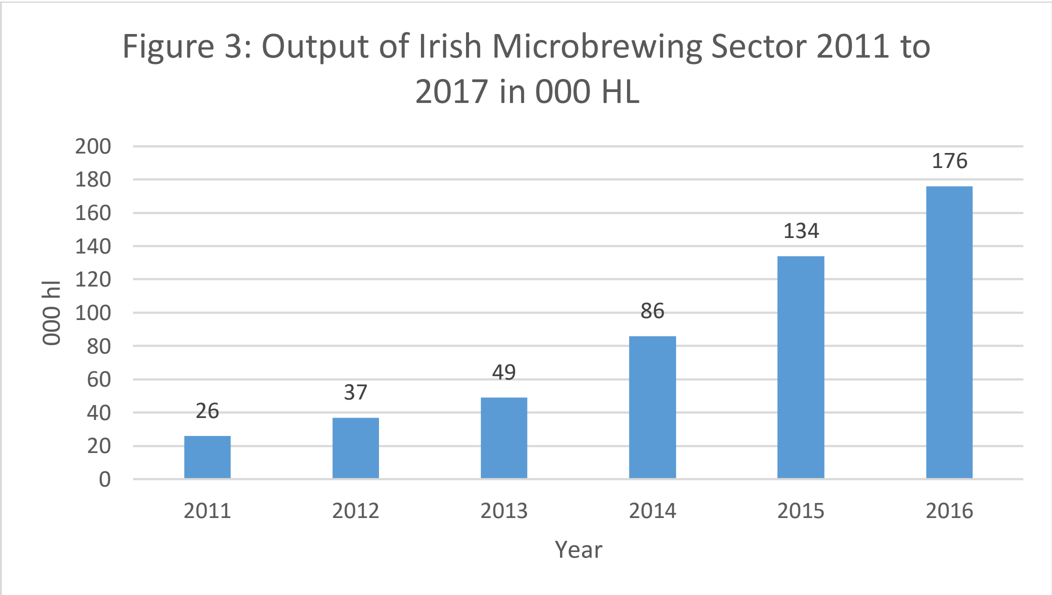
The output of craft beer by production microbreweries amounted to some 176,000 hectolitres (hl) in 2016. This represents a 31% increase on the 2015 figure of 134,000hl. In absolute terms, output rose by 42,000hl. Both the absolute change in 2016 and the percentage growth rate are less than last year (see Table 1). There is evidence that the market has become more difficult for some microbreweries, with one in six breweries reporting a decline in production in 2016 compared to 2015.

Figure 3 and Table 1 depict the trend in output over the last five years. Between 2011 and 2016, the output of production microbreweries rose almost seven fold.

Table 1: Trends in Annual Output of Microbreweries in Hectolitres . 2011-2017

Year	Output (000)HL	% Change	Change (000 HL)
2011	26		
2012	37	42.3	11
2013	49	32.4	12
2014	86	75.5	37
2015	134	55.8	48
2016	176	31.3	42

Source: Compiled by the author from surveys and Bord Bia and other data



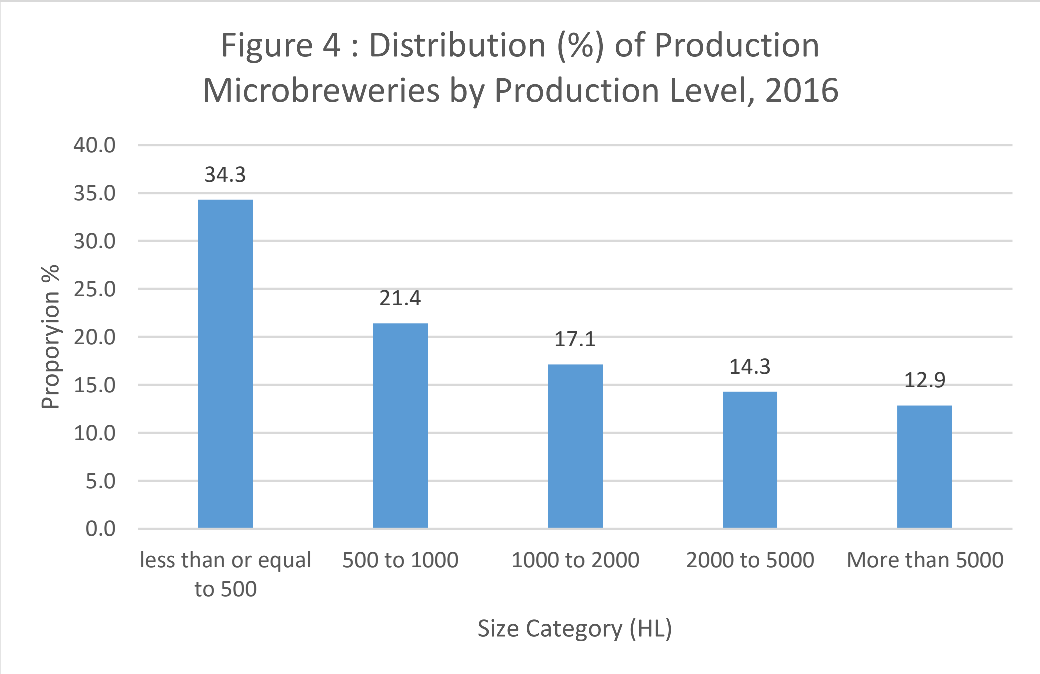
Source: Compiled by the author using surveys and Bord Bia and other data

On the basis of current trends for the year 2017 to date, the breweries are anticipating that output will rise by 62,000hl or 35% to 238,000hl for the year as a whole. However, it should be noted that in 2016 the breweries anticipated an output for 2016 of 197,000 hl, which was an overestimate compared to the actual outturn of 176,000hl.

