

**An Assessment of the Economic
Contribution of the Thoroughbred Breeding
and Horse Racing Industry in Ireland**

A Final Report

for the

**Irish Thoroughbred Breeders' Association,
European Breeders' Fund, and
Horse Racing Ireland**

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Glossary of Terms

Mean. The mean is the average of the scores in the population. Numerically, it equals the sum of the scores divided by the number of scores. The mean average is, however, subject to greater influence by relatively high or low values ('outliers') in the sample.

Median. The median of a population is the point that divides the distribution of scores in half. Numerically, half of the scores in a population will have values that are equal to or larger than the median and half will have values that are equal to or smaller than the median. This statistical measure is less influenced by extreme low or high values in a sample than is the mean average (defined above).

Multiplier. The multiplier is concerned with how national income changes as a result of a change in an injection, for example investment. The multiplier was a concept developed by the economist, John Maynard Keynes, which stated that any increase in injections into the economy (investment, government expenditure or exports) would lead to a proportionally bigger increase in National Income. This is because the extra spending would have knock-on effects creating in turn even greater spending. The size of the multiplier would depend on the level of leakages. It can be measured by the formula $1/(1-MPC-MPM)$ where the MPC is the marginal propensity to consume and the MPM is the marginal propensity to import.

Net Benefit. The net overall economic benefit derived from an activity (such as thoroughbred breeding). They differ from gross benefits in that they represent the net contribution to Irish economic activity after subtracting expenditure on imported inputs and the opportunity cost of labour and other resources used in supplying such services.

Opportunity Cost. The value of the best foregone alternative use for a resource. In the case of the thoroughbred breeding industry, the net benefit of the sector to the economy must take account of opportunity cost of labour and other resources used in supplying products and services purchased by breeders where these resource may be put to use elsewhere in the economy.

Revenue. The total value of receipts during a specified period. In the case of stallion services, revenue represents the value of stallion fees received in any one year.

Standard deviation. The standard deviation is a measure of the variability present in a data sample. It represents the squared sum of the difference between the mean and each data point in a sample. A high standard deviation points to a high degree of variance within a sample.

Value-added. The value of output minus the value of all intermediate inputs used in production, representing therefore the contribution of, and payments to, primary factors of production. In the case of the thoroughbred breeding sector, value added constitutes the additional value created after subtracting the cost of inputs in the breeding process.

Executive Summary

This report has been prepared for the Irish Thoroughbred Breeders' Association, the European Breeders' Fund and Horse Racing Ireland by Indecon International Economic Consultants. The report represents an independent assessment of the economic contribution of the thoroughbred breeding and horse racing industry in Ireland. It also provides an evaluation of the costs and benefits of the current tax exemption of stallion fee income.

This report is structured as follows: After an introduction in Section 1, we set the context for the assessment in Section 2 by presenting a profile and economic contribution of the stallion sector and in the following two sections we examine the economic contribution of the breeding and the horse racing and betting sectors. In Section 5 we describe the historical context and current status of the tax incentives available to the industry. Section 6 then reviews the extent and nature of tax and other incentives available in other jurisdictions. Section 7 considers a number of important issues relevant to the evaluation of the economic costs and benefits of the current tax treatment of stallion income. The key findings of each element in our analysis are summarised below.

A range of previous studies and other research in Ireland and internationally examined the economic contribution of the thoroughbred breeding and horse racing industry, in terms of employment, inward investment, export sales and expenditure by the industry in the other sectors of the economy. A common conclusion of the previous research is that the thoroughbred breeding and horse racing industry contributes to the economy both directly and indirectly, though the magnitude of estimates of the contribution of the industry varies across studies. The size of the estimates of economic contribution is sensitive to the estimation methodology.

Profile and Economic Contribution of Horse Racing, Stallion and Thoroughbred Breeding Industry in Ireland

The profile and economic contribution of the stallion, broodmare, horseracing and betting sectors in Ireland is presented in sections 2-4. The industry has grown very rapidly in recent years and without the type of supports provided to other agricultural sectors.

The key findings of the analysis are as follows:

- Ireland had a thoroughbred stallion population of 390 in 2003. The Irish stallion sector includes 89 farms and is characterised by a large number of small to medium-sized farms with a small number of larger farms¹;
- The broodmare population was 16,938 in 2003;
- Foal production is increasing and was 10,574 in 2003;
- Ireland is now the third largest thoroughbred producer in the world accounting for over 42% of EU output. Bloodstock production now accounts for approximately 10 % of all livestock production in Ireland and 4.4% of agricultural output;
- Ireland has a high number of racehorses, reflected in the number of racing fixtures and races held annually;

¹ Unless otherwise stated data refers the island of Ireland but tax computations relate to the 26 counties.

- In 2003, there were 303 racing fixtures at 27 racecourses (25 in the Republic of Ireland and 2 in Northern Ireland);
- Betting in Ireland shows significant growth. On-course betting in 2003 totalled €237 million. Off-course betting by Irish residents increased by 228% between 1997 and 2003, to €1.9 billion.

Based on a detailed methodology, we examine the economic contribution of the stallion sector, the breeding/broodmare sector, and the horse racing/betting sector. A summary of the components of economic contribution and estimates of the value attaching to them is presented in the table overleaf. Net income, also referred to as value-added, is the value of output minus the value of all intermediate inputs used in the breeding process, representing therefore the contribution of, and payments to, primary factors of production. Total contribution, on the other hand, measures the broader economic contribution of the industry including indirect and induced economic activity stimulated by thoroughbred breeding and horse racing (the 'multiplier' effect). For the stallion sector net income is estimated to be between €7 million and €16.4 million. For the breeding sector it is estimated to be €108.1 million.

The horseracing and betting elements of the sector involved 1.4 million persons attending various race meetings in Ireland last year and an estimated 17% of summer race meetings attendees are foreign visitors who contribute to the tourism sector.

It is estimated that the stallion and breeding/broodmare sectors employ approximately 4,100 persons on a FTE basis. Given the presence of part-time employment, this translates into employment of about 4,700 persons. We are aware that Industry sources believe that employment in the sector is significantly higher than these estimates. We accept that the employment estimates are sensitive to the methodology used but in this report we have adopted a prudent approach to the estimation of employment to ensure that the estimated economic contribution of the sector is not overestimated.

For the horse racing, training and betting sectors, it is estimated that the number of persons employed as Jockeys, Trainers and Stable Yard Staff equals 3,375 persons. There is an estimated 1,600 persons employed (including part-time employment) at race meetings and in the running and maintenance of racecourses. This excludes indirect employment in auxiliary services which is estimated to be 2,700. Employment in the betting sector related to horse racing is estimated to equal around 4,200. In all these areas a significant part of this is part-time employment.

It should be noted that much of this employment is in a rural areas where alternative sources of employment may be limited.

Economic Contribution of the Thoroughbred Breeding and Horseracing Industry in Ireland	
Component of Economic Contribution	Estimated Value
Breeding Stallion Sector	
Net income or value-added	€7.0 to €16.4 million
Level of employment ²	2,400 persons
Total Gross Contribution including net output or added value, indirect, induced and multiplier impacts of sector expenditures	€132 Million
Breeding Broodmare Sector	
Net income or value-added	€108.1 million
Level of employment	2,300 persons
Total Gross Contribution including net output or value added, indirect, induced and multiplier impacts of sector expenditures	€198.4 million
The Horseracing Sector	
Attendances at racing fixtures	1.4 million (2003)
Attendance income	€23 million (2003)
On-course expenditure (excl. betting)	€20.6 million (2002)
Off-course expenditure (excl. betting)	€ 89.2 million (2002)
Employment	
- Racecourses	1,600 persons
- Jockeys, Trainers and Stable Yard	3,375
- Indirect Employment	2,700
Total	7,675
Betting Sector	
Off-course betting (bookmakers)	€1,921 million (2003)
On-course bookmakers and Tote betting	€227.3 million (2003)
Off-course Employment	3,500 persons
On-course Employment	726
Total	4,200

Description of Irish Tax Incentives

In this section we describe the historical context and the current status of the tax treatment of the thoroughbred breeding and horse racing industry in Ireland. The main findings of this section are as follows:

- The tax legislation concerning the tax-exempt status of stallion fee income dates back to the 1939 Finance Act, subsequently the Finance Act 1969 which exempted all farming profits and income/profits from stallion fees from Irish Income Tax.

² In this table the employment numbers are reported which are defined as persons employed without adjusting for part-time employment. It should be noted that part-time employment is significant in all the sub sectors under review.

- The exemption of stallion income from Income Tax was extended to companies under Section 11(6) of the 1976 Corporation Tax Act.
- Taxation, valuation and depreciation rules differ noticeably across jurisdictions, a point which is illustrated in our international review in Section 6.
- Under the Finance Act, 2003, a requirement was introduced that the profits or gains arising from the above activities must be included in the annual return of income even though the income or gains are exempt from tax. This new requirement will apply in respect of chargeable periods commencing on or after 1 January 2004.

Review of Incentives in Other Jurisdictions

In order to assess the competition Ireland faces in attracting and retaining quality stallions, we reviewed the tax and other incentives offered to the thoroughbred breeding industry in various jurisdictions. The jurisdictions examined include the UK; Australia; New Zealand; France; and USA (New York, California, Florida, Texas and Kentucky). The main findings of this Section are as follows:

While the nature of the incentives offered vary from jurisdiction to jurisdiction (including between U.S. states), the results of our analysis show that tax and other incentives apply in other countries. Incentives offered tend to focus on the reduced rate application or non-application of income tax and sales tax, as well as breeder incentive programmes, which offer additional prize money to domestic-bred race winners;

The tax treatment of stallions, broodmares and young stock with regard to permitted accounting conventions, such as tax write-downs and depreciation of assets, also varies considerably across jurisdictions;

Some jurisdictions that offer tax and other monetary incentives to thoroughbred breeders, are considering enhancements to the current level of incentives. The U.S. state of Kentucky, which is a leading breeding location, is debating the proposed introduction of a sales tax exemption in addition to the breeder incentive programme, which could further strengthen the Kentucky thoroughbred breeding industry;

The findings of this review indicate that competition between jurisdictions on the basis of incentives is strong although this in itself does not justify any particular tax regime in Ireland.

Evaluation of Economic Costs/Benefits of Irish Stallion Tax Incentive

An important feature of the tax incentives for the thoroughbred breeding sector in Ireland is that it appears that most of the ownership of shares in stallions is held by companies rather than individuals. Due to the low corporate tax rate in Ireland, the revenue costs of the incentives for these companies is much lower than would be the case if these shares were held by Irish individuals. This characteristic differs from many other tax incentives in Ireland where beneficiaries are individuals and where the costs of the tax incentives are proportionally much higher. While there is some uncertainty regarding the precise tax costs, based on available information, we

estimate that the gross cost of the tax incentives for the thoroughbred breeding sector is around €3 million .

If standard Irish taxation were applied to the sector we believe that it is likely that the gross tax revenue would be reduced as removal of the incentive would be likely to impact on the size of the sector, which is based in Ireland. Because of the internationally traded nature of the sector, the Commission on Taxation recommended that income from stallion fees be relieved from tax to whatever level is necessary to ensure the continued development of the industry in Ireland.”³

Against the estimated gross tax cost we conservatively estimate that the stallion and the broodmare sector contributes a combined tax contribution of €37.5 million. These estimates exclude the tax contribution of the horse racing sector in Ireland.

³ Commission on Taxation (1984), page 76.

1 Introduction and Background

Introduction

- 1.1 This report has been prepared for the Irish Thoroughbred Breeders' Association, the European Breeders' Fund and Horse Racing Ireland by Indecon International Economic Consultants. The report represents an assessment of the economic contribution of the thoroughbred breeding and horse racing industry in Ireland and an evaluation of the costs and benefits of the current tax exemption of stallion fee income.

Background and Terms of Reference

- 1.2 The background to this study is that Indecon International Economic Consultants were commissioned by the Irish Thoroughbred Breeders' Association, the European Breeders' Fund and Horse Racing Ireland to prepare an independent assessment of the economic contribution of the sector to the Irish economy.
- 1.3 The objectives of this study are to:
- Update elements of previous reviews undertaken;
 - Quantify the economic value of the thoroughbred industry in Ireland;
 - Review the rationale of the tax treatment of the industry.

Approach to Assessment

- 1.4 In terms of undertaking this assessment of the thoroughbred breeding and horse racing industry, our approach has entailed a number of key aspects, including:
- Confidential Indecon survey of the Thoroughbred Breeding Sector in Ireland;
 - A description of the current position and historical context of the stallion tax incentive in Ireland;
 - Detailed quantification of economic impact of thoroughbred breeding and horse racing sectors;
 - Review of Irish and international research on the economic contribution of the sector;
 - Interviews/consultations with, and submissions from, key operators, individuals and organisations within the industry;
 - Confidential Indecon survey of Stud Farms in Ireland;

- Review of incentives in other countries;
- Detailed evaluation of economic costs and benefits of stallion tax incentive.

Structure of Report

- 1.5 This report is structured as follows: in the next section we set the context for the assessment by presenting a profile and economic contribution of the stallion sector and in the following two sections we examine the economic contribution of the breeding and the horse racing and betting sectors. In Section 5 we describe the historical context and current status of the tax incentives available to the industry. Section 6 then reviews the extent and nature of tax and other incentives available in other jurisdictions, including competitor markets of Australia, New Zealand, and the US. Finally, Section 7 evaluates the economic costs and benefits of the current tax treatment of stallion income.

Acknowledgements and Disclaimer

- 1.6 We would like to acknowledge the extensive contribution of a range of organisations and individuals to this study. Firstly, we would particularly like to thank the European Breeder's Fund, the Irish Thoroughbred Breeder's Association, Horse Racing Ireland and Irish Race Horse Trainers Association for their invaluable inputs and ongoing assistance.
- 1.7 We would also like to thank the large number of individuals and organisations in the industry – both stallion and broodmare operations – who replied to our extensive survey of the industry. Without their assistance, it would not have been possible to complete this assessment.
- 1.8 The views and analysis in this report are however the sole responsibility of Indecon. While every care and attention has been taken by Indecon to ensure the accuracy of this report, we are not responsible for any omissions or errors.

2 Profile and Economic Contribution of the Stallion Industry

Introduction

- 2.1 The thoroughbred breeding and horse racing industry is comprised of three main elements: stallions, broodmares and horseracing. The Betting industry is a related sector that is inextricably linked to these other sectors⁴.
- 2.2 Accordingly, there are four main sectors that we consider in this report:
- Horseracing;
 - Betting;
 - Breeding - Stallions;
 - Breeding - Broodmares.
- 2.3 In this section we examine the profile and economic contribution of the stallion sector and in the following two sections we examine the economic contribution of the breeding and the horse racing and betting sectors. It is however useful to first summarise the key findings from previous studies.

Summary of Key Findings from Previous Research

- 2.4 Before presenting our analysis of the current economic contribution of the different sectors within the industry, it is useful to summarise the key findings from our review of previous research on the economic contribution of the industry. It is important to note that the size of the estimate of economic contribution is highly sensitive to the estimation methodology used and the various factors included in these estimates. None of the previous studies examined the industry in its entirety.

⁴ For example, 65% of off-course betting in Ireland is on horse racing.

- 2.5 The previous research presented a range of estimates of the economic contribution which are summarised below and presented in more detail in Annex 1:
- The number of persons employed in the industry (excluding horse racing and betting) has been estimated to total 4,430 Full-Time-Equivalents (FTEs) in 1995;
 - A second study estimated that total number of persons employed as 11,500 FTEs, while total expenditure by the broodmare sector was estimated to total €119.5 million (IR£94.1 million) in 1996;
 - A third study estimated that the value of output in 2000 at €161.5 million, while the industry employs 5,237 FTEs;
 - A fourth study estimated the value of the Galway Summer Racing Festival to the local economy, with the total contribution estimated at €58.3 million in 2002.

Framework for Analysis

- 2.6 There are a number of potential approaches that may be applied in the context of estimating the overall economic contribution or impact of a given economic sector. In general, one may estimate the net overall economic contribution of a given economic activity on the basis of three alternative definitions, namely the output, income and expenditure approaches.
- 2.7 The output, income and expenditure measures of overall national economic contribution are defined below. It should be noted that, based on the principles of national income accounting, in theory the estimates yielded by applying each of these approaches should be equivalent⁵:
- Output - which measures the sum of the value added created through the production of goods and services;
 - Income - which measures the total incomes generated from the production of goods and services, including incomes earned by companies, employees and the self-employed;
 - Expenditure - which measures the total expenditures on completed goods & services produced.

⁵ In practice, estimates based on each definition may diverge to the extent that they are calculated based on different data sources.

- 2.8 An important issue in estimating economic activity is the requirement to avoid 'double counting'. For example, it would be incorrect in estimating the national net economic contribution of a given economic activity to include both the total value of production of a good or service and the value of the inputs to this production. By subtracting the value of inputs from the value of total output, one arrives at total value-added produced, which is the correct measure of the net economic contribution of a given activity.
- 2.9 It should also be noted that the above measures are 'gross' estimates of economic activity in that they do not subtract the value of capital assets used during the production process. For example, assets must be depreciated over a given time period. Furthermore, when considered from a sectoral perspective, the above definitions of economic activity could be considered as 'static' measures, in that they do not take account of indirect, induced or multiplier impacts arising from expenditures taken place within a given sector on the wider economy. Moreover, within the income and expenditure measures are included net incomes received by the exchequer. These issues are considered further in this report.
- 2.10 Given the multi-faceted nature of the wider industry and the existence of data limitations in some areas, it is necessary to consider the overall economic impact of the industry from the perspective of a range of aspects relating to outputs, incomes and expenditures.

The Stallion Sector

- 2.11 In this section we estimate the economic contribution of the stallion industry in Ireland based on the latest data. In Section 3 we consider the economic impact of the breeding sector.

Stallion Population

- 2.12 The key element of the industry is the stallion sector, which is the element of the industry that benefits from an income tax exemption. Ireland has a significant population of stallions standing at stud. As shown in Table 2.1 the number of stallions in 2003 totalled 390 thoroughbreds.

Table 2.1: Number of Thoroughbred Stallions at Stud in Ireland, 1984-2002

Category	1984	1995	1997	2002	2003	% change 1995-2002
Number of Stallions at Stud	250	373	367	356	390	+4.5%

Source: Tansey, Webster & Associates (1996) and Horse Racing Ireland.

Scale of Irish Stallion Farms

- 2.13 Table 2.2 presents statistics on the scale of operations of Irish stud farms based on analysis of the findings of Indecon's Confidential Survey of Stallion Farms in Ireland. The survey respondents accounted for 111 stallions out of an estimated total of 390 but we understand that most of stallion income is included in our respondents.
- 2.14 The statistics yield interesting facts about the size distribution of Irish stud farms. The mean size of farms surveyed was 5 stallions, based on the returns. However, the median and mode statistics reveal that at least half of the farms surveyed have 3 stallions or less, with 3 stallions being the most popular scale of operation. That the mean number of stallions per stud farm is greater than the median indicates that there are considerably larger operations that are pushing up the average size. This indicates that the Irish stallion sector has a large number of small to medium-sized farms. In addition, there are a small number of large farms accounting for the majority of horses and stallion income. There is a small number of international stallion stud farms which stand stallions of the highest quality and which are available to both Irish and international breeders.

Table 2.2: Statistics on Scale of Operation of Stud Farms in Ireland from Survey Respondents - Numbers of Stallions at Stud

Statistics	No. of Stallions Standing
Total	111
Mean	4.8
Median	3
Mode	3
Standard deviation	5.2

Source: Indecon Confidential Survey of Stud Farms in Ireland

- 2.15 Consistent with our survey data, the 390 stallions in Ireland (Table 2.1) are standing at an estimated 89 stallion farms (Table 2.3), implying an average of 4 stallions per stud. However, the sector is concentrated, with a number of large farms. Available information also shows that a large number of the leading stallions internationally are located in Ireland.

Table 2.3: Number of Stallion Farms in Ireland

Item	Number
Number of Stallion Farms in Ireland	89
Source: Europeans Breeders' Fund.	

Economic Contribution of the Stallion Sector

- 2.16 In estimating the overall direct economic contribution of the stallion sector we divide our analysis into the following elements:
- the net output or value-added generated from Irish-based stallion activities;
 - the level of employment and employment incomes generated;
 - the exchequer contribution of the stallion sector;
 - the indirect, induced and multiplier impacts of expenditures in the sector;
 - the net overall economic contribution, considering the opportunity cost of labour and deadweight impacts.

Net value-added from Irish-based stallion activities

- 2.17 Figure 2.1 summarises our approach to estimating the net value-added contribution from Irish-owned stallion activities.

Figure 2.1: Approach to Estimating Net Economic Contribution of Stallion Sector in Ireland
Direct annual revenues generated from stallion fee income in Ireland
<i>Less</i>
Annual costs of Stallion keep, insurance and capital depreciation
<i>Equals</i>
Annual Net Value-Added from Stallion Services

Stallion fee income

- 2.18 The revenues generated by the stallion sector are derived from the fees earned through the covering of broodmares by stallions standing on stud farms. We noted in Table 2.1 that there were 390 thoroughbred stallions at stud in 2003, while we estimate that, on the basis of EBF data, there are approximately 89 stud farm operations in Ireland.
- 2.19 As part of this study, we accessed data on nominations fees by EBF registered thoroughbred stallions in 2002 across a total of 89 stud farm operations. Summary details of the number of mares covered and the average fee per cover in 2002 are shown in Table 2.4.

Table 2.4: EBF-registered Thoroughbred Stallion Fee Income - Details of Income Earned in 2002

Statistics	2002
Number of mares covered	16,438
<i>Average fee per cover - €</i>	8,481
Source: Indecon analysis of EBF data	

- 2.20 According to the figures, there were a total of 16,438 coverings and the average fee charged per mare covered was €8,481. It should be noted, however, that this average masks a substantial variation in actual fee rates achieved and top quality international stallions command substantially higher fees. The so-called median value of nomination fees is considerably lower than this average reflecting the fact that a large number of stallions are not successful at stud and command very modest fees. This reflects the uncertainty of the breeding business and in many cases returns do not match the capital outlays.
- 2.21 Also, there are non-EBF registered stallions in the overall number of stallions at stud in Ireland. However, we understand that these stallions account for a very low level of stallion income and that most of the sector's income is included in the above estimates. Also of relevance is the fact that this income includes, for example, foal shares, as well as direct income. Finally, it should be noted that regarding the number of mares in Ireland different sources provide different estimates. The data for this analysis indicates that there were 16,438 mare coverings. Data from HRI indicate that there were 16,467 mares in Ireland in 2002 whereas Weatherbys have an estimate of 14,700. The difference between these data sets is due to the inclusion of visiting mares from the UK and Europe.
- 2.22 In estimating the income of the sector we need to use data on the number of foals produced as fees are paid on the basis of foals produced rather than coverings. According to the available data there were 10,088 foals produced in 2002. At an assumed average fee of €8,500, this would imply a total income for the sector of €85.5 million.
- 2.23 As mentioned above, there is significant variation in the fees charged per stallion. A breakdown of the fee range and number of foals in each range is included in Table 2.5. Assuming that the average fee for the highest category is €80,000, it is possible to estimate the sector's income by multiplying the average fee by the number of foals in each category. Using this alternative approach with this data, the income is estimated to be €84 million, similar to the €85.5 million estimated above.

Table 2.5: An Indicative Breakdown of Fee Income

Fee Range	Assumed Average Fee	Number of Foals	% of Foals in Each Category
0-952	476	2240	22.2%
953-2539	1746	3220	31.9%
2540-6984	4762	1886	18.7%
6985-12063	9524	1399	13.9%
12064-33648	22856	912	9.0%
33649 and Upwards	80000	431	4.3%

Source: Pat O'Neill, Knocklong House Stud, Weatherbys and Indecon

Annual costs/expenditures of stallion activities

- 2.24 While the total fee income generated from stallions constitutes the direct revenues generated in the sector, the figure of €85 million indicated above does not represent either the gross value-added contribution to the economy, or likely taxable income, since it is necessary to exclude from this total the costs/expenditures incurred by stallion owners in generating this income. These costs include wages & salaries, stallion keep and promotional expenses and insurance. There are also the capital costs which are accounted for through annual write-down costs/depreciation of stallions held.
- 2.25 In estimating the costs incurred by stud farms in generating stallion income, we have based our assumptions on two sources of data/information, namely the estimates of the proportion of stallion revenues accounted for by costs identified in previous research and the findings from Indecon's confidential survey.

Net value-added from stallion activities

- 2.26 In Table 2.6 we present our lower and upper bound scenario estimates for the net value-added contribution of the stallion sector. These scenarios estimate the total net value-added of the stallion sector by subtracting estimated wage & salary costs, keep and other expenses, and depreciation and financing costs from total stallion fee revenues generated across the 89 stud farms included in the EBF data.
- 2.27 We assume that estimated keep and other expenses are equivalent to 5 % of stallion fee income. We also incorporate assumptions about depreciation and financing costs. Depreciation is an important element as capital investment is key aspect of the stallion sector as the

sector is very capital intensive with significant on-going investment. There are various formal approaches to depreciation. We have examined various methodologies, including that used by the Central Statistics Office, as summarised below.

- 2.28 In the computation of the Agricultural Output statistics, the CSO incorporate a measure of fixed capital consumption, or depreciation. The methodology used is that of replacement cost. The calculation is based on assumptions of productive life. For stallions, the CSO assume a productive life of 20 years. In the case of broodmares, they assume a shorter productive life of 14 years.⁶

$$\begin{aligned} \text{The Stallion Replacement Cost} &= \\ & (1/20 \times \text{Number of Stallions at Stud}) \times \text{Average Value per Head} \\ \\ \text{Broodmare Replacement Cost} &= \\ & (1/14 \times \text{Number of Broodmares at Stud}) \times \text{Average Value per Head} \end{aligned}$$

- 2.29 The annual charge for depreciation is then calculated as follows:

$$\begin{aligned} \text{Annual Depreciation Charge} &= \\ & (\text{Stallion Replacement Cost} + \text{Broodmare Replacement Cost}) - (\text{Income} \\ & \quad \text{earned by Stud Farms from Foreign Broodmares}) \end{aligned}$$

- 2.30 Thus, the CSO calculate the value of equine output as follows:

$$\begin{aligned} \text{Value of Equine Output} &= \\ & \text{Value of Foals \& Yearlings} - \text{Annual Depreciation Charge} \end{aligned}$$

- 2.31 We have produced estimates based on two scenarios. This reflects the uncertainty associated with the capital cost investment in the sector and the extent to which this would be written off against tax. It also reflects the differences in purchase price between horses and the uncertainty of the breeding business.
- 2.32 Under Scenario A we assume that depreciation and financing costs are estimated at 35% of fee income. This implies an estimated total net value-added contribution from the stallion sector under Scenario A of

⁶ Industry sources believe that this over-estimates the productive life of either a stallion or a mare.

€7 million in 2002. Under Scenario B we have assumed that estimated depreciation and financing costs amount to 24% of stallion fee revenues, implying an upper bound estimate for the total net value-added contribution of €16.4 million in 2002. It should be noted that the depreciation costs are estimated on a net basis, i.e. they take account of annual depreciation and any capital gains involved in stallion ownership. It should also be noted that this is an industry that requires continuous investment. We understand that profits made are normally re-invested to produce new stock and rejuvenate the sector. This is reflected in our assumptions about depreciation.

Table 2.6: Upper and Lower-bound Scenarios for Estimated Net Value-Added Contribution of Stallion Sector - 2002 - €		
Statistics	Lower-bound Scenario A - 2002 Millions	Upper-bound Scenario B - 2002 Millions
Total stallion fee income - €	85	85
<i>Less</i>		
Estimated cost of Wages & Salaries (see Table 2.14 below)	44	44
Estimated other keep and expenses @ 5 % of stallion fee income	4.25	4.25
Estimated depreciation and financing costs - Scenario A @ 35% of fee income Scenario B @ 24% of fee income	29.75	20.4
Total Net Value-Added - €	7	16.4
Source: Indecon analysis based on EBF data, review of previous research and revised assumptions re average costs of stallion keep and depreciation		

2.33 It should be noted that income from sales is considered in the next chapter.

Employment and employment income

2.34 In addition to the gross value-added contribution of the stallion sector, direct employment and related incomes are also generated by stud farm activities. This is comprised of full-time, part-time and casual employment. A range of statistical indicators of the numbers of full-time persons employed by stud farms responding to the Indecon survey (which includes the 6 largest operations in Ireland) is shown in Table 2.7 overleaf.