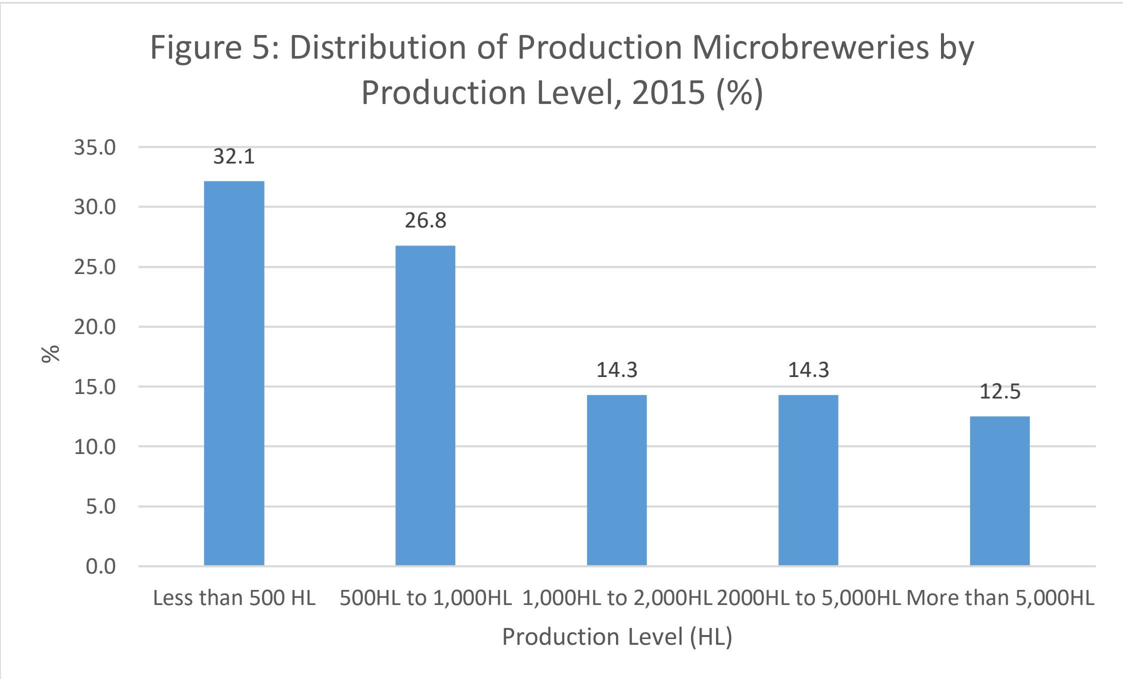
Looking at the trends over the last few years, it is clear that the percentage growth rate in production is in decline from a high of 75%. This is not surprising as such growth rates are difficult to sustain as the sector matures.

2.3 Size Structure

Of the 70 breweries in production during 2016, 24 or 34.3% produced 500hl of beer or less in that year. The equivalent figure for 2015 was 32.1%. In 2016, 9 or 12.9% of breweries had production levels greater than 5,000hl as compared to 12.5% in 2015. Thus the size distribution of microbreweries remained largely unchanged in 2016.



Note: Compiled by the author from survey data and other sources; based on 70 production microbreweries



Note: Compiled by the author from Survey data and other sources; based on 56 production microbreweries

2.4 Irish Microbrewery Market Share

The IBA reports that total beer production in Ireland amounted to 7,680,000 hl in 2016.[3] The Irish microbrewery production of 176,000hl in 2016 represents 2.3% of the production market.

The IBA estimates the consumption of beer in Ireland at 4,576,000 hl for 2016. Of the 176,000hl produced by microbreweries in 2016, some 137,000 hl were sold in the domestic Irish market, indicating an Irish microbrewery share of 3%.

Based on the 2016 estimates for Irish craft beer production, the share of Irish craft beer in overall Irish beer production has risen approximately six fold since 2012.

Table 2: Trend in Irish Craft Beer Market Shares, 2012 to 2016 (%)

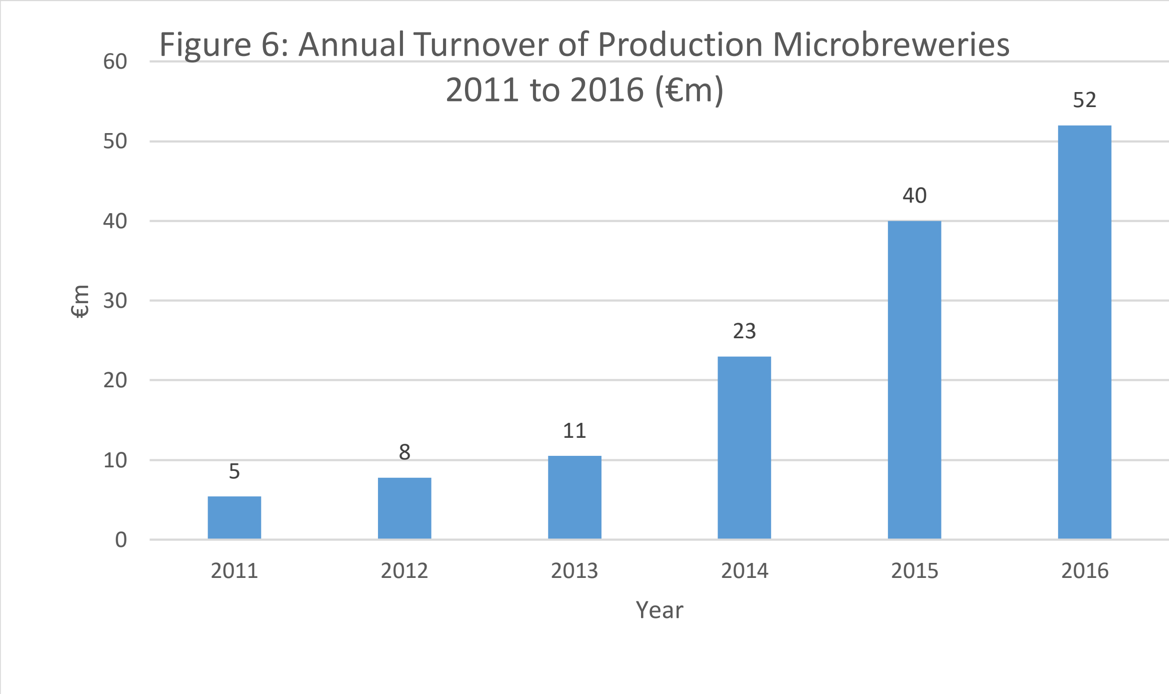
Market Share (%)	2012	2013	2014	2015	2016
Production (%)	0.4	0.6	1.2	1.7	2.3
Consumption (%)	0.6	0.9	1.4	2.5	3.0

Note: Compiled by the author from survey and IBA data. Note 2016 figures are based on year to date

2.5 Turnover

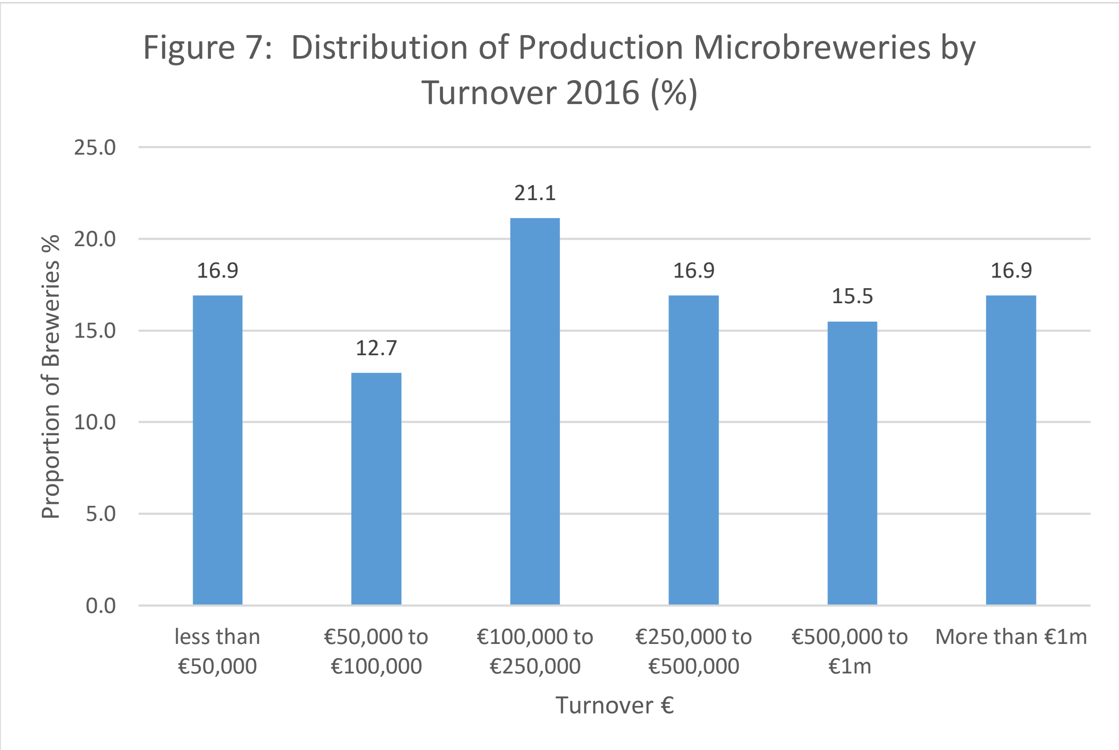
The total turnover of craft beer producers in 2016 is estimated at €52m, up 30% from €40m in 2015. In the five years since 2011, turnover has increased more than ten-fold (see Figure 6).

[3] IBA, Beer Market Report, 2016, 2017.

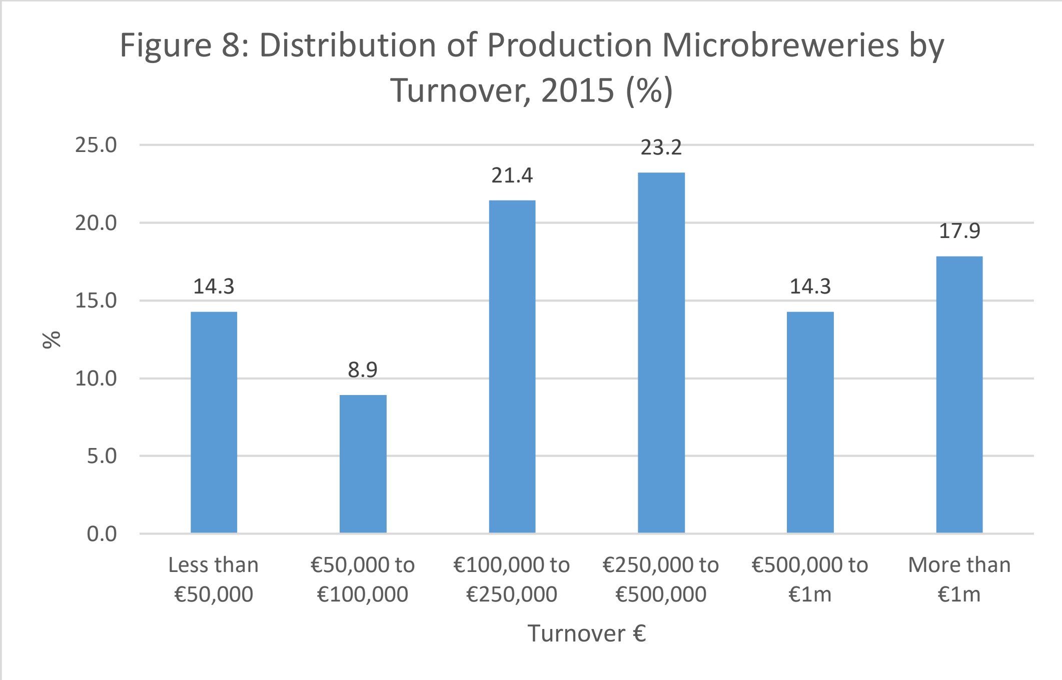


Source: Bord Bia statistics and estimates by the author

Approximately one in six microbreweries had a turnover of less than €50,000 in 2016. Similarly, one in six microbreweries has a turnover in excess of €1m. The distribution of microbreweries by turnover has remained relatively unchanged in the last year. See Figures 7 and 8.



Note: Estimated by the author based on survey data; refers to 71 microbreweries.



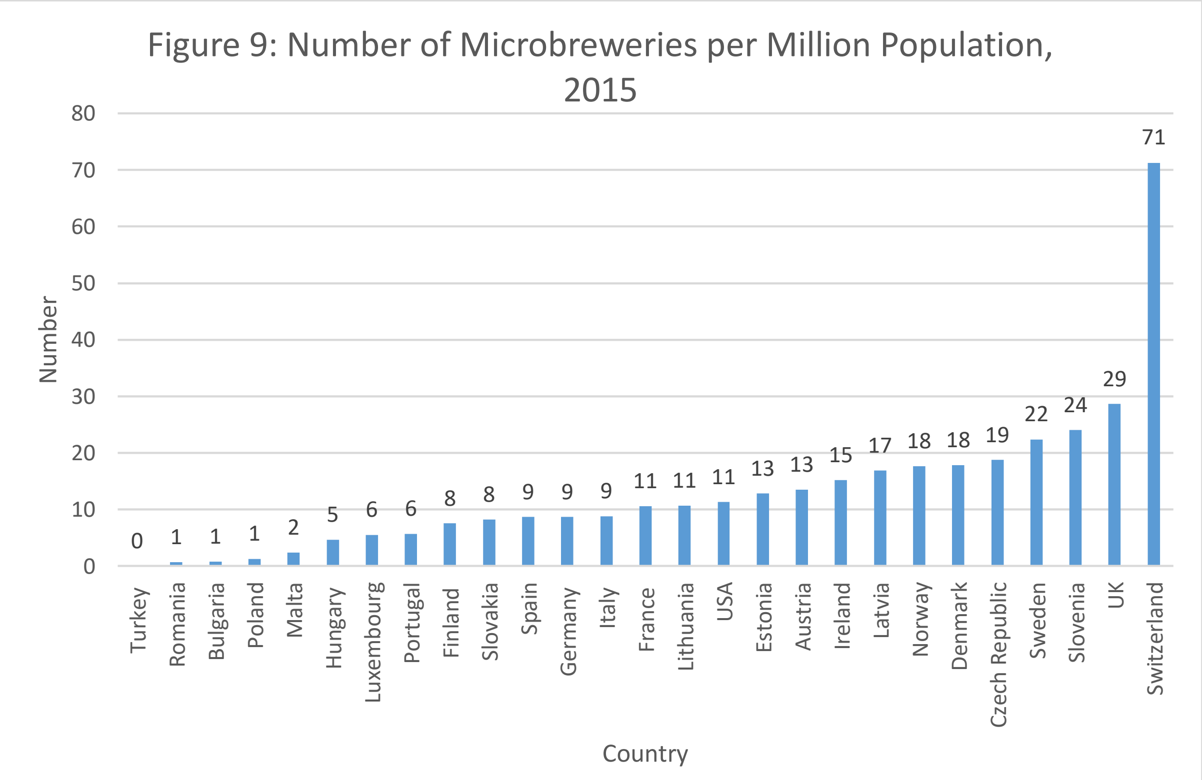
Note: Estimated by the author based on survey data; refers to 62 microbreweries.