Table 2.7: Indecon Survey of Stud Farms in Ireland - Details re Employment in Stud Farm Operations - Statistics on Number of Full-time Persons Employed - 2000 and 2003			
Year	June 2000	June 2003 estimate	Average - 2000/2003
Total full-time persons employed	833	887	860
Mean per stud farm	43.8	42.2	43
Median per stud farm	3	3	3
Mode	2	2	2
Standard deviation	86.9	89.6	88.3
Source: Indecon Confidential Survey of Stud Farms in Ireland			

- 2.35 According to the survey findings, a total of 887 persons were employed on a full-time basis across the responding stud farm operations in 2003. On average between 2000 and 2003 a total of 860 persons were employed on a full-time basis. It is also notable that in 2003, the average number of full-time employees per stud farm was 42 persons. However, that this average masks considerable variation and includes a small number of large employers. This can also be seen from the fact that the median level of full-time employment (3 persons in 2003), which is substantially below the average. The most commonly reported number of full-time employees (the mode) is 2 persons.
- 2.36 A statistical analysis of the numbers of part-time employees based on Indecon's survey of stud farms is presented in Table 2.8 below. A total of 140 persons were reported as being employed on a part-time basis in 2003, while the average between 2000 and 2003 was 148 persons. The average number of part-time employees per respondent stud farm operation was 9.1 persons. However, this includes a wide range of operations of differing scale. The median part-time employment per operation was 3 persons in 2002.

Table 2.8: Indecon Survey of Stud Farms in Ireland - Details re Employment in Stud Farm Operations - Statistics on Number of Part-time Persons Employed - 2000 and 2003

Year	2000	2003 estimate	Average - 2000/2003
Total part-time persons	156	140	148
Mean	10.4	7.8	9.1
Median	3	3	3
Mode	1	3	2.0
Standard deviation	25.1	18.2	21.6
Source: Indecon Confidential Survey of Stud Farms in Ireland			

- 2.37 The estimates presented above of full-time and part-time employment on stud farms underestimates the actual total level of employment as the estimates are based on a sample of stud farms responding to the Indecon survey.
- 2.38 As the figures on full- and part-time employment in the stallion sector presented above are based on a survey sample it is necessary to account for the fact that the sample will not capture the total level of employment supported by the sector. Reflecting this methodological issue, we estimate the total level of employment in the sector based on the application of the estimated average number of full-time equivalent (FTE) employees required to keep one stallion and the total registered number of stallions at stud, as presented in Table 2.9 below.

Table 2.9: Upper Estimates of Employment in Stallion Sector in Ireland - 2003	
Estimates	2003
Estimated total reported FTEs employed ¹ (Indecon survey)	957
Total no. of reported stallions at stud (Indecon survey)	111
Estimated no. of FTEs per stallion at stud in Ireland - Indecon	8.6
Registered total no. of stallions at Stud - Horse Racing Ireland - 2003	390
Estimated total employment in stallion sector - FTEs	3,354
Source: Indecon analysis based on data from Indecon Confidential Survey of Stud Farms in Ireland, and Horse Racing Ireland - Strategic Plan 2003-2007. Notes: ¹ Based on the assumption that 1 part-time employee in 2003=0.5 full-time employee	

- 2.39 According to Indecon's survey of stud farms, there were an estimated total of 957 full-time equivalent employees reported as employed in the keeping of a reported total of 111 stallions at stud, implying a ratio of FTEs per stallion of 8.6 persons.⁷ Applying this ratio to the total of 390 registered stallions at stud (based on figures supplied by Horse Racing Ireland) yields an estimate for the total number of full-time equivalent jobs supported by the stallion sector in Ireland of 3,354 in 2003.
- 2.40 However, we believe that this may over-estimate the number employed as smaller studs will, in all probability, have a lower number of persons employed per stallion. This may reflect the fact that the quality and value of stallions is lower in the smaller stud farms. While the above estimates are broadly in line with those of previous research, we believe that in evaluating the economic impact of any sector that a more prudent approach to estimation is required.
- 2.41 Accordingly, we assume that for the remaining 279 stallions at stud, there is a ratio of FTE to each stallion of 4.3 (i.e. half the rate of the survey respondents). This provides an estimate of full-time equivalents employment of 2,154. The actual number of persons employed would be higher as this includes part-time employment.

⁷ This ratio is comparable with that estimated in previous studies. For example, the Report of the Commission of Inquiry into the Thoroughbred Horse Breeding Industry (1986) estimated that "about 10 persons are employed full-time for each flat stallion" (Pages 35-36).

- 2.42 The adjusted estimates of employment in stallion sector in Ireland are presented in Table 2.10. This suggests a total employment of 2,154 full-time equivalents compared to the previous higher estimate of 3,069 FTEs, and we believe it is appropriate to use this more prudent estimate in the economic evaluation. This equates to about 2,400 persons.

Table 2.10: Adjusted Estimates of Employment in Stallion Sector in Ireland 2003	
Estimates	2003
111 Stallions at FTE/Stallion Ratio of 8.6	954.6
279 Stallions at FTE/Stallion Ratio of 4.3	1,199.7
Adjusted estimate of total FTE employment in stallion sector	2,154
Source: Indecon analysis based on data from Indecon Confidential Survey of Stud Farms in Ireland, and Horse Racing Ireland - Strategic Plan 2003-2007.	

- 2.43 We are aware that industry sources believe that employment in the sector is significantly higher than these estimates. We accept that employment estimates are sensitive to the methodology used but in this report we have adopted prudent estimates to ensure that the estimated economic contribution of the sector is not overestimated.

Geographic Distribution of Stud Farms in Ireland

- 2.44 It is interesting to consider the geographic location and dispersal of stud farms within Ireland. Table 2.11 presents a summary of the results of our survey in relation to the location of the stud farms surveyed. It is clear that the stallion sector exhibits a dispersed geographic distribution pattern and that the sector shows a strong geographical bias towards rural areas. Given the lack of alternative rural employment, this pattern is important for the consideration of the regional impact of the stallion income exemption.

Table 2.11: Indecon Survey of Stud Farms in Ireland - Geographic Location of Operations

Region	% of Total
South West	8.4
Mid East	29.2
South East	37.6
West	4.2
Northern Ireland	4.2
Others	16.4
Total Responses	100

Source: Indecon Confidential Survey of Stud Farms in Ireland

Employment Incomes from Stallion Sector

- 2.45 The employment created by the operation of stud farms will also generate substantial employment incomes. Although these incomes represent costs for the stallion sector and are therefore not included in gross value-added (as noted above), they yield an additional contribution in the form of PAYE and PRSI tax payments to the exchequer. In addition, employment incomes input to the creation of additional indirect and induced spending elsewhere in the economy (described later).
- 2.46 A number of statistical indicators of the level of wages & salaries paid to employees in the stud farm sector over the period 2000-2003 based on the Indecon survey is shown in Table 2.12 below. These figures include the six largest stud farm operations and indicate that wages & salaries totalled approximately €27 million in 2003 across the stud farms responding to the survey.

Table 2.12: Indecon Survey of Stud Farms in Ireland - Details of Operations - Statistics on Annual Gross Wages & Salaries Paid - € Millions

Year	2000	2001	2002	2003 - estimate	Average annual - 2000/2003
Total	18.8	21.6	26.9	26.9	23.6
Mean	1.30	1.5	1.6	1.6	1.5
Median	.055	.0565	.0585	.042	.053

Source: Indecon Confidential Survey of Stud Farms in Ireland

- 2.47 As in the case of employment, the figures presented above in relation to wages & salaries are likely to underestimate the total level of employment income generated in the stallion sector. This is because the above figures are based on a sample of stud farms. To overcome this issue, we have estimated the total employment income generated in the stallion sector on the basis of multiplying the estimated total number of full-time equivalent jobs supported by the sector by the estimated average wage/salary per full-time equivalent employee from our survey. Our analysis is shown in Table 2.13 overleaf. We estimate that on the basis of an average wage/salary per FTE of €20,428 and an estimated total number of full-time equivalent jobs of 3,069, employment income in the stallion sector in 2003 totalled €62.6 million. Given that this employment figure may be too high as discussed previously the income figure may also have to be adjusted downwards. This is examined further overleaf.

Table 2.13: Upper Bound Estimate of Total Employment Income Generated by the Stallion Industry in Ireland - 2003	
Estimates	2003
Estimated average wage/salary per FTE - Indecon survey	€20,428
Estimated total FTEs	3,069
Upper bound estimate of total direct employment income generated	€62.6 Million
Source: Indecon analysis based on data from Indecon Confidential Survey of Thoroughbred Sector in Ireland and Horse Racing Ireland, Strategic Plan 2003-2007. Notes: Based on the assumption that 1 part-time employee=0.5 full-time employee	

- 2.48 Based on the assumed lower employment figure of 2,154, we estimate that employment income generated by the stallion sector in Ireland totalled €44 million in 2003 (see Table 2.14).

Table 2.14: Adjusted Estimate of Total Employment Income Generated by the Stallion Industry in Ireland	
Estimates	2003
Estimated average wage/salary per FTE - Indecon survey	€20,428
Adjusted estimate of total FTEs (see Table 2.10)	2,154
Adjusted Estimate of Total Direct Employment Income	€44 million
Source: Indecon analysis based on data from Indecon Confidential Survey of Stud Farms in Ireland, and Horse Racing Ireland - Strategic Plan 2003-2007. Notes: Based on the assumption that 1 part-time employee in 2003=0.2 full-time employee and that total reported employment = 80% of actual total employment	

2.49 The direct employment created in the stallion sector will also result in indirect or second round impacts on the economy through the additional expenditure created elsewhere in the economy on the basis of the incomes generated from this employment. We will describe the extent of second-round and multiplier impacts further later in this section, although we have concerns about the use of multiplier analysis in some economic evaluations.

Annual exchequer contributions

2.50 In addition to the direct value-added generated from stallion revenues in Ireland, significant benefits also arise in the form of tax payments to the exchequer arising from stallion activities. It should be noted that the sector pays taxes on all activities apart from the stud fee exemption. These include:

- PAYE taxation on wages & salaries;
- PRSI on wages & salaries;
- Indirect taxes (VAT, where applicable⁸, and Excise taxes);
- Other taxes.

2.51 In relation to PAYE and PRSI contributions, we have estimated the total annual contribution based on the findings from the Indecon survey of stud farms in relation to the effective PAYE and PRSI tax rates. These rates are calculated from averaging the annual effective

⁸ We understand that many of the entities are not registered for VAT.

tax rates (i.e. total PAYE and PRSI paid/total wages & salaries paid) over the period 2000-2003. In Table 2.15 overleaf we present our estimates of the total PAYE tax contribution from employment in Irish stud farm operations. Based on our upper bound estimate of total employment income derived in Table 2.13 above, we estimate the total PAYE contribution of the stud farm sector at €15 million in 2003. Based on our more prudent estimate of employment income shown in Table 2.14 above, we estimate the total PAYE contribution of the stud farm sector at €10.5 million in 2003.

Table 2.15: Estimated Exchequer Tax Contribution of Stallion Activities in Ireland - PAYE Taxation from Employment Incomes - € Millions		
Details	2003 - Upper Bound Estimate	2003 - Lower Bound Estimate
Estimated effective average PAYE tax rate (average annual 2000-2003) - %	23.9%	23.9%
Estimated total employment income - 2003 - €	62.5	44
Estimated PAYE tax contribution - 2003 - €	15	10.5
Source: Indecon analysis		

- 2.52 A similar approach is applied to the estimation of the total PRSI contribution (see Table 2.16 below) which includes both employee and employer contribution. Based on our estimated effective PRSI tax rate of 13.3%, based on our upper bound estimate that total PRSI contributions to the exchequer amounted to €8.3 million. However, on the basis of our more conservative estimate of incomes, we estimate total PRSI contributions at €5.8 million in 2003.

Table 2.16: Estimated Exchequer Tax Contribution of Stallion Activities in Ireland - PRSI Taxation from Employment Incomes - € Millions		
Details	2003 - Upper Bound Estimate	2003 - Lower Bound Estimate
Estimated effective average PRSI tax rate (average annual 2000-2003) - %	13.3%	13.3%
Estimated total employment income - 2003 - €	62.5	44
Estimated PRSI tax contribution - 2003 - €	8.3	5.8
Source: Analysis based on Indecon's Confidential Survey of Stud Farms in Ireland		

2.53 Stud farm operations also contribute to the exchequer by way of VAT and Excise tax payments. The extent of VAT payments will be affected by varying VAT rates on different aspects of activity, the VAT registered status of farms⁹ and the fact that VAT on some inputs (e.g. horse feed) is zero-rated. An analysis of VAT and Excise payments based on Indecon's survey of stud farms is shown in Table 2.17 below.

Table 2.17: Indecon Survey of Stud Farms in Ireland - Annual Reported VAT and Excise Duty Taxation Paid					
Year	2000	2001	2002	2003 - estimate	Average annual - 2000/2003
Total	2,914,478	3,208,063	3,586,122	4,023,342	3,433,001
Mean per stud farm	364,310	356,451	326,011	365,758	353,133
Median per stud farm	80,677	31,844	48,546	41,475	50,635
Standard deviation	683,506	712,506	740,022	826,360	740,599
Source: Analysis based on Indecon's Confidential Survey of Stud Farms in Ireland					

⁹ We understand that a Flat VAT Refund scheme operates for farmers.