3. Future Growth in Microbrewing

The rapid increase in both the number and output of microbreweries since 2011 suggests that further strong growth is possible. For this to occur, microbreweries have to have sufficient capacity to ensure supply, and consumer demand has to continue to grow. This section of the report first looks at the current development of the Irish microbrewing industry in an international context, before considering the structure of existing demand and the production capacity of the industry.

3.1 The Development of Irish Microbrewing in an International Context

Looking at the number of microbreweries per million population for various country, es for the year 2015, it is clear that the development of microbreweries in Ireland has advanced relative to other countries.[4] In 2013, it was ranked 17th in terms of microbreweries per million population. In 2015/16, Ireland's ranking has moved up to 9th. However, at just over 15 microbreweries per million inhabitants, Ireland still lags behind other countries in terms of the number of breweries per capita.. For example, Ireland had just over half the rate of the UK, and lags behind Denmark, the Czech Republic and Slovenia. Switzerland has an exceptionally well-developed craft industry at 71 breweries per million population, or almost five times the rate in Ireland. [5]



Sources: compiled by the author from data provided by Beer Europe, the Brewers Association USA, United Nations statistics as well as survey data. Due to rounding, zeros mean less than one.

[4] The year 2015 is the latest for which comparative data are available. The Irish data refer to the current (2017) number of microbreweries.
[5] Of these five countries, only the Czech Republic has a per capita beer consumption in excess of that of Ireland.

If Ireland were to ultimately match countries such as the UK, Denmark Czech Republic and Slovenia with over 20 microbreweries per million, then a total of at least 100 microbreweries could be envisaged for the Republic of Ireland as a whole. However, the evidence presented in Section 2 suggests that the rate of establishment of new breweries has slowed significantly in Ireland in early 2017. If this persists, then a level of 100 microbreweries may take some time to be attained.

While the number of microbreweries in Ireland now exceeds the USA as a whole, some individual states have very large numbers of craft breweries. For example, Vermont and Oregon have 64 and 53 microbreweries per million population, while States such as Montana, Wyoming, Colorado and Maine have in excess of 40 microbreweries per million population. The overall average for the USA as a whole is reduced by States such as Georgia, Alabama, Kentucky and Texas which have less than 5 microbreweries per million population.

Total beer consumption per capita varies little across the various States indicating that this is not a significant factor in the density of microbreweries. A number of studies have indicated, however, that regulatory factors have had a significant impact on the development of the craft beer sector. [6] Various States have regulations hindering craft breweries from directly distributing their product and sale from own premises. Favourable tax regimes have also been shown to be a positive factor in the differential development of the craft beer sector across States. Additionally, States have relaxed planning regulations to allow breweries to set up in favourable locations.

Another perspective is provided by comparative levels of production of craft beer at home and abroad. Such data are more difficult to obtain, however, the USA experience is well documented. In 2016, craft beer sales in the USA accounted for 12.3% by volume of all beer sales.[7] This compares with the equivalent figure of just under 2% for Ireland in the same year. It is clear that, on this measure, Irish craft beer production still has substantial potential for growth. [8]

3.2 Microbrewery Capacity

The survey asked respondents to report their current annual capacity. Based on the data provided, it is estimated that the current (2017) capacity of the microbrewing production companies is approximately 350,000HL. This compares with an equivalent figure of between 400,000 and 450,000 HL at the time of the 2016 survey. The difference is due to the fact that three microbreweries reduced their capacity estimate significantly in 2017.

[6] Elzinga et al. Craft Beer in the United States: History, Numbers and Geography, Journal of Wine Economics. Volume 10, Number 3, 2015 and Burgdof. Craft Breweries Abound in States with Fewer Regulations. Foundation for Economic Education. 2017.

[7] Brewers Association, USA

[8] Even though the overall demand for beer in Ireland is relatively static.

However, on reflection, the 2016 estimates for the three microbreweries appear to be somewhat implausible, when viewed in the light of their actual output.

It is clear that capacity in the sector is high relative to output. As output is 176,000 hl for 2016, the capacity estimate of 350,000 HL suggests a capacity utilisation rate of 53%. This is a low utilisation rate. Unused capacity is approximately 155,000hl.

The indications are that capacity will continue to grow apace. Almost 36% of responding microbreweries stated that they are currently investing in even more capacity. In some cases, the proposed addition to capacity is very substantial in microbrewing terms, amounting to typically a doubling of existing capacity.

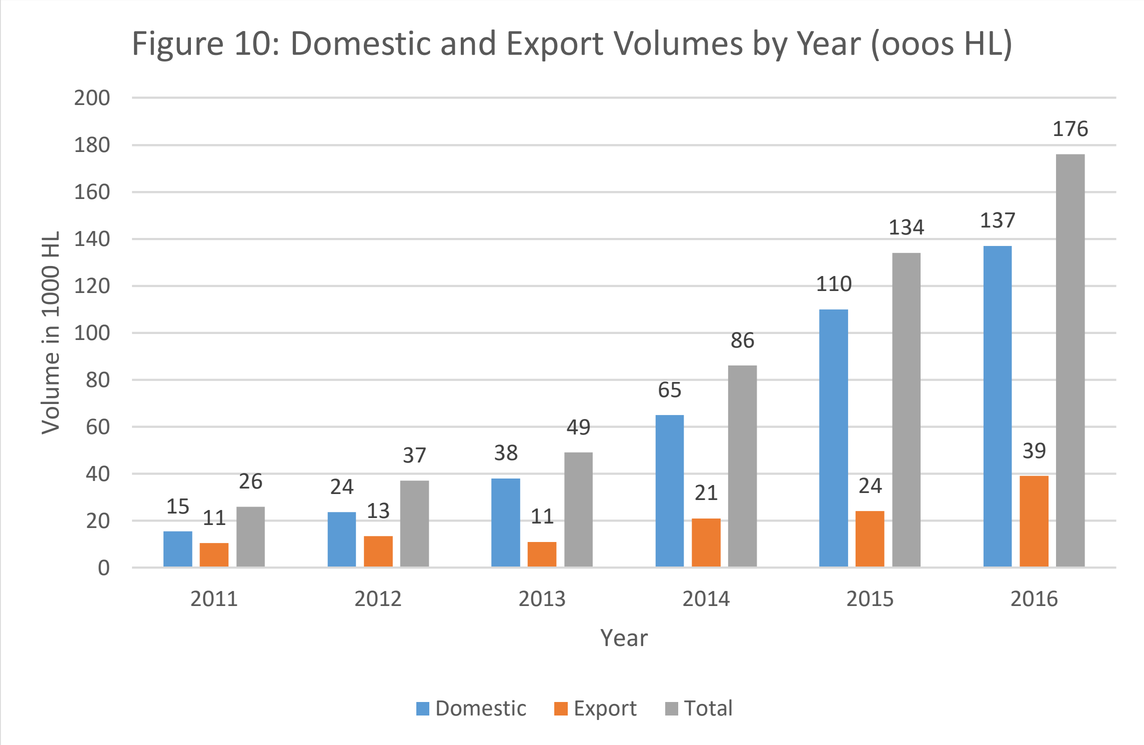
Thus, it is clear that capacity will not act as a restraint on supply. Rather, at the current rate of demand growth of some 40,000 hl per annum and the continued investment in capacity, the prospect is that capacity will continue to substantially exceed output for several years to come.