- 2.54 According to the survey figures, a reported total of approximately €4 million in VAT and Excise Duty was paid to the exchequer during 2003 by the stud farms responding the survey. The average contribution across the operators responding to our survey was €365,758 in 2003 and €353,133 on average between 2000 and 2003, although there was a substantial variation across stud farms.
- 2.55 Given that the above estimates are based on a survey sample, they are likely to underestimate the total indirect tax contribution of the stallion sector. To arrive at an estimate of the sector-wide indirect tax contribution, we have multiplied the median annual level of payments per stud farm between 2000 and 2003 reported above by the total number of stud farms as indicated by the EBF. Our estimates are shown in Table 2.18 overleaf and indicate a total contribution from the stallion sector in 2003 of approximately €4.5 million.

Table 2.18: Estimated Exchequer Tax Contribution of Stallion Activities in Ireland - VAT and Excise Duty Taxation	
Details	2003 - Estimated
Estimated total number of stud farms (EBF)	89
Average of median annual VAT/Excise contributions - 2000-2003	50,635
Indirect tax contribution of stallion sector based on Median annual contribution per stud farm 2000-2003	€4.5 Million
Source: Analysis based on Indecon's Confidential Survey of Stud Farms in Ireland and figures supplied by the EBF	

- 2.56 Our estimates of other tax contributions from stallion activities, which could include, for example, motor taxation, levies and other public charges, are shown in Table 2.19. The figures are based on Indecon's survey of stud farms and indicate that other exchequer contributions totalled €194,500 in 2003 and averaged €111,118 on an annual basis over the period 2000-2003.

Table 2.19: Estimated Exchequer Tax Contribution of Stallion Activities in Ireland - Other Tax Payments					
Year	2000	2001	2002	2003 - estimate	Average annual - 2000/2003
Total	109,602	86,330	54,042	194,500	111,118
Mean	27,400	21,582	13,511	38,900	25,348
Median	24,644	17,220	14,100	15,000	17,741
Standard deviation	26,046	20,980	10,597	63,036	30,165
Estimate total 'other' tax contribution based on 89 stud farms and median 2000-2003 payments					€1.6 m
Source: Analysis based on Indecon Confidential Survey of Stud Farms in Ireland and EBF					

- 2.57 Again, as the above figures are based on a survey sample it is necessary to gross-up these estimates to reflect the total number of stud farm operations. Based on a total of 89 stud farms and the median annual payment of €17,741, we estimate the total contribution of the stallion sector to the exchequer in the form of 'other' taxes at approximately €1.58 million.
- 2.58 In Table 2.20 below we aggregate the analysis in the preceding tables and estimate the total exchequer contribution from the stallion sector in Ireland. Our upper bound estimate indicates an annual total exchequer contribution from the stallion sector of €29.4 million. However, a more prudent estimate would indicate a total tax contribution of €22.4 million.

Table 2.20: Estimated Total Exchequer Tax Contribution of Stallion Activities in Ireland -2003 - €		
Details of exchequer contributions	2003 - Upper Bound Estimate	2003 - Lower Bound Estimate
PAYE taxation	€14.9	€10.5
PRSI taxation	€8.2	€5.8
Indirect tax contribution	€4.5	€4.5
Other	€1.6	€1.6
Total Exchequer Contribution	€29.4	€22.4
Source: Analysis based on Indecon's Confidential Survey of Stud Farms in Ireland		

Second-round and multiplier impacts

- 2.59 In the analysis above, we described the direct contribution of the stallion sector to the Irish economy from the perspective of the net value-added contribution. However, the overall economic impact of the sector can also be looked at from the perspective of the total value of expenditures by stud farms on goods and services used as inputs. Such expenditures will have direct, indirect and induced impacts on the economy as a whole. We consider these impacts further below. It is, however, important to first consider some general issues concerning second-round and multiplier impacts.
- 2.60 The danger of misinterpretation of multiplier analyses is that it might be thought appropriate that tax incentives or state subsidies should be determined by an assessment of tax contribution or economic impact rather than by an evaluation of distortions and externalities. This has been highlighted in numerous previous economic reports. For example, in an analysis produced by an academic economist, it was pointed out that:

“it is commonplace that every sector contributes heavily to the economy - much more than its initial value added; that every sector is responsible for much greater employment than its own direct employment; that every sector is making a contribution to public revenue greater than the direct expenditure on the sector by the State, and so on. It is for these reasons that economic impact studies must be treated with caution. The fundamental weaknesses in these studies derive from the assumption that in the absence of the sector, those involved in the activity would be doing nothing. This is implausible. Economic impact studies also suffer from the attempts to estimate the net budgetary effects of public expenditure in the area.... State expenditure can be justified in relation to market failure. The issue is the extent of market failure and the degree to which it should be corrected; It is not a valid argument to determine State expenditure in terms of the net budgetary implications. If this were the case it would be sufficient to find that sector with the greatest net budgetary impact and concentrate Government expenditure in that area. Economic impact studies are concerned with estimating the linkages on the production side between a sector and other sectors in the economy. All sectors exhibit these linkages to one degree or another.”¹⁰

- 2.61 Despite the above point, it is useful in evaluating the economic costs and benefits of a tax incentive or subsidy to consider the extent, if any, of economic multiplier effects.

¹⁰ See *The Economics of the Arts in Ireland*, Durkan, J., 1994

- 2.62 The 'multiplier effect' relates to the impact of indirect and second and subsequent round impacts arising out of the direct expenditure incurred on Irish good and services. The multiplier is concerned with how national income changes as a result of a change in an injection in a given area of the economy.
- 2.63 The size of any multiplier impacts is determined by the extent of 'leakages' from an economy. These include imports and taxation. The multiplier can be measured by the formula indicated below:

$$1/[(1-MPC)+MPM+MPT],$$

where MPC is the marginal propensity to consume, MPM is the marginal propensity to import and MPT is the marginal propensity to tax.

- 2.64 The expenditures incurred by stud farm operations in facilitating the servicing of mares by stallions will *inter alia* include spending on stallion keep expenses such as horse feed, bedding, veterinary services, farrier services, registration fees and transport. According to the survey figures, total reported expenditure of the stallion sector on Irish and imported goods and services was equal to €61.6 million in 2003. However, we believe that some of this may refer to capital investment in horses and for the purposes of this exercise we are focusing on actual current expenditures that give rise to a multiplier effect throughout the economy. In addition, we assumed previously that operating expenditure excluding wages and salaries was equal to 5 % of income.
- 2.65 Taking account of these two data sources we assume that expenditures amount to €40 million.
- 2.66 The total annual production expenditures of stud farms will also include expenditures on wages and salaries. As the income from employment will result in multiplier impacts on the overall economy it is important to include wages and salaries in the computation of the total expenditures of the stallion sector. Based on our adjusted estimate of total employment income across the sector shown in Table 2.14 and our estimate for total expenditures on goods and services shown above, we aggregate these two elements to arrive at an estimate for the total level of expenditure of Irish stud farms. Based on this methodology, we estimate total current expenditures of stallion operations in Ireland at €84 million in 2003.

Table 2.21: Estimated Total Expenditures of Irish Stud Farm Operations on Goods & Services and Wages & Salaries - 2000/2003 - € Millions

Year	2003 - estimate
Estimated total expenditures on goods & services - Irish + imported	€40
Estimated total expenditures on wages & salaries	€44
Estimated Total Expenditures of Stud Farms	€84

Source: Analysis based on Indecon Confidential Survey of Stud Farms in Ireland

Multiplier Impacts

- 2.67 As noted above, the overall economic impact of expenditures of Irish stud farms on stallion operations will include both direct impacts (described above) and indirect and induced impacts. As described earlier, the 'multiplier effect' relates to the impact of indirect and second and subsequent round impacts arising out of the direct expenditure incurred on good and services produced elsewhere in the economy.
- 2.68 In terms of the stages of the multiplier process that are relevant to the stud farm sector, these can be described as follows:
- Direct impacts: which include the direct expenditures of Irish stud farms on goods & services, adjusted for imported expenditures;
 - Indirect impacts: the expenditures on goods & services used by Irish stud farms are in turn dependent on inputs from other sectors of the economy, including inputs into the provision of veterinary services, feed production, transport services, etc. These indirect expenditures create further employment and associated incomes;
 - Induced impacts: the impacts resulting from the re-spending of incomes generated from the indirect impacts. These induced impacts will include additional employment creation and incomes, but will eventually reduce to zero through the successive impact of 'leakages' describe above.
- 2.69 Based on research on the Irish economy and for the purposes of our analysis of the overall economic impact of the stallion sector, we have assumed in the calculation of the multiplier a value for the Marginal Propensity to Consume of 0.6, while the Marginal Propensity to Import and Marginal Propensity to Tax is assumed at 0.2 and 0.1

respectively. This results in a multiplier of 1.43. While this is a national rate, it is not expected to differ significantly throughout the economy.

- 2.70 Applying this multiplier to the total expenditure of stud farms on both Irish and imported goods & services of €84 million yields an estimate of the total contribution to the Irish economy of expenditures undertaken in the stallion sector (see Table 2.22). These include indirect and induced impacts and are estimated at €120.1 million on an annual basis based on 2003 estimates of total spend by the sector.

Table 2.22: Estimated Total Net Contribution of Stallion Sector to the Irish Economy - 2003 - € Millions	
Year	2003 - Estimated
Estimated total expenditures	84
Multiplier	1.43
Estimated Total Net Economic Contribution	120.1
Source: Indecon analysis	

Net economic contribution after adjusting for deadweight and displacement

- 2.71 The analysis above of the overall contribution of the stallion/stud farm sector to the Irish economy considers the impacts within a 'partial' context, i.e. estimates the direct impact of the sector's outputs and expenditures on the economy. However, in assessing the impact of the current tax treatment of stallion income, it should be noted that the estimates presented above do not take account of potential deadweight and displacement effects, which may reduce the overall net economic impact of activities in the stud farm sector.
- 2.72 'Deadweight' is concerned with what would have been the case if the incentive had not been in operation. 'Displacement', on the other hand, refers to the extent to which the provision of a tax incentive or subsidy to a particular sector may lead to other negative side-effects that result in a reduction in overall benefits.
- 2.73 Related to this is the issue of the opportunity cost of the resources used in the sector. In considering the above estimates it is important not to make the simplistic assumption that all of the people employed in the sector would not find alternative employment if they were not employed in the sector. This is clearly not the case and when

assessing the overall impact on the economy the opportunity cost of these resources would need to be considered.

Summary of Main Findings

The Stallion sector

2.74 Our estimates for each component of the economic contribution of the stallion sector in Ireland may be summarised as follows:

- We estimate that total stallion fee income came to €85 million in 2002. After adjusting for costs, including wages & salaries, keep and related expenses, and depreciation and financing costs, we prudently estimate the total net value-added produced by annual stallion income in 2002 at between €7 million and €16.4 million.
- We prudently estimate that a total of 2,154 full-time equivalent jobs were supported by the stallion sector in Ireland. The employment created by the operation of stud farms also generates substantial employment incomes, which we estimate to total €44 million in 2003;
- Our conservative estimate of total exchequer contributions PAYE and PRSI taxation paid on employment incomes, in addition to VAT/Excise duties, from the stallion sector is €22.4 million in 2003;
- Assuming a multiplier of 1.43 and based on our best estimate of total current spend by the sector, we estimate the total contribution to the Irish economy of expenditures undertaken in the stallion sector to be €120.1 million.

3 Profile and Economic Contribution of the Breeding Industry

The Broodmare Sector

- 3.1 In this section we consider the Broodmare sector, whose main output is the sales of thoroughbred horses.

Population of Broodmares

- 3.2 Reflecting the high number of stallions standing at Irish studs, Ireland now has a very significant number of broodmares. Table 3.1 shows that in 2003 the number of broodmares in Ireland totalled 16,938. This is based on Horse Racing Ireland data¹¹. Reflecting very rapid growth, the total number of broodmares is up 42% and 126% on 1995 and 1984 levels, respectively.

Table 3.1: Number of Thoroughbred Broodmares at Stud in Ireland, 1984-2002						
Category	1984	1995	1997	2002	2003	% change 1995-2002
Number of Broodmares at Stud	7,500	11,950	12,900	16,467	16,938	42%
Source: Tansey, Webster & Associates (1996) and Horse Racing Ireland, <i>Strategic Plan 2003-2007</i> .						

Foals Produced

- 3.3 These broodmares are producing a significant number of foals each year. The level of foal production in Ireland for the period 2001 to 2003 is indicated in Table 3.2. The figures show that the number of thoroughbred foals in Ireland increased significantly between 2001 and 2003.

¹¹ We are aware that there is uncertainty regarding the exact number of broodmares in Ireland. This arises from confusion between the number of mares at any given time and throughput of mares through studs. Different estimation approaches may yield different results but for consistency we use the data published by Horse Racing Ireland.

Table 3.2 Average Number of Thoroughbred Foals, 2001-2003

Horses	2001	2002	2003
Thoroughbred Foals	9,452	10,214	10,574

Source: Horse Racing Ireland.

Scale of Irish Broodmare Farms

- 3.4 Table 3.3 presents statistics on the scale of operations of Irish broodmare farms, based on analysis of the findings of Indecon's survey. The statistics yield interesting facts about scale of operation of broodmare farms in Ireland. For both broodmares owned and broodmares boarded, the high average statistics coupled with low medians and high standard deviations, confirm that the broodmare sector in Ireland is characterised by a small number of very large farms with a large number of smaller farms. In total, there are about 8,000 registered mare owners of different sizes with a total of 16,467 mares. Over 6,500, of these have between 1 and 2 mares. For broodmares owned, the average per operation is 12.5. For broodmares boarded, while the average is 64.5, this is not representative because of the small number of large farms.

Table 3.3: Statistics on Total Numbers of Broodmares Currently Owned and/or Boarded in Irish-based Operations Based on Survey Respondents

Statistics	Broodmares Owned	Broodmares Boarded
Median	5	2
Mode	2	0
Standard deviation	38.4	393

Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland

Economic Contribution of the Breeding Sector

- 3.5 We turn next to the assessment of the overall economic contribution of the broodmare breeding operations in Ireland. This sector is considered separately from that of the stallion/stud farm sector in that it relates primarily to income from the production and sale of thoroughbred horses rather than income generated from stallion fees.
- 3.6 We assess the overall economic impact of the breeding sector from a number of viewpoints, as follows:
- the recent trends in equine output;
 - the level of net income/value-added in the breeding sector;
 - the level of employment and employment incomes generated;
 - the exchequer contribution of the stallion sector;
 - the indirect, induced and multiplier impacts of expenditures in the sector; and,
 - the net overall economic contribution, adjusting for the opportunity cost of labour and deadweight impacts.