3.3 Structure of Market Demand

Of the 176,000 hl of craft beer produced in Ireland in 2016, 137,000 hl was consumed in the domestic market, with 39,000 hl going for export. Thus, exports accounted for 22% of total production. This is a very substantial increase in export volumes of 63% compared to 2015. In contrast, the domestic market grew by 25%.

While in the past, the domestic demand has been the driving force in growing output, exports are assuming greater importance. See Figure 10.

About 56% of microbreweries export some of their production. However, the quantities are often very small. Four producers account for 69% of all exports by volume. It is becoming clear that there will have to be a greater focus on exports, if the microbrewing sector is to continue to exhibit a strong rate of growth.



3.4 Export Markets

Survey respondents, who were engaged in exporting, were asked to rank their top three export markets in order by export volume. Twelve export markets were mentioned, with the UK receiving the most mentions followed by France and then Italy. The USA and Russia also figured strongly. Other countries mentioned were Netherlands, Belgium, Denmark, Germany, Austria, Portugal and China.

A ranking, taking account of the volumes exported by each microbrewery, was devised. On this basis, the USA, followed by the UK, France and Italy were the principal export markets by volume in 2016.

However, this is only an approximate picture of export markets, as export volumes are concentrated in a small number of producers. These producers would have significant export volumes outside their top three export markets. These would not have been recorded in the survey. [9]

Existing exporters were also asked to nominate the countries they believed were the markets with the most potential for them. France emerged as the market with most potential, followed by UK, USA, Italy and China/Hong Kong.

Some 44% of microbrewers do not currently export and 80% of these intend to develop export markets in the next few years. When non-exporters were asked to nominate the markets with the most potential, many were uncertain and indicated geographical

[9] Information on only the top three export markets was sought to keep the questionnaire to a reasonable length and to ensure that it could be readily completed. For the same reasons, export volumes for individual export markets were not sought.

regions, such as “EU” or “Europe” rather than specific countries. However, the UK emerged as their first choice for markets with potential, followed by the USA and France.

3.4 Barriers to Development

Output from the micro brewing industry is currently doubling every two years, so it has the potential to become a significant element in the Irish drinks industry, with benefits to the economy, through increased employment and a developing role in tourism.

In the past, the sector has benefitted from regulatory changes introduced by Government viz. the raising of the ceiling which applies to the excise tax relief from 20,000 hl to 30,000hl and the payment of the excise tax rebate on an ongoing rather than retrospective basis.

A recurring concern in the sector relates to restrictions on sale of own beer to brewery visitors and, to a lesser extent, at farmers’ markets. Sale of beer from own premises is seen as a valuable marketing tool that would have significant dividends for Irish tourism.

At the time of writing, the Intoxicating Liquor (Breweries and Distilleries) Bill 2016 is before the Oireachtas and undergoing amendments to bring it into line with other retail legislation. Once enacted, microbreweries would be allowed to sell their own products on site for a restricted period during the day.

Survey respondents were asked whether it was their intention to develop a visitors’ facility, if the 2016 Bill is enacted. Of the 50 microbreweries that responded to this question, 8 already had a visitor facility in place, while 36 intended to develop such a facility. Only 3 microbreweries did not intend to provide such a facility, while 3 did not know. Thus, 88% of microbreweries either have or intend to develop a visitor facility.

3.5 Conclusions

There is substantial potential, based on international experience, for further development of the Irish craft beer industry in terms of both numbers and output. An increase in the number of breweries to more than one hundred and a five-fold increase in output is possible over the longer term.

There is currently substantial unused capacity and more is planned. This could facilitate major output growth in the short term, if the growth in demand is sustained. To date, domestic demand has largely driven output growth. While two-thirds of microbreweries export, the volumes are typically small. Four producers account for 69% of all exports by volume. There is a need for other microbreweries to expand their export performance. Some 44% of microbrewers do not currently export and 80% of these intend to develop export markets in the next few years.

Regulatory change to permit the sale of beer from brewery premises would support the future growth of the sector and contribute to the development of tourism.

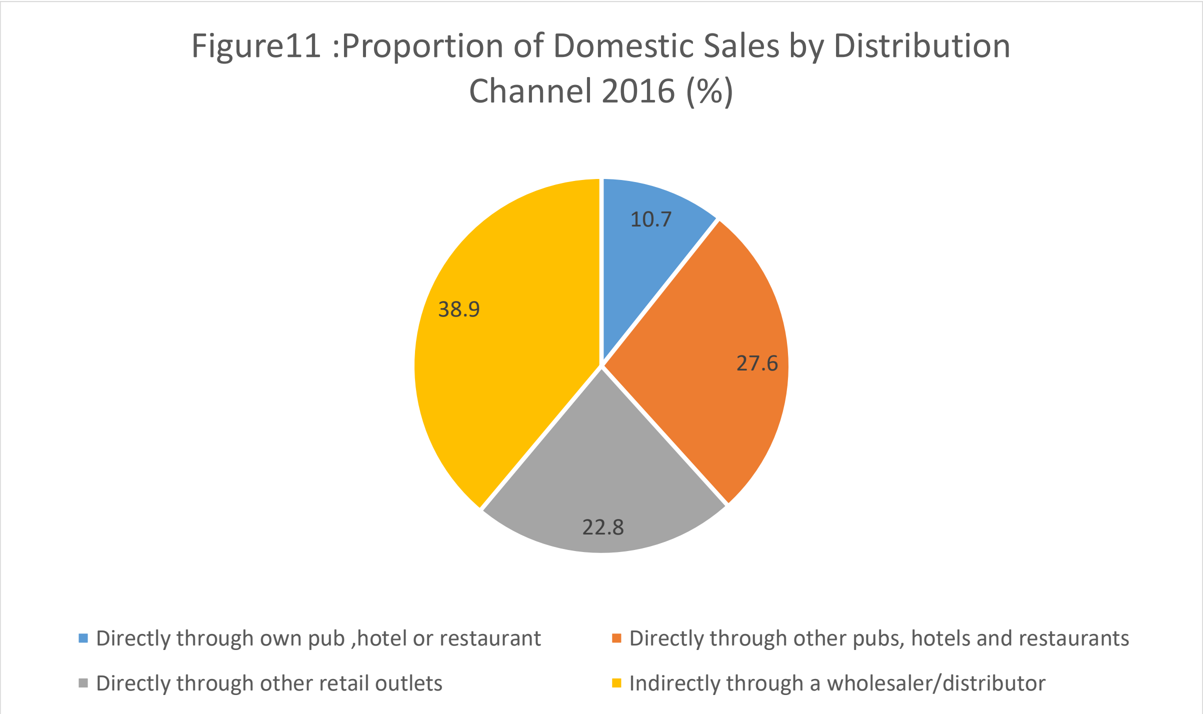
4. Operational Characteristics of Microbreweries