Recent Trends in the Value of Equine Output

- 3.7 One perspective on the economic contribution of the thoroughbred breeding sector is to consider the recent developments in relation to the value of equine output. Our analysis in this sub-section is based on the Central Statistics Office's annual Output, Inputs and Income in Agriculture release of June 2003.

- 3.8 In Table 3.4 we describe the recent trends in the value of output¹² of horses and other forms of livestock over the period 1998-2002. According to the CSO figures, the annual value of horses produced (the vast majority of which are, according to the CSO, thoroughbreds¹³) has risen from €128.7 million in 1998 to €198.7 million in 2002. This represents the value of the sector's gross output and indicates a rise of 54.4% over this period, the fastest rate of increase across the five categories of livestock measured. It is notable, in particular, that the substantial increase in the value of annual horse output compares with a decrease in total livestock production of 6.8% over the same period.

Table 3.4: Value of Output of Equine and Other Livestock - 1998-2002 - € Million

	1998	1999	2000	2001	2002	% change - 1998- 2002
Cattle	1385	1330.7	1378	1257.9	1168.1	-15.7
Pigs	284.4	253.3	299.3	347.5	300.1	5.5
Sheep	214	198	203.4	285.8	202.2	-5.5
Horses	128.7	150.0	164.3	146.5	198.7	54.4
Poultry	154.6	149.8	139.4	152.2	150.6	-2.6
Total Livestock	2,166.7	2,081.8	2,184.4	2,189.9	2,019.7	-6.8

Source: Indecon analysis of CSO data on Output, Inputs and Income in Agriculture, 1998-2002

- 3.9 In terms of the proportion of total livestock accounted for by horse production, an analysis of the percentage breakdown of livestock output, presented in Table 3.5, indicates that the recent very strong growth in annual horse production has resulted in an increase in the proportion of total livestock production accounted for by equine output from 5.9% in 1998 to 9.8% in 2002.

¹² As defined by the CSO, agricultural output measures the value of all products produced during the year by the agricultural units (farms).

¹³ See Tansey Webster Stewart, *The Importance of Bloodstock in the Irish Economy*, June 2000, where it is noted that 98% of output related to thoroughbreds.

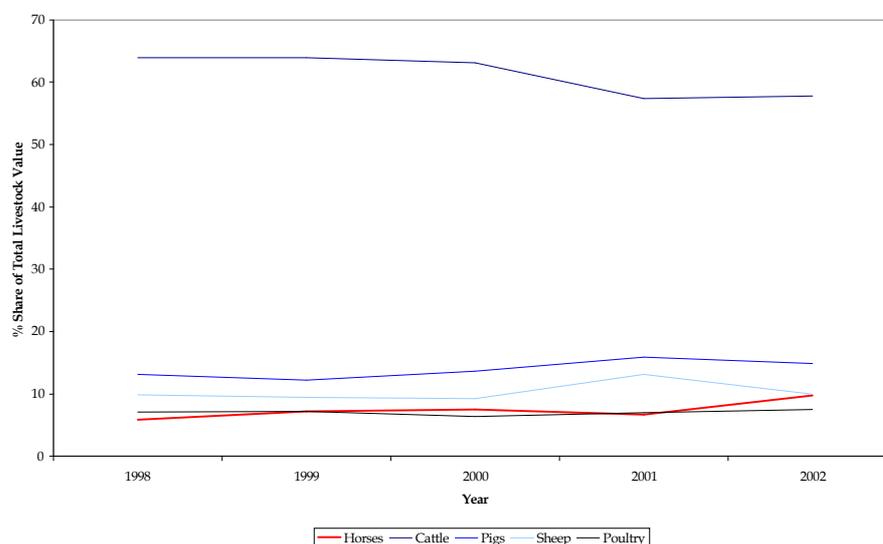
Table 3.5: Value of Output of Equine and Other Livestock - % shares by livestock - 1998-2002

	1998	1999	2000	2001	2002
Cattle	63.9	63.9	63.1	57.4	57.8
Pigs	13.1	12.2	13.7	15.9	14.9
Sheep	9.9	9.5	9.3	13.1	10.0
Horses	5.9	7.2	7.5	6.7	9.8
Poultry	7.1	7.2	6.4	7.0	7.5
Total Livestock	100	100	100	100	100

Source: Indecon analysis of CSO data on Output, Inputs and Income in Agriculture, 1998-2002

3.10 The rapidly increasing overall economic share of the breeding sector is also illustrated graphically in Figure 3.1, which shows the percentage shares of the value of total livestock production between 1998-2002.

Figure 3.1: Value of Output of Equine and Other Livestock - % Shares of Output by Category of Livestock - 1998-2002



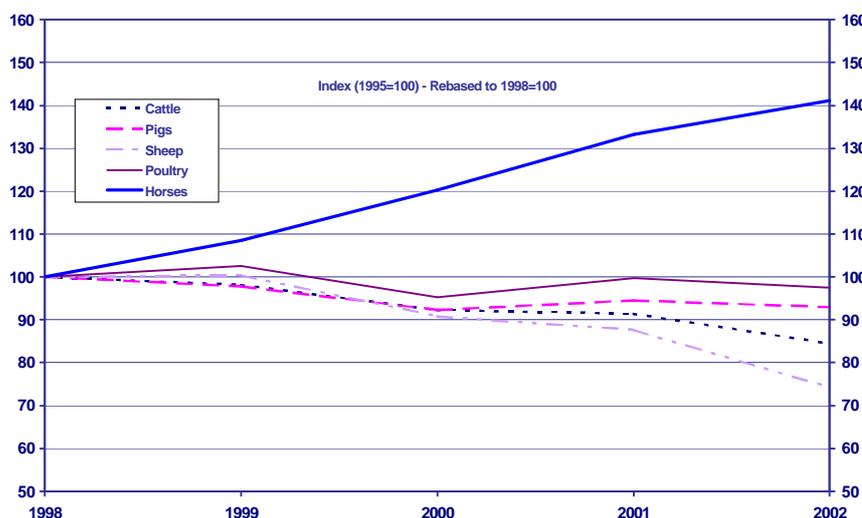
Source: Indecon analysis of CSO data on Output, Inputs and Income in Agriculture, 1998-2002

- 3.11 Given the impact of price changes on the value of output, it is important to also describe the recent developments in the volume of equine outputs. In Table 3.6 we describe the volume of output of equine and other livestock over the period 1998-2002, expressed as an index with 1995=100. The analysis shows that the volume of equine output has also increased dramatically since the mid-1990s, with the total volume of horse output increasing by 51.4% between 1995 and 2002. The rapid increase in the volume of equine production compares with a decrease of 4.3% in overall livestock production volumes over the same period.

Table 3.6: Volume of Output of Equine and Other Livestock - 1995=100						
	1998	1999	2000	2001	2002	% change - 1995-2002
Cattle	108.6	106.6	100.2	99.3	91.7	-8.3
Pigs	121	118.3	111.7	114.4	112.5	12.5
Sheep	105.3	105.7	95.6	92.3	78.1	-21.9
Horses	107.3	116.5	129.1	143.0	151.4	51.4
Poultry	106.2	108.9	101.1	105.9	103.5	3.5
Total Livestock	109.7	108.4	102.2	102.3	95.7	-4.3
Source: Indecon analysis of CSO data on Output, Inputs and Income in Agriculture, 1998-2002						

- 3.12 In relation to prices changes, that the volume of equine output increased by 41.1% between 1998 and 2002 while the value of output rose by 54.4% implies an increase in prices over this period.
- 3.13 Figure 3.2 overleaf provides a graphical illustration of the recent comparative growth in the volume of horse production compared with that of other categories of livestock.

Figure 3.2: Recent Trends in Volume of Output of Equine and Other Livestock - 1998-2002



Source: Indecon analysis of CSO data on Output, Inputs and Income in Agriculture, 1998-2002

Net income/value-added from breeding

3.14 While the above analysis of equine outputs indicates that the annual rate of horse breeding has increased substantially in recent years, there are a number of important reasons why the CSO agricultural accounts figures are likely to underestimate the overall net economic contribution of the equine sector, as follows:

- The CSO's methodology calculates the output of the equine sector as the value of foals and yearlings produced in any given year less a charge for depreciation of stallions and mares. We understand that the annual output measured is based on formal domestic market activity. However, not all of the sales activity passes through these formal markets.
- Price estimates derived from these markets are also likely to undervalue production in any one year since increasingly Irish breeders sell through foreign markets where prices fetched are typically higher, and also because increasing numbers of the most expensive yearlings are being retained for racing. There are Irish vendors at overseas markets, for example, the UK and France.

- The cost of production inputs, which must be subtracted from gross sales to obtain net value-added;
- Indirect, induced and multiplier impacts of expenditures arising from breeding activities.

Value of Thoroughbred Sales

- 3.15 In the table below we describe the recent trends in annual thoroughbred sales turnover based on figures supplied by Horse Racing Ireland. According to the figures, total annual thoroughbred sales reached €112 million in 2002. This compared with sales of €74 million in 1997 implying an increase of 52% over this period.

Table 3.7: Thoroughbred Sales Turnover, 1997-2002 - € Millions			
Category	1997	2002	% Change 1997-2002
Value of Thoroughbred Sales	74	112	+ 52.0 %
Source: Horse Racing Ireland, Strategic Plan 2003-2007. Based on the annual value of sales at public auctions in Ireland.			

- 3.16 A breakdown of thoroughbred sales between stock sold through Goff's and sales at Tattersalls is shown in Table 3.8-Table 3.10 below. According to the details on Goff's sales, total sales of yearlings in 2002 came to €44.3 million, while sales of foals and other categories reached €11.9 million and €17 million respectively, bringing total Goff's sales in 2002 to €73.3 million. On the basis of 3,098 lots sold, this implies an average price achieved during 2002 of €23,647 (Table 3.8).

Table 3.8: Breakdown of Goff's Sales, 2002			
Category	Lots Sold	Aggregate Sales (€)	Average Price (€)
Yearlings	1,006	44,314,650	44,050
Foals	886	11,919,800	13,453
Other categories	1,206	17,022,950	14,115
Total	3,098	73,257,400	23,647
Source: Goff's (2002)			

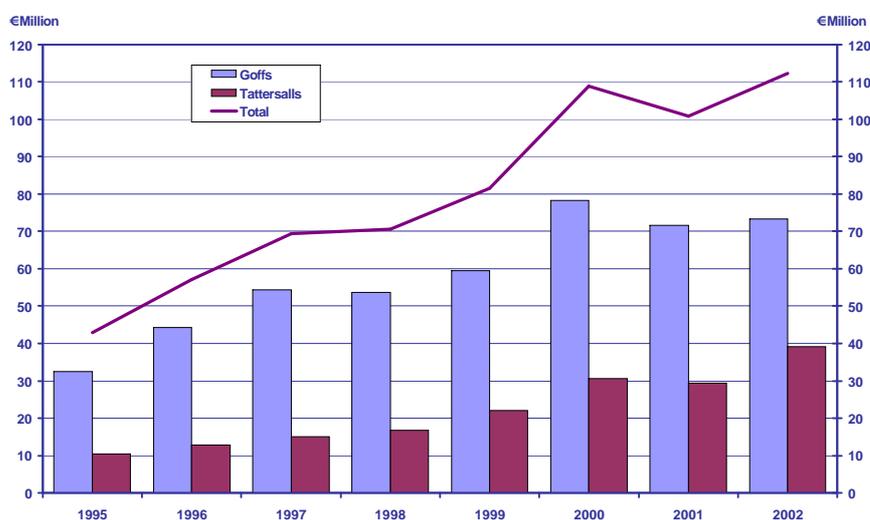
- 3.17 A description of the recent trends in Goff's thoroughbred sales over the period 1995-2002 is shown in Table 3.9 below. The figures indicate that the total value of sales of thoroughbred horses came increased from €32.5 million in 1995 to €73.3 million in 2002, implying a growth of 125.7% over this period. The average price achieved rose from €15,332 in 1995 to €23,647 in 2002.

Table 3.9: Results of Goff's Sales, 1995-2002			
Year	Lots Sold	Aggregate Sales (€)	Average Price (€)
1995	2,117	32,457,719	15,332
1996	2,129	44,250,119	20,784
1997	2,358	54,345,279	23,047
1998	2,542	53,663,023	21,111
1999	2,768	59,523,091	21,504
2000	2,867	78,291,740	27,308
2001	2,929	71,517,931	24,417
2002	3,098	73,257,400	23,647
Source: Goff's (2002)			

- 3.18 A profile of the recent trends in the lots sold, aggregate sales and average price at Tattersalls (Ireland) over the period 1995-2002 is shown in Table 3.10 below. The figures show that total sales of thoroughbred horses at Tattersalls reached €39.1 million in 2002, while the average price in 2002 was €11,820.

Table 3.10: Results of Tattersalls (Ireland) Sales, 1995-2002			
Year	Lots Sold	Aggregate Sales (€)	Average Price (€)
1995	2,027	10,479,900	5,170
1996	2,120	12,801,063	6,038
1997	2,401	15,055,207	6,270
1998	2,404	16,832,416	7,002
1999	2,728	22,076,439	8,093
2000	3,003	30,559,729	10,176
2001	3,312	29,389,780	8,874
2002	3,306	39,076,056	11,820
Source: Tattersalls Ireland (2002)			

Figure 3.3: Recent Trends in Value of Thoroughbred Sales - 1995-2002



Source: Goffs (2002) and Tattersalls (Ireland) (2002).

- 3.19 A graphical illustration of the recent substantial growth in the total value of thoroughbred sales, including sales through both Goff's and Tattersalls (Ireland), over the period 1995-2002 is shown in Figure 3.3 above.
- 3.20 In addition, there are sales of Irish horses overseas. As part of this review we have accessed information on sales in a number of locations which we believe capture most of the international sales of the sector. These are set out in Table 3.11 and indicate that sales equalled €68.7 million in 2002.

Table 3.11: Details of Sales of Irish Horses Overseas (€ Millions)

	Doncaster	Deauville Sales	Tattersalls	Total
1999	6.4	1	54.9	62.3
2000	7.2	3.3	57.9	68.4
2001	6.7	4	54.4	65.1
2002	9.3	3.5	55.9	68.7

Source: Doncaster, Deauville Sales and Tattersalls

Costs of production and other inputs in the breeding sector

- 3.21 To arrive at an estimate of the total value-added generated by the thoroughbred breeding sector in Ireland it is necessary to subtract from the total value of sales the level of expenditures on production inputs. Breeding expenditures include, *inter alia*, bedding, feed, veterinary services, farrier costs, training costs, transport and other costs including stallion fees¹⁴. Production costs vary significantly across breeders and will be affected by a range of factors, including annual cost inflation and scale of operation. Based on our survey of thoroughbred breeders (which included responses from 104 different operators across Ireland) we have examined the level of annual production costs, including annual expenditures on goods and services and wages and salaries over the period 2000-2003. On this basis we have estimated that on average over this period total costs accounted for 54% of total sales value across respondent breeders.

Total net value-added from breeding activities

- 3.22 Adjusting the total value of thoroughbred sales, described above, for the annual cost of production yields an estimate of the economic contribution of the breeding sector as measured by total value-added. Our analysis is presented in Table 3.12 and we estimate that the breeding sector contributed a net value-added in 2002 prices of €108.1 million. This assumes that total Irish and international sales at public auctions equalled €192.4 million. There is also the sales and associated income from private sales. Official data on private sales are not available but we assume, based on inputs from industry, that private sales measured in value terms are equal to 28% of public sales. This amounts to €54.2 million giving a total sales value of €234.9 million. The financial gain from such private sales is very significant and critically important to the sector. We understand, however, that these gains are not exempted from tax under the stallion income tax exemption. However, there are particular tax treatments which apply and which have not been examined as part of this study.

¹⁴ Stallion fees, which are income for the Stallion sector, are a cost to the Broodmare sector.

Table 3.12: Economic Contribution of Thoroughbred Breeding Sector - Estimate of Net Value-Added from Thoroughbred Breeding Activities in Ireland - 2002 - € Millions	
Statistics	2002
Total thoroughbred sales, incl. foals, yearlings and other categories - €	234.9
<i>Less</i>	
Estimated production costs@54% - €	126.8
Total Net Value-Added - €	108.1
Source: Indecon analysis based on EBF data, HRI and International auctions.	

Employment and Employment Incomes

- 3.23 In addition to the net value-added contribution of the breeding sector, employment and related incomes are also generated through breeding activities. Employment in the sector is comprised of:
- Direct full-time, part-time and casual employment in breeding;
 - Indirect full-time, part-time and casual employment in sectors supplying services to the breeding sector. The sector also supports the labour-intensive racing industry, which is discussed later in this section;
 - Induced employment creation arising out of expenditures of goods & services by the breeding sector.
- 3.24 There are no official figures available indicating the total level of employment in the sector. This limitation has necessitated the estimation of total employment on the basis of the Indecon and other previous research on the sector.
- 3.25 A range of statistical indicators of the numbers of full-time persons employed by the breeding sector, based on the Indecon survey of thoroughbred breeders in Ireland, is shown in Table 3.13. On average across the 104 breeders responding to our survey, it is estimated that 8.2 persons per operation are currently employed on a full-time basis in 2003 and that there has been an increase over the period 2000-2003.

Table 3.13: Indecon Survey of Thoroughbred Sector in Ireland - Details re Employment in Broodmare Operations - Statistics on Number of Full-time Persons Employed - 2000 and 2003

Year	2000	2003 estimate	Average - 2000/2003
Total full-time persons	554	620	587
Mean	7.2	8.2	7.7
Median	1	1	1
Standard deviation	40.9	44.6	42.8
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland			

- 3.26 Table 3.14 provides details on the level of part-time employment in the breeding sector in Ireland, again based on the Indecon survey. The average number of part-time employees per operation is estimated to be 2.2 persons, while the median is 1 person.

Table 3.14: Indecon Survey of Thoroughbred Sector in Ireland - Details re Employment in Broodmare Operations - Statistics on Number of Part-time Persons Employed - 2000 and 2003

Year	2000	2003 estimate	Average - 2000/2003
Total part-time persons	178	178	178
Mean	2.3	2.2	2.2
Median	1	1	1
Mode	1	1	1
Standard deviation	11.2	8.9	10.0
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland			

- 3.27 As these figures on full- and part-time employment are based on a survey sample it is necessary to account for the fact that the sample will not capture the total level of employment in the sector. Reflecting this methodological issue, we have developed estimates of the total level of employment in the sector based on the application of the ratio of full-time equivalent employees (FTEs) to the total numbers of registered broodmares at stud. The analysis is presented in Table 3.15.

- 3.28 On the basis of the Indecon survey of thoroughbred breeders, we have estimated that a total of 709 FTEs were supported across the operators responding to the survey. Given a reported total number of broodmares (owned and boarded) of 4,258 from the Indecon survey, this would imply that each broodmare at stud supports an estimated 0.167 full time equivalent jobs. Applying this ratio to the total number of registered broodmares (as per Table 3.1) yields an estimate for the total number of full-time equivalent jobs supported by the breeding sector of 2,780 in 2003.

Table 3.15: Upper Bound Estimate of Total Employment Supported by Thoroughbred Breeding Industry in Ireland - 2003	
Estimates	2003
Estimated total FTEs employed ¹ (Indecon survey)	709
Total no. of broodmares at stud (Indecon survey)	4,258
Estimated no. of FTEs per broodmare at stud in Ireland - Indecon	0.167
Registered total no. of broodmares at Stud	16,467
Estimated total employment - FTEs	2,780
Source: Indecon analysis based on data from Indecon Confidential Survey of Thoroughbred Sector in Ireland and Horse Racing Ireland, Strategic Plan 2003-2007. Notes: ¹ Based on the assumption that 1 part-time employee=0.5 full-time employee	

- 3.29 It must be stressed that estimates of total employment supported by the sector on this basis are sensitive to the assumptions applied in relation to both the full-time equivalent number of FTE per part-time employee and the ratio of FTEs to the number of broodmares. In this respect, it should be noted that the Indecon estimates of the ratio of FTEs to broodmares at stud presented in Table 3.15 above are based on reported employment figures by the largest breeders and we believe that the actual ratio of FTEs per broodmare is likely to be lower among the smaller breeders. Thus, while the above estimate is broadly in line with existing research, we believe that they may overestimate actual total employment across all breeders in the sector.
- 3.30 Given the need for a prudent approach to estimation, Indecon conducted further analysis of the FTE ratio per mare in the sector. This analysis is based on a representative profile of typical farms in the sector supplied by the ITBA. The analysis is presented in Table 3.16. Based on the level of employment and the total number of

broodmares at the 19 farms in the sample, we have calculated the FTE per mare ratio to be 0.117.

Table 3.16: FTE per Mare Ratio, based on Representative Profile of the sector - 2003	
	2003
Total Employment (FTEs) - ITBA Sample	690.5
Total Broodmares - ITBA Sample	5,911
FTE/Mare Ratio	0.117
Source: Indecon analysis based on data from the ITBA.	

- 3.31 This FTE/mare ratio can be used to estimate the level of employment supported by the sector, using the total population of broodmares in Ireland, as obtained from HRI. To improve the accuracy of the estimate of employment, we use the actual employment figures from the ITBA sample. As we are using actual employment data from the ITBA sample, we reduce the total population of broodmares figure by the number of broodmares standing at the farms comprising the ITBA sample, in order to avoid double-counting. This calculation is presented in Table 3.17. Using this methodology, we estimate employment in the industry of 1,924 on a FTE basis. This is equal to about 2,300 persons.

Table 3.17: Estimate of Total Employment Supported by Thoroughbred Breeding Industry in Ireland	
	Estimates
Registered total no. of broodmares at Stud	16,467
<i>Less:</i>	
Total no. of broodmares at Stud (ITBA Sample)	5,911
Total	10,556
<i>Multiplied by:</i>	
Estimated no. of FTEs per broodmare at stud in Ireland - Indecon (Table 3.16)	0.117
Estimated total employed (excl. ITBA Sample)	1,233
<i>Plus:</i>	
Number of FTEs employed by ITBA Sample Farms	690.5
Estimated total employment - FTEs	1,923.5
Source: Indecon analysis.	

- 3.32 In common with the position of the stallion breeding sector considered earlier, we are aware that Industry sources believe that employment in the sector is significantly higher than these estimates. We accept that employment estimates are sensitive to the methodology used but in this report we have adopted estimates to ensure that the estimated economic contribution of the sector is not overestimated.

Employment incomes from the breeding sector

- 3.33 The employment created by thoroughbred breeders will also generate substantial employment incomes. Although these incomes represent costs for the stallion sector and are therefore not included in net value-added (as noted earlier), they yield an additional contribution in the form of PAYE and PRSI tax payments to the exchequer. In addition, employment incomes input to the creation of additional indirect and induced spending elsewhere in the economy (described later).
- 3.34 A lower bound estimate of the total level of employment income generated in the breeding sector in Ireland on the basis of total wages and salaries reported through the Indecon survey of thoroughbred breeders is shown in Table 3.18 . The survey research indicates that wages and salaries are estimated to have totalled €3.1 million in 2002 and just over €4 million in 2003, and to have averaged just under €3 million on an annual basis between 2000 and 2003 across the breeders responding to our survey. The average level of total wages and salaries per breeding operation is estimated at €86,077 in 2003.

Table 3.18: Respondents to Indecon Survey of Thoroughbred Sector in Ireland - Details of Operations - Statistics on Annual Gross Wages & Salaries Paid

Year	2000	2001	2002	2003 - estimate	Average - 2000/2003
Total	2,086,705	2,592,560	3,100,074	4,045,607	2,956,237
Mean per operation	53,505	64,814	70,456	86,077	68,713
Median	25,000	25,863	20,708	40,000	27,893
Standard deviation	130,972	165,981	171,829	165,019	158,450

Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland

- 3.35 As in the case of total employment, the survey estimates shown above are likely to underestimate the total level of employment income generated in the thoroughbred breeding sector. In Table 3.19 we

present our upper-bound estimate of the total employment income generated in the breeding sector in Ireland. Based on an estimated average wage/salary per full-time equivalent employee, reported through the Indecon survey, of €20,020 and the upper-bound estimated total number of full-time equivalent jobs supported by the sector of 2,780, we estimate that the breeding sector generated total employment incomes amounting to €55.6 million based on 2003 figures.

Table 3.19: Upper Bound Estimate of Total Employment Income Generated by Thoroughbred Breeding Industry in Ireland - 2003

Estimates	2003
Estimated average wage/salary per FTE - Indecon survey	€20,020
Estimated total FTEs	2,780
Estimated total direct employment income generated	€55.6 million
Source: Indecon analysis based on data from Indecon Confidential Survey of Thoroughbred Sector in Ireland and Horse Racing Ireland, Strategic Plan 2003-2007. Notes: ¹ Based on the assumption that 1 part-time employee=0.5 full-time employee	

- 3.36 Based on our more prudent assumption regarding the level of full-time employment supported by the broodmare sector, our adjusted estimate for total employment income in the breeding sector amounts to €38.5 million in 2003 (see Table 3.20 below).

Table 3.20: Adjusted Estimate of Total Employment Income Generated by Thoroughbred Breeding Industry in Ireland - 2003

Estimates	2003
Estimated average wage/salary per FTE - Indecon survey	€20,020
Adjusted estimated total FTEs	1,923.5
Adjusted estimate of total direct employment income generated	€38.5
Source: Indecon analysis based on data from Indecon Confidential Survey of Thoroughbred Sector in Ireland and Horse Racing Ireland, Strategic Plan 2003-2007. Notes: ¹ Based on the assumption that 1 part-time employee=0.5 full-time employee	

Annual Exchequer Contributions of Breeding Sector

3.37 In addition to the direct net value-added generated from thoroughbred breeding in Ireland, significant benefits also arise in the form of tax payments to the exchequer arising from these activities. These include:

- PAYE taxation on wages & salaries;
- PRSI on wages & salaries;
- VAT & Excise taxes;
- Corporation taxes; and
- Other taxes.

3.38 In relation to PAYE contributions, we have estimated the annual exchequer contribution of the breeding sector based on applying an effective PAYE tax rate of 23.9% (the equivalent to that applied in the case of the stallion sector in Table 2.15) to our upper bound and adjusted estimates for total employment income in the breeding sector shown above. Table 3.21 below presents the details of our estimation of the total PAYE contribution of the breeding sector. Based on our upper bound estimate of total employment incomes, the total PAYE contribution amounts to approximately €13.3 million in 2003. However, a more conservative estimate would suggest a total PAYE tax contribution of approximately €9.2 million.

Table 3.21: Estimated Exchequer Tax Contribution of Thoroughbred Breeding Activities in Ireland – PAYE Taxation from Employment Incomes - € Millions		
Details	2003 - Upper Bound Estimate	2003 - Lower Bound Estimate
Estimated effective average PAYE tax rate (average annual 2000-2003) - %	23.9%	23.9%
Estimated total employment income - 2003 - €	55.6	38.5
Estimated PAYE tax contribution - 2003 - €	13.3	9.2
Source: Analysis based on Indecon's Confidential Survey of Stud Farms in Ireland		

- 3.39 A similar approach is applied to the estimation of the total PRSI contribution of the breeding sector (see Table 3.22). Based on an estimated effective PRSI tax rate of 13.3%, we prudently estimate that total annual PRSI contributions to the exchequer from the breeding sector amounted to approximately €5.1 million in 2003.