4.1 Distribution

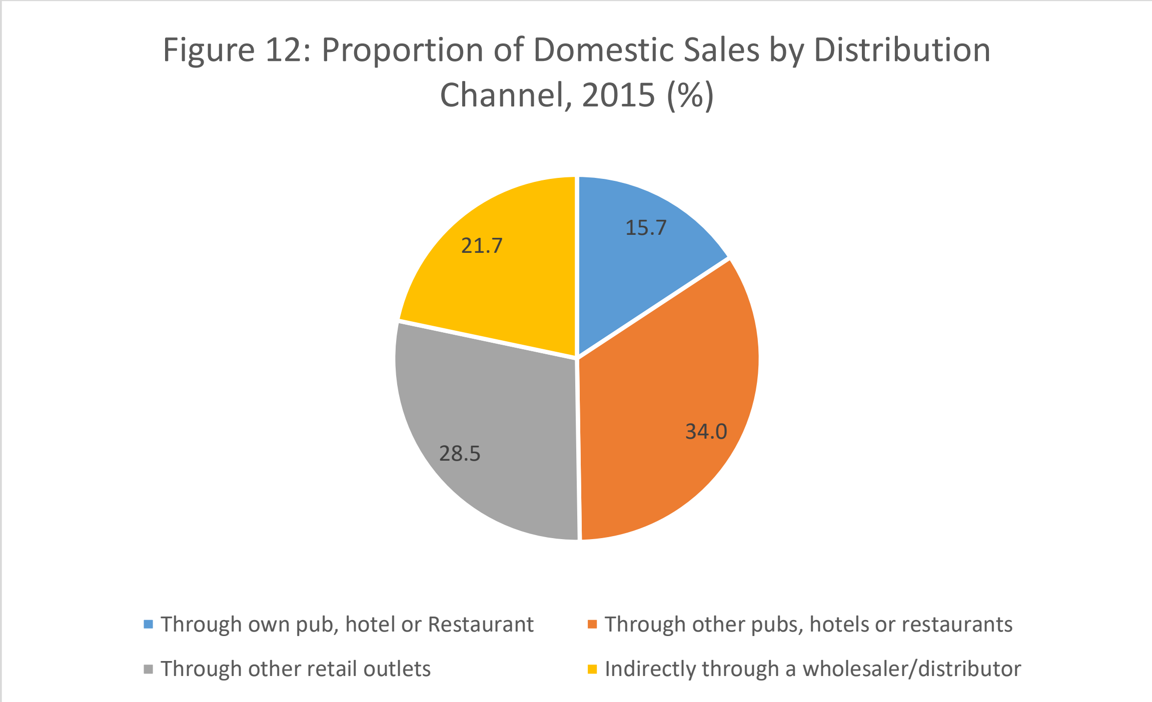
Microbreweries have a number of distribution channels open to them. They can distribute their product themselves or use a wholesaler/distributor. Figure 11 depicts the proportion of domestic sales through various channels for 2016. It shows that over 60% of sales are directly distributed by the microbrewers themselves, principally through pubs, hotels and restaurants. Of this, 11 percent is through brewery-owned pubs, hotels or restaurants. Some 28% of sales are through other pubs hotels and restaurants, while 23 % are directly through other retail outlets (mainly off licences).

Compared to 2015, the most significant change is the increased use of third party wholesaler/distributors. Some 39 % of domestic sales are distributed this way – close to a doubling of the 2015 figure.

Of course, microbreweries typically use at least three out of the four channels to some degree. For example, 64% of the 46 microbreweries surveyed used the three distribution channels other than through own outlets.



Source: estimated by the author using data from 46 production microbreweries



Source: estimated by the author using data from 51 production microbreweries

4.2 Packaging

Microbreweries have a number of ways of packaging their product: bottles, cans, kegs or casks. Table 3 sets out the number and proportion of microbreweries using each packaging option. Keg is the most frequently used packaging option (94.1% of microbreweries), with bottle a close second (88.2%). Seventeen microbreweries in the survey now use cans compared to nine in 2015 and only three microbreweries in 2014.

Table 3: Number and Proportion of Microbreweries using Various Packaging Options, 2016.

Packaging Option	Number of Microbreweries	Proportion (%)
Bottle	45	88.2
Can	17	33.3
Cask	20	39.2
Keg	48	94.1

Source: based on a survey of 46 microbreweries

4.3 Employment

Production microbreweries in Ireland currently (mid-2017) employ an estimated 516 people. This means that the production microbrewing sector has created 37 extra jobs in the past year. [10]

Of the total of 516 persons employed, 342 represent full time jobs. This is a small decline in full-time employment since 2016. There are also 113 employed part-time, an increase from 75 in 2016. Seasonal employment amounted to 61 persons in 2017 up from 53 in 2016.

At 516, the total number of persons employed is 7.6% up on 2016. This compares with an increase in output of 36%. Moreover, there has been a shift from full-time to part time and seasonal employment, which means that employment on a full time equivalent (FTE) basis has increased only marginally from 390 in 2016 to 408 in 2017. In fact, 47% of microbreweries have reduced employment on an FTE basis in 2017.

Of the 455 persons employed on a regular basis, 97, or just over one-fifth, are female.

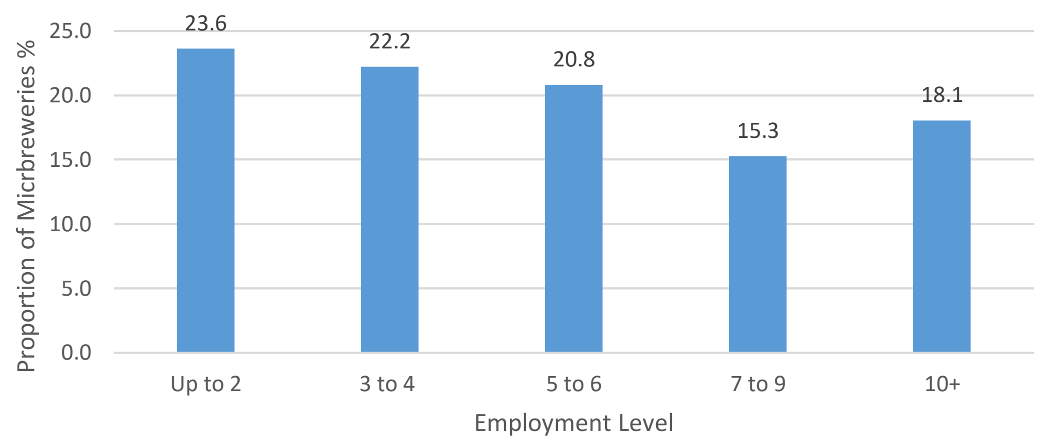
Some three-quarters of microbreweries have a staff member with a formal brewing qualification. It is estimated that there are some 88 persons in the sector as a whole with formal brewing qualifications, amounting to 26% of all persons employed full-time.

Generally speaking, individual microbreweries employ few people, typically between 3 and 5 persons (see Figure 13). However, almost one-fifth of breweries now employ 10 or more people

Microbrewing is a much more labour intensive activity than conventional large scale brewing. With regard to the brewing industry as a whole, the Irish Brewing Association (IBA) estimate that there were 1,371 full time employees in the industry in 2016 producing 7.7m hl, or 179 full time employees per m hl.[11]At the current rate of employment, the equivalent figure for the micro-brewing industry would be 2,318[12]. This makes micro-brewing in Ireland thirteen times more labour intensive than macro-brewing.

[10] Excludes bar staff in own pubs.
[11] IBA. The Irish beer industry and its importance to the Irish economy IBA (undated)
[12] Estimated by the author based on survey results for 2015 levels of employment and output.

Figure 13: Distribution of Microbreweries by Employment Level, 2017



Note: Estimated for 72 microbreweries by the author based on survey data

An associated feature of the micro brewing industry is that it is subject to economies of scale. As plant size increases, operational personnel do not increase in line. This is illustrated in Table 4 that relates employment in full time equivalents per 1000 hl of production to the level of output from the microbrewery. Very small breweries have high unit labour costs, which diminish somewhat as production levels increase. [13]

Microbreweries in the start-up phase are relatively labour intensive. While this has benefits for the economy as a whole, it means that they are subject to higher unit production costs compared to macrobreweries. This reduces the ability of the microbreweries to compete. Microbreweries currently benefit from an excise tax rebate of 50%. This is a significant benefit to them in maintaining competitiveness in the face of their cost structure.

Table 4: Employment Intensity of Production

Brewery Annual Output(HL)	Employment(FTEs)per 1000 hl
<500	9.6
>500<=1,000	4.1
>1,000<=2,000	2.7
>2,000<=5,000	1.7
>5,000	1.3

Source: based on the 2016 and 2015 surveys

[13] The Society of Independent Brewers in the UK has identified a similar trend: see SIBA. Local Beer Report, 2013

4.4 Production Losses

Revenue will allow some production losses without payment of duty on goods, provided the losses are caused by events outside the warehouse keeper's control or inherent in the nature of the product, production processes, holding, storage or transportation and are not considered to have been released for home consumption. Duty may not be charged on losses which are shown to be due to fortuitous events, or inherent in the nature of the products in the course of their production or processing.

The survey asked respondents to indicate the range of production losses that they normally incurred. The average loss incurred was 9.7% by volume. Table 5 shows the distribution of losses incurred, with 58.7% of microbreweries having losses in excess of 7%.

Table 5: Distribution of Microbreweries by Range of Losses Incurred, 2016

Losses	Proportion of Microbreweries (%)
Less than or equal to 7%	41.3
Greater than 7% less than or equal to 10%	23.7
Greater than 10%	37.0
Total	100.0

Based on 46 microbreweries

5. Economic Impact

5.1 Direct Employment

Microbreweries provide employment in the brewing process, in marketing and distribution of the product, as well as in general administration. Because many breweries are small or in the start-up phase, they often employ personnel on a part-time basis. Equally, because demand is subject to variation and seasonal products are produced, staff are also employed on an occasional basis.

It is estimated that at current (2017) production levels, production microbreweries that are in operation are employing 408 persons on a full time equivalent (FTE) basis. [14]

4.2 Indirect and Induced Employment

The micro-brewing industry sources over half of its brewing ingredients by value domestically. For example, almost 95% of microbreweries source supplies of malted barley from within the Republic of Ireland, typically amounting to 80% to 90% of all their malted barley inputs. [15] Distribution is another source of local spin-off activity. As was indicated above, 22% of the output of the sector is currently channelled through wholesalers/distributors.

Thus, there are significant downstream benefits for the agricultural and other sectors in Ireland.

By identifying the sectors from which the micro-brewing industry purchases and the use of the CSO's Input-Output tables, it is possible to estimate the wages and salaries to which these purchases give rise.[16] An indirect employment effect can then be calculated.

This indirect employment was estimated at 343 persons. This means that every person employed in production micro-brewing is matched by another in the wider economy that supplies the industry.

The craft brewing labour force earns incomes that are spent on goods and services produced in Ireland. The production of these goods and services also gives rise to employment. Based on the CSO's Input-Output Tables, this induced employment is estimated to amount to 130 persons for 2017. On this basis, the craft brewing industry supports almost 900 jobs in Ireland (see Table 6).

[14] FTEs are estimated assuming that part-time is one half of full-time and occasional is one sixth.
[15] Based on the survey
[16] The CSO Input-Output Tables for 2010 were used

Table 6: Employment Supported by the Microbrewing Industry in Ireland, 2017 (FTEs)

Category of Employment	Number of Persons Employed (FTEs)
Direct	408
Indirect	343
Induced	130
Total	871

Source: estimated by the author

4.3 Regional Impact

Of the 72 production microbreweries in operation in mid-2017, 10 are in County Cork, compared to 7 in Dublin. There are a further 11 in the counties of Wicklow, Kildare and Meath that make up the wider Dublin Region.

There are microbreweries in operation in 25 of the 26 counties, with the exception of Westmeath. Employment in the micro-brewing industry is thus very widely dispersed throughout the country. It is also worth noting that microbreweries are sited in rural as well as urban areas, which enhances the local employment effect.

Table 6 depicts the current regional distribution as of mid-2017.

Table 6: Number of Production Microbreweries by County, 2017

County	Number of Microbreweries	County	Number of Microbreweries
Carlow	1	Louth	3
Cavan	1	Longford	1
Clare	2	Mayo	4
Cork	10	Meath	3
Donegal	5	Monaghan	1
Dublin	7	Offaly	1
Galway	5	Roscommon	1
Kerry	4	Sligo	2
Kildare	3	Tipperary	1
Kilkenny	1	Waterford	3
Laois	1	Westmeath	0
Leitrim	1	Wexford	4
Limerick	2	Wicklow	5

Source: compiled by the author; refers to 72 breweries in production in mid-2017

Microbreweries are also focussed to a significant degree on local markets. On average, 56% of their sales are within a 50 kilometre radius of their brewery. Some breweries have a much more local focus. Some 10% of microbreweries are focussed exclusively on the local market (i.e. within 50 kilometres radius)

4.4 Tax Revenue Benefits

While microbreweries benefit from a tax rebate, they still pay substantial excise duties to the Revenue Commissioners. Based on estimates of domestic sales for 2016, it is estimated that microbreweries will pay the Revenue Commissioners some €7.3m in excise duties in respect of 2016 production.[17]

In addition to the above, the wages that microbreweries pay out give rise to income tax and PRSI payments to the Exchequer. These arise from direct, indirect and induced employment. The anticipated income tax and PRSI which will be paid by the industry and its employees in respect of production in 2016 are set out in Table 7. The micro brewing industry is expected to generate over €3.4m in income tax, USC and PRSI receipts for the Exchequer. This rises to €9.8m when indirect and induced tax and PRSI revenues are taken into account. [18]

The tax and PRSI revenues arising from the microbrewery industry at 2016 production levels at €9.8m exceeds the expected excise tax rebate in respect of 2016 production.