Table 3.22: Estimated Exchequer Tax Contribution of Thoroughbred Breeding Activities in Ireland - PRSI Taxation from Employment Incomes - € Millions		
Details	2003 - Upper Bound Estimate	2003 - Lower Bound Estimate
Estimated effective average PRSI tax rate (average annual 2000-2003) - %	13.3%	13.3%
Estimated total employment income - 2003 - €	55.6	38.5
Estimated PRSI tax contribution - 2003 - €	7.4	5.1
Source: Analysis based on Indecon's Confidential Survey of Stud Farms in Ireland		

- 3.40 As in the case of the stallion sector, the broodmare sector also contributes to the exchequer in the form of VAT and Excise payments. The extent of VAT payments will be affected by varying VAT rates on different aspects of activity, the VAT registered status of farms, the operation of the VAT refund scheme and the fact that VAT on some inputs (e.g. horse feed) is zero-rated. An analysis of VAT and Excise payments based on Indecon's survey of stud farms is shown in the table below. Our lower bound estimates suggest that the breeding sector contributed a total of €252,500 in VAT and Excise payments in 2003, averaging €13,289 per farm. This relates to current expenditure only.

Table 3.23: Estimated Exchequer Tax Contribution of Thoroughbred Breeding Activities in Ireland - Annual VAT/Excise Taxes Paid					
Year	2000	2001	2002	2003 - estimate	Average - 2000/2003
Total	109,300	171,100	223,400	252,500	189,075
Mean	5,753	9,005	11,170	13,289	9,804
Standard deviation	12,298	17,731	20,689	29,840	20,140
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland					

- 3.41 In Table 3.24 we present details of the corporation taxes paid by thoroughbred breeding operations in Ireland. The figures, again based on the Indecon survey, indicate an estimate for total corporation tax payments during 2002 of €522,350 followed by €314,500 in 2003 for the respondent farms. On average between 2000 and 2003 the breeding sector contributed €357,448 on an annual basis in the form of corporation taxes. However, it should be noted that this is based on a survey sample and may underestimate the total corporation tax contribution across the sector.

Table 3.24: Estimated Exchequer Tax Contribution of Thoroughbred Breeding Activities in Ireland - Annual Corporate Taxes Paid					
Year	2000	2001	2002	2003 - estimate	Average - 2000/2003
Total	228,379	364,564	522,350	314,500	357,448
Mean	14,274	19,188	26,118	17,472	19,263
Standard deviation	40,959	46,621	58,151	51,278	49,253
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland					

- 3.42 Our estimates of other tax contributions from thoroughbred breeding activities, which include annual levies for live foals produced and other taxes such as motor taxation, rates and other public charges, are shown in Table 3.25. Our survey of the sector indicates a lower bound estimate of the total for other exchequer contributions of €220,341 in 2003 and average €106,760 over the period 2000-2003 for the survey respondents.

Table 3.25: Estimated Exchequer Tax Contribution of Thoroughbred Breeding Activities in Ireland - Annual Other Taxes Paid					
Year	2000	2001	2002	2003 - estimate	Average - 2000/2003
Total	64,647	31,286	110,765	220,341	106,760
Mean	4,618	2,235	7,384	13,771	7,002
Standard deviation	9,837	5,214	18,236	29,017	15,576
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland					

- 3.43 In Table 3.26 we aggregate the figures presented in the preceding tables and present our estimate of the overall exchequer contribution. Based on our estimates for 2003, we prudently estimate that the overall exchequer contribution of the sector would be at least €15.1 million per annum.

Table 3.26: Estimated Total Exchequer Tax Contribution of Thoroughbred Breeding Sector in Ireland -2003 - € Millions		
Details of exchequer contributions	2003 - Upper Bound Estimate	2003 - Lower Bound Estimate
PAYE taxation	13.3	9.2
PRSI taxation	7.4	5.1
VAT and Excise taxes	.252	.252
Corporation taxation	.314	.314
Other	.22	.220
Total Exchequer Contribution	21.5	15.1
Source: Analysis based on Indecon's Confidential Survey of Thoroughbred Sector in Ireland		

Second-round and multiplier impacts

- 3.44 As noted at the outset, the overall economic impact of the Irish thoroughbred breeding sector can also be looked at from the perspective of the total value of expenditures by breeders on goods and services used as inputs. Such expenditures will have direct, indirect and induced impacts on the economy as a whole. Based on our survey findings, the most important areas of expenditures on an annual basis across thoroughbred breeders are stud-related expenditures, horse feed, veterinary services, training, farriers, bedding, sales related expenditure and tack and other equipment (5%).
- 3.45 In Table 3.27 we present the findings from the Indecon survey of thoroughbred breeders on the estimated total expenditures incurred on an annual basis on goods and services (including Irish produced and imported inputs) over the period 2000-2003. We estimate a lower bound for the total level of expenditure of the breeding sector of €24.7 million in 2003 and an annual average between 2000 and 2003 of €20.6 million. This total is based on a survey response of 104 thoroughbred breeding operations but, due to under-reporting, constitutes a lower bound estimate of the total level of spend by the sector on production inputs.

Table 3.27: Estimated Total Expenditures by Thoroughbred Breeding Sector on (Irish and Imported) Goods & Services - € Millions		
Year	2003 - estimate	Average - 2000/2003
Total expenditures - Irish + imported	24.7	20.6
Irish as % of total spend	82.0	84.6
Imported as % of total spend	18.0	15.4
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland		

- 3.46 Expenditure by Irish thoroughbred breeders will include expenditure on imported inputs. Based on the figures reported through our survey of breeders, it is estimated that total expenditure on imported goods and services amounted to €4.4 million in 2003 and average €2.75 million on an annual basis between 2000 and 2003.

Table 3.28: Estimated Total Expenditures by Thoroughbred Breeding Sector on Imported Goods & Services		
Year	2003 - estimate	Average - 2000/2003
Total	4,438,200	2,752,972
Mean	143,168	100,166
Median	1,000	250
Mode	0	0
Standard deviation	716,282	474,209
Source: Indecon Confidential Survey of Thoroughbred Sector in Ireland		

- 3.47 Though part of the total expenditure of Irish breeders, expenditures on imports, however, do not constitute a net benefit to the Irish economy as they are effectively a leakage from the economy through the balance of payments. To estimate the net benefit to the Irish economy it is therefore necessary to subtract these expenditures from the total indicated in Table 3.28.

Table 3.29: Estimated Total Expenditures by Thoroughbred Breeding Sector on Irish Produced Goods & Services

Year	2003 - estimate	Average - 2000/2003
Total	20,233,444	17,866,046
Mean	273,425	267,784
Median	27,500	21,875
Standard deviation	1,289,924	1,361,380

Source: Analysis based on Indecon Confidential Survey of Thoroughbred Sector in Ireland

- 3.48 The expenditure of the respondents on Irish produced goods and services totalled €20.2 million in 2003 and averaged €17.9 million on an annual basis between 2000 and 2003. The survey responses, however, point to a substantial variation at individual breeder level.
- 3.49 The total annual production expenditures of breeding operations will also include expenditures on wages and salaries. As the income from employment will result in multiplier impacts on the overall economy it is important to also include wages and salaries in the computation of the total expenditures of the breeding sector. Based on our computations, presented in Table 3.30 below, we estimate the total level of expenditure of Irish thoroughbred breeding operations at €63.2 million in 2003.

Table 3.30: Estimated Total Expenditures of Irish Thoroughbred Breeding Operations Including Wages & Salaries - 2003 - € Millions

Year	2003 - estimate
Est. total expenditures of goods & services - Irish + imported	24.7
Est. total expenditures on wages & salaries (see Table 3.20)	38.5
Est. Total Expenditures of Breeding Operations	63.2

Source: Analysis based on Indecon Confidential Survey of Thoroughbred Sector in Ireland

Multiplier impacts

- 3.50 In Table 3.31 we apply the multiplier (described earlier in this section in relation to the stallion sector) to the total expenditure of stud farms on both Irish and imported goods & services. This yields an estimate of the total contribution to the Irish economy of expenditures undertaken in the breeding sector. These include indirect and induced impacts and are estimated at approximately €90.3 million on an annual basis based on 2003 estimates of total spend by the breeding sector.

Table 3.31: Estimated Total Net Expenditure Contribution of Thoroughbred Breeding Sector to the Irish Economy - 2003 - € Millions	
Year	2003
Estimated total expenditures - € (see Table 3.30)	63.2
Multiplier	1.43
Estimated Total Net Economic Contribution of Breeding Sector - €	90.3
Source: Analysis based on Indecon Confidential Survey of Thoroughbred Sector in Ireland	

Summary of Main Findings

The Breeding sector

- 3.51 A brief summary of our estimates for each component of the economic contribution of the broodmare sector in Ireland is presented below:
- According the figures produced by the CSO, the annual value of horses produced (the vast majority of which are thoroughbreds) was €198.7 million in 2002, up 54.4% on the 1998 level. We estimate sales of €234.9 million for the sector as a whole, including public and private sales;
 - Based on this estimate of sales, we have estimated that the breeding sector contributed a net value-added in 2002 prices of €108.1 million;
 - We estimate on a prudent basis that a total of 1,923.5 full-time equivalent jobs were supported by the breeding sector in 2003. This employment also generates substantial incomes, which we prudently estimate to total €38.5 million based on 2003 figures;
 - In terms of the exchequer contribution of the breeding sector, primarily PAYE/PRSI tax payments on employment incomes, corporation tax, VAT/Excise and other taxes, we have estimated the total exchequer contribution of the breeding sector at €15.1 million in 2003;

- Based on an estimate of expenditure by Irish thoroughbred breeding operations (including expenditures on wages/salaries and goods and services) of a total of €63.2 million in 2003, and assuming a multiplier of 1.43, we estimate the total contribution to the Irish economy of expenditures undertaken in the breeding/broodmare sector at approximately €90.3 million annually.

4 Profile and Economic Contribution of the Horse Racing Industry and Betting Industry

The Horse Racing Sector

- 4.1 The presence of high quality stallions and the development of the broodmare sector in Ireland have a knock-on effect for horse racing in Ireland. Specifically, top quality thoroughbred horses are likely to have contributed to the success of the horseracing sector in Ireland. Demand for horse racing, and betting on horse races, is a function of both the quality and the quantity of horses racing.¹⁵
- 4.2 It is therefore important as part of this review to consider the economic contribution of the horse racing and betting sectors. In the following section, we examine a number of indicators including:
- The number of horses in training in Ireland;
 - The number of races and attendance;
 - Direct and indirect employment in the sectors.

Number of horses in training

- 4.3 The number of horses in training is a useful indicator of the level of activity in Ireland. Table 4.1 presents details of the average number of horses in training in Ireland, broken down into age categories, in the years 2001, 2002 and 2003. That table shows that the total number of horses in training in Ireland has increased markedly since 2001. The average number of horses in training in 2003 totalled 5,672¹⁶.

¹⁵ Smith, D. (2001) 'Breeding Incentive Programmes and Demand for California Thoroughbred Racing: Is There a Quality/Quantity Tradeoff?', *Applied Economics*, 33 (1755-62).

¹⁶ The value of horses sold is also an indicator of the size of the sector. This was considered when we examined the breeding sector.

Table 4.1: Average Number of Horses in Training - 2000-2002

Age	Average 2003	Average 2002	Average 2001
Two-Year-Olds	495	516	447
Three-Year-Olds	731	590	552
Four-Year-Olds	710	709	635
Five-Year-Olds	1,122	1,038	1,003
Six-Year-Olds	2,614	2616	2,471
Total	5,672	5,469	5,108
Source: Horse Racing Ireland.			

Number of Races

- 4.4 Annually, over 300 racing fixtures are held at Ireland's racecourses and the number of fixtures continues to grow. Table 4.2 shows that 45 fixtures have been added to the racing calendar since 1996.

Table 4.2: Racing Fixtures (ROI and NI), 1996-2003

	2003	2002	2001	2000	1999	1998	1997	1996
Fixtures	303	279	268	270	264	258	256	258
Source: Horse Racing Ireland.								

- 4.5 A number of races are held at each racing fixture, usually a mixture of flat and national hunt races. Table 4.3 recounts the number of national hunt races run annually since 1996, with the number of races increasing over the period.

Table 4.3: Number of National Hunt Races (ROI and NI), 1996-2003

	2003	2002	2001	2000	1999	1998	1997	1996
National Hunt	1,318	1,205	1,153	1,201	1,151	1,116	1,102	1,123
Source: Horse Racing Ireland.								

- 4.6 The number of flat races has also increased since 1996, as shown in Table 4.4. Between 1996 and 2003 there was an increase of 24.0% in the number of flat races. In 2003, 848 flat races were run in Ireland.

Table 4.4: Number of Flat Races (ROI and NI), 1996-2003								
	2003	2002	2001	2000	1999	1998	1997	1996
Flat Races	848	789	782	718	715	703	692	684
Source: Horse Racing Ireland.								

Racecourse Attendance

- 4.7 There are currently 27 racecourses in Ireland, including 2 in Northern Ireland.¹⁷ A key driver of the economic contribution of the racing sector is the level of attendance at these racecourses. The level of annual racing attendances is profiled in Table 4.5 below, showing that a total of 1.395 million persons attended various racecourse meetings held in Ireland¹⁸ during 2003. This represents a 27.1% increase compared with the level of attendance in 1996.

Table 4.5: Annual Racing Attendances - 1996-2003 (Millions of Persons)								
	1996	1997	1998	1999	2000	2001	2002	2003
Annual Attendances	1.098	1.165	1.219	1.309	1.354	1.296	1.287	1.396
Source: Horse Racing Ireland								

- 4.8 There is a significant tourism element to racecourse attendance and it is estimated by HRI that up to 17% of attendees at summer race meetings are accounted for by out-of-State visitors, accounting for an estimated 50,000 overseas visitors per annum. In addition, there is related tourism at other periods in the year.

¹⁷ A Map showing the location of racecourses in Ireland is provided on Page 128

¹⁸ Excluding racecourses in Northern Ireland.

Prizemoney

- 4.9 Related to these developments there has been an increase in annual prize money over the period 1996-2003. Annual flat race prize money rose from €9.9 million in 1996 to €25.1 million in 2003, an increase of 153% over this period.

Table 4.6: Prizemoney for Flat Races, 1997-2003 - € Million							
	2003	2002	2001	2000	1999	1998	1997
Prizemoney	25.1	23.5	21.7	15.2	13.07	10.7	9.9
Source: Horse Racing Ireland.							

- 4.10 Next we consider trends in annual prize money in relation to National Hunt races. National Hunt prize money totalled €24.5 million in 2003 and has increased by 175% compared with its level in 1996.