Table 7: Summary of Anticipated Income Taxes and PRSI, 2016

Category of Payment	Income Tax (€m)	PRSI (€m)	USC (€m)	Total (€m)
Direct	1.5	1.3	0.6	3.4
Indirect	2.1	1.8	0.8	4.6
Induced	0.8	0.7	0.3	1.8
Total	4.4	3.7	1.7	9.8

Source: estimated by the author

[17] Based on a 4.7% ABV content.
[18] This assumes that, at the current high rate of unemployment, additional employment in micro-brewing will reduce unemployment numbers by the same amount. The net expenditure gain to the Exchequer in terms of reduced social welfare payments has not been included in the above figures.

6. Conclusions

- It is estimated that there are some 100 microbreweries operating in the Republic of Ireland, of which 72 are production microbreweries and at least 30 are brand owners that source all of their product from production microbreweries.

- There has been a 16% increase in the number of production microbreweries from 62 in 2016 to 72 in 2017. The number of microbreweries has increased almost fivefold since 2012. Since 2015, the rate of increase in new breweries has slowed from a high of 50% to the 16% recorded in 2017. There is evidence that only two new microbreweries have been established in the first half of 2017.

- The output of craft beer by production microbreweries amounted to 176,000 hectolitres (hl) in 2016. This represents a 31% increase on the 2015 figure of 134,000hl. In absolute terms, output rose by 42,000hl. Both the absolute change in 2016 and the percentage growth rate are less than last year. There is evidence that the market became more difficult for some microbreweries in 2016, with one in six breweries reporting a decline in production compared to 2015.

- Total beer production in Ireland amounted to 7,680,000 hl in 2016. The microbrewery production of 176,000hl in 2016 represents 2.3% of the production market.

- The consumer market for beer in Ireland was 4,576,000 hl for 2016. Of the 176,000hl produced by microbreweries in 2015 some 137,000 hl were sold in the domestic Irish market, indicating an Irish microbrewery share of Irish beer consumption of 3%.

- Based on the 2016 estimates for Irish craft beer production, the share of Irish craft beer in overall Irish beer production has risen approximately six fold since 2012.

- The total turnover of craft beer producers in 2016 is estimated at €52m, up 30% from €40m in 2015. In the five years since 2011, turnover has increased more than ten-fold.

- Based on international experience, there is substantial potential for further development of the Irish craft beer industry in terms of both numbers and output. An increase in the number of breweries to more than one hundred and a five-fold increase in output is possible over the longer term.

- There is currently substantial unused capacity and more is planned. This could facilitate major output growth in the short term, if the growth in demand is sustained. To date, domestic demand has largely driven output growth.

- While two-thirds of microbreweries export, the volumes are typically small. Three producers account for 78% of all exports by volume. There is a need for other microbreweries to expand their export performance..

- The USA, followed by the UK, France and Italy were the principal export markets by volume in 2016.

- A recurring concern in the sector relates to restrictions on sale of own beer to brewery visitors and, to a lesser extent, at farmers' markets. This is seen as a valuable marketing tool that has significant dividends for Irish tourism. At the time of writing, the Intoxicating Liquor (Breweries and Distilleries) Bill 2016 is before the Oireachtas. Thus, 88% of microbreweries either have or intend to develop a visitor facility at their brewery, if the Bill is enacted.

- Employment in production microbreweries has exceeded 500 persons for the first time. At 516, the total number of persons employed is 7.6% up on 2016.

- Of the total of 516 persons employed, 342 represent full time jobs. This is a small decline in full-time employment since 2016. There are also 113 employed part-time, and increase from 75 in 2016. Seasonal employment amounted to 61 persons in 2017 up from 53 in 2016. Thus, there has been a shift from full-time to part time and seasonal employment,

- Employment on a full time equivalent (FTE) basis has increased only marginally from 390 in 2016 to 408 in 2017. In fact, 47% of microbreweries have reduced employment on an FTE basis in 2017.

- Microbrewing is a much more labour intensive activity than conventional large scale brewing. Micro-brewing in Ireland is thirteen times more labour intensive than macro-brewing.

- For every person employed in production micro-brewing is matched by another in the wider economy that supplies the industry.

- The craft brewing labour force earns incomes that are spent on goods and services produced in Ireland. The production of these goods and services also gives rise to employment. This induced employment is estimated to amount to 130 persons for 2016. On this basis, the craft brewing industry supports almost 900 direct indirect and induced jobs in Ireland.

- There are microbreweries in operation in 25 of the 26 counties, with the exception of Westmeath. Employment in the micro-brewing industry is thus very widely dispersed throughout the country.

Appendix 1: Organisation of the Survey

Introduction

This Appendix summarises the approach adopted to the Survey of microbrewing companies.

Identifying the Population

The first task was to identify the population of microbrewing companies to be surveyed. Although the emphasis was on the establishing the volume of craft beer produced in Ireland by production microbreweries, it was also considered useful to survey contracting companies where possible. Based on an internet search and industry sources, a list of microbrewing companies was developed. This list identified 72 production microbreweries and over 30 contracting companies that were in operation in May 2015 – a total of more than 100 companies in all.

Survey Methodology

The survey was undertaken electronically using Survey Monkey. A questionnaire was developed and dispatched to respondents via Survey Monkey. Respondents could then fill in the survey electronically by ticking boxes in respect of closed questions or writing in answers.

Sample Size

The survey focused on the 72 production microbreweries, although a small number of contract companies were, where there was a possibility that they had progressed to production in their own right.

Questionnaire

A questionnaire was developed for use in Survey Monkey. The emphasis was on the use of closed questions, so that the response could be in the form of ticking boxes. It was designed so that it could be completed in approximately five minutes if respondents had the information to hand.

Survey Response

Of the total of 72 production microbreweries companies, 55 opened the survey and 51 provided data – a response rate of 71%. A key statistic sought from respondents was their production level in 2016. Forty-seven production microbreweries or 67 % of the total provided such data.

Of the 21 production microbreweries that did not make a usable return, 5 had commenced production during 2016/17. They may have felt that they had little to report.

Production Estimation Methodology

One of the purposes of this report was to track the output from Irish microbreweries. As 2016 is the last full calendar year, the estimation of output in that year was a key focus of the report. This estimate was made in the following manner.

Of the 72 production companies, 2 were not relevant as they had commence production in 2017. 47 provided a direct estimate of 2015 production from the survey. A further 9 breweries had responded to the 2015 or 2016 surveys and an estimate was available from this source. This meant that there was a direct production estimate available for 55 of the 70 relevant breweries. For the remainder, where production capacity was available from their website, this was used to determine their full annual output. Their 2016 output was then estimated by factoring for the number of months of operation in 2016. The output for the remaining breweries was obtained by comparing them to similar breweries for which data was available: for example, the production estimate for two brewpub/hotels was made by reference to survey data for similar operations, factoring, where appropriate, for the number of operational months in 2016.