Table 4.7: Prizemoney for National Hunt Races (1997-2003) - € Million							
Category	2003	2002	2001	2000	1999	1998	1997
Prizemoney	24.5	22.0	20.5	15.5	12.9	10.2	8.9
Source: Horse Racing Ireland.							

- 4.11 Finally, there has been an increase in the level of sponsorship over the period as set out in Table 4.8.

Table 4.8: Sponsorship for Races (1997-2003) - € Million							
Category	2003	2002	2001	2000	1999	1998	1997
Sponsorship	7.1	6.6	6.1	6.5	5.8	4.9	4.2
Source: Horse Racing Ireland.							

Economic Contribution of Horse Racing Industry

- 4.12 A measure of the economic contribution of the horse racing industry is the level of on- and off-course expenditure generated. On-racecourse expenditure is comprised of the following elements:
- Revenues from admission charges;
 - Direct expenditure by attendees on betting *less* the total payout on such betting (examined later in this sub-section);
 - Direct expenditure of attendees on food, drink and other (non-betting) goods & services.
- 4.13 To assess attendance income, we have undertaken detailed analysis of the different elements of attendance income based on information from the racecourses. Based on income from general admissions, bookmakers, suites, seats, annual badges, racecard sales and SP office, we estimate that the direct annual income from admission charges at racecourses is approximately €23 million. Details of this estimate and a breakdown by track category are presented in Table 4.9.

Table 4.9: Estimated Admissions Income, by track category, 2003

Estimates	2003 (€m)
Premier Tracks	14.7
Category 1 Tracks	4.1
Category 2 Tracks	4.1
Total Admissions Income	22.9
Source: HRI.	

- 4.14 We also assess the level of expenditure by race-goers. Detailed figures indicating the level of expenditure of race-goers on non-betting goods & service at racecourses was not available to the consultancy team. However, based on existing research on the levels of expenditure at events, we have applied average spend estimates to the attendance figures described above to estimate the level of on-racecourse spend on goods & services other than admission and betting. Our computations are shown in Table 4.10.

Table 4.10: Estimated Expenditures at Race Meetings in Ireland - On-Racecourse Expenditures on Goods & Services Excluding Admission Charges and Betting

Estimates	2002
Estimated average spend per attendee (Galway, 2002) - excl. betting and admission charges	€32
Total attendance at race meetings	1,286,914
Estimated Total Spend at Race Meetings excl. betting and admission	€41.2 Million
Source: Indecon analysis based on annual racecourse attendance figures and Martin and O'Leary (2002) ¹⁹	

- 4.15 On the basis of the previous research carried out in relation to the Galway Summer Race Festival, we have estimated that spend by attendees at the festival on goods & services excluding admission charges and betting averaged €32 in 2002. Applying this average spend to the total level of attendance at race meetings based on the figures presented in Table 4.5, we indicatively estimate the total level of on-course expenditure across all race meetings in 2002 (excluding admission and betting) was €41.2 million.
- 4.16 We believe that utilising the figures for Galway may overstate the level of expenditure and in line with our overall approach in this study, we discount the expenditure estimates by 50%. We understand that some representatives of the sector may feel that this will result in an underestimate of expenditures, but we believe that this is consistent with a prudent approach to estimating the economic impact of the sector. Given attendance of 1.4 million in 2003, this would imply an expenditure of €20.6 million.
- 4.17 In addition to on-course expenditures, further expenditure takes place off-course resulting from the attraction of visitors to racecourses. This may include expenditure on:
- Accommodation;
 - Food, drink and other retail;
 - Travel;
 - Parking;

¹⁹ Martin, Sarah, and Kate O'Leary, *An Assessment of the Contribution of the 2002 Galway Summer Race Festival to Galway City and County*, University College Dublin Marketing Development Programme, December 2002.

- Entertainment
- 4.18 The total level of off-course spend across all race meetings, which would depend on the pattern of attendance (including local versus non-local attendance) and whether attendance involved overnight stays. According to Martin and O'Leary (2002)²⁰, total off-course expenditure at the Galway Summer Race Festival in 2002 was estimated at €22.8 million across a total attendance of 179,214. This suggests an average off-course spend per attendee at Galway of €127.3. It is notable that accommodation, alcohol and food constituted the largest items of off-course expenditure. The Galway festival, however, could be regarded as a special case, involving only 31% of attendees from Galway city and county while an estimated 6% of attendees were from overseas.
- 4.19 Attendances at race meetings in general are likely to involve a lower proportion of overnight stays and thus imply lower expenditures on accommodation and other overnight-related expenditures. On this basis, if one assumes an average off-course spend per attendee equal to half²¹ that estimated for Galway, i.e. €63.7, this would imply an estimated total off-course spend of €89.2 million in 2003 based on a total attendance of 1.4 million persons.
- 4.20 We have measured the economic contribution based on:
- Revenues from gross admission charges;
 - Direct expenditure of attendees on food, drink and other (non-betting) goods & services;
 - Off course expenditures.

Employment generated from Race Courses

- 4.21 Racecourses have evolved into significant business centres entailing a range of racing and non-racing activities. Non-racing activities include golf courses/driving ranges (Leopardstown, Navan, Gowran Park, Killarney and Down Royal), greyhound racing (Dundalk), concerts and exhibitions (Punchestown), horse training centres (Curragh), nightclubs/bars (Leopardstown, Fairyhouse) and conference centres (Leopardstown, Limerick and Galway).
- 4.22 The racecourses and auxiliary businesses are operated by full-time staff, supported by casual/part-time staff on race days. Also, employment directly related to race meetings includes casual, part-

²⁰ Martin, Sarah, and Kate O'Leary (2002), Op. Cit.

²¹ We are aware that the Galway Festival is unrepresentative and that explains using an adjustment factor equal to 50 % of the total. It is not possible to be definitive about these estimates but we feel that this approach leads to a reasonable estimate.

time and full time employees involved in organising and servicing race meetings. There is indirect employment generated through expenditures on goods and services generated by race events and employment sustained by off-course expenditure.

- 4.23 In order to estimate the level of employment generated by race meetings, Indecon conducted a survey of the racecourses in Ireland, North and South. Racecourses were questioned as to the number of full-time, part-time and casual staff employed. The survey findings are based on the answers of 18 completed responses, and these need to be scaled upwards to give an estimate for all 27 racecourses. The survey covers all racecourses in Ireland except for one premier racecourse, two category 1 racecourses and five category 2 racecourses.
- 4.24 The findings of this survey are presented in Table 4.11. According to survey responses, there are 866 full-time equivalents employed at the racecourses surveyed. The large number of part-time and casual staff is evident from the responses, with only 149 full-time workers employed. Also, the large standard deviation of FTEs employed suggests wide variance in the size of racecourses.

Table 4.11: Indecon Survey - Employment at Racecourses			
Statistic	Full-Time	Part-time /Casual	Total (FTEs)*
Total Persons Employed	149	1,434	866
Average	8.3	79.6	48.1
Standard Deviation	9.0	128.3	65.4
Median	4	46.5	32.8
Min	0	1	2.5
Max	30	557	284.5
Note: *This calculation is based on the assumption that one part-time/casual worker equals 0.5 FTEs.			
Source: Indecon Survey of Racecourses.			

- 4.25 Based on the results of the Indecon survey of racecourses, Table 4.12 presents details of our estimate of the total direct employment supported by race meetings. Given the large standard deviation of the number of FTEs employed by respondents, we have chosen to use the median rather than the average level of employment, as it is not distorted by very large or very small outliers. We estimate that about 1,600 persons or about 886 full-time equivalents are employed at racecourses in Ireland.

Table 4.12: Estimated Employment at Racecourses in Ireland

Estimates	
Employment at 18 surveyed Racecourses	866 FTEs
Median Employment Level	32.8 FTEs
Total number of Racecourse in Ireland	27
Estimated Total Employment at Racecourses	886 FTEs
Source: Indecon analysis based on results of the Indecon survey of Racecourses in Ireland.	

- 4.26 There is also employment of Jockeys, Trainers and Training Yard staff that is related to the horse racing industry. Table 4.13 provides an indication of the level of employment in horse training and in riding, based on details of licences issued by HRI. Total employment is estimated to be 3,375 persons. A part-time/full-time breakdown is not available. We believe it is important not to aggregate the employment levels of the horseracing sector with other sub-sectors of the industry due to the danger of double-counting.

Table 4.13: Employment in Horse Training and Jockey Sector (2003)

Licensed Stable Staff	
Full-time	1,273
Part-time	1,573
Total	2,846
Licensed Trainers	390
Licensed Jockeys	139
Grand Total	3,375
Source: Horse Racing Ireland.	

- 4.27 Race meetings support indirect employment as the racing industry is a specialist industry supported by an infrastructure of specialised auxiliary services, including media, printing, veterinary, transport, catering, equipment and sales etc. Many of these businesses are located in rural areas. Details of such employment are subject to uncertainty. Estimates supplied by HRI following a survey of the relevant bodies suggest that employment is 2,700 with a significant part-time element included in Table 4.14. These may include some indirect employment that is best considered to be related to the breeding sector. However, for convenience they are included in this

part of the report, but again our caution regarding aggregation should be noted.

Table 4.14: Racecourse Related Employment

Type	Full Time	Part Time
Catering	50	500
Security	20	200
Veterinary	120	240
Veterinary Products	125	25
Horse Feeder Company	170	100
Farries	96	70
Sales Companies	47	93
HRI	65	25
Turf Club	44	44
Equine Centre	59	7
Weatherbys	27	5
Training Academy -Race	10	6
Media	69	25
Printers	23	7
Transport/ Insurance/ Agents	50	25
Other (15%)	146	206
Total	1121	1578
Source: Horse Racing Ireland		

The Betting Sector

4.28 Betting is becoming an increasingly popular leisure activity in Ireland. This trend is reflective of a range of factors and may include the upward trend in the quality and quantity of thoroughbred horses racing in Ireland, an increase in the number of races each year and an increase in TV coverage. The horse racing industry is inextricably linked with the betting sector and we consider below the contribution of the betting sector.

Value of Betting

4.29 In their Strategic Plan 2003-2007, HRI provide a summary of the value of betting in Ireland over the period 1997 to 2002. The statistics are presented in Table 4.15 along with figures for the years 1977-81 (converted from IR£s to Euros). The figures are quoted in nominal terms and do not take account of inflation since 1977, but nonetheless indicate a significant increase on 1977 levels. Both elements of total betting expenditure, on-course and off-course betting, increased over the period 1997 to 2003. The significant driver of growth over the period was off-course betting, increasing over the period by 228%. According to HRI, 65% of off-course betting is on Irish and English horse racing, representing €1.25billion in 2003.

Table 4.15: Value of Betting in Ireland, 1977-2003

Category	1977 (€m)	1978 (€m)	1979 (€m)	1980 (€m)	1981 (€m)	1997 (€m)	2002 (€m)	2003 (€m)	% Chg 1997- 2003
Tote betting (incl. Off- course up to 1978)	2	2	1	1	1	27	38.8	44.3	64%
On-course bookmakers betting	4	6	6	9	9	101	162	183	81%
Off-course bookmakers betting	138	160	168	210	230	578	1,579	1,921	232%
Total	145	168	175	219	240	706	1,780	2,148	204%
Including:									
Tele- betting/Inter net	-	-	-	-	-	-	-	460	-
Betting Exchanges	-	-	-	-	-	-	-	80	-
Source: Horse Racing Ireland, <i>Strategic Plan 2003-2007</i> .									

- 4.30 In relation to expenditure on betting, the economic contribution of this expenditure is determined by the difference between the total amount of betting expenditure and the percentage of this expenditure that is paid out to those engaged in betting activity. In other words, the economic contribution is equal to the proportion of betting expenditure that is retained by the betting business. The overall payout ratio relative to total betting spend will vary depending on a variety of factors, including the mixture of on-course and off-course bookmakers and Tote betting.
- 4.31 Due to data limitations, it is not within the scope of this study to comprehensively estimate the payout and retention ratios across the entire betting sector in Ireland. However, we estimate based on the research undertaken on the Galway Race Festival by Martin and O'Leary (2002) that the average net betting expenditure (i.e. the average of betting expenditure retained by bookmakers and Tote) across racecourse attendees in the 2002 festival was €17.4 per attendee.²² We estimate that based on a total attendance at race meetings in 2003 of 1.4 million, total net betting expenditure retained amounted to €24.4 million). It should be noted, however, that this only includes on-course betting and additional economic contributions are generated through the off-course betting sector²³. We again reduce this by 50% to produce more conservative estimates as presented in Table 4.16.

Table 4.16: Estimated Net Betting Expenditures at Race Meetings in Ireland - Including Racecourse and Tote Betting - 2003	
Estimates	2002
Estimated average net betting expenditure retained by betting business per attendee (Galway, 2002)	€8.7
Total attendance at race meetings	1.4 million
Estimated Total Net Betting Expenditure Retained	€12.2 million
Source: Indecon analysis based on annual racecourse attendance figures and Martin and O'Leary (2002) ²⁴	

²² Based on the total number of attendees at the 2002 Galway Race Festival of 179,214.

²³ This relates to net betting. According to the available information, the average gross bet per race attendee is €24.46 at the Tote and €126.9 with on course bookmakers.

²⁴ Martin, Sarah, and Kate O'Leary, *An Assessment of the Contribution of the 2002 Galway Summer Race Festival to Galway City and County*, University College Dublin Marketing Development Programme, December 2002.

Employment in the betting sector

- 4.32 Finally, we examine employment in the betting sector. This would include on-course and off course betting. On course data is available from HRI, who both licence bookmakers and their staff and operate the Tote. It is estimated that there are approximately 750 persons employed.

Table 4.17: Employment in the On-Course Betting Sector		
Employer type	Number of Employers	Total Employed
<i>On-Course Betting</i>		
Bookmakers/Representatives	-	150
Bookmakers Assistants	-	521
Tote	-	55
		726
Source: Indecon estimates based on figures supplied by Industry Sources.		

- 4.33 On the off course side, it was suggested by industry sources that employment equals between 4,000 and 5,000. We verified the off course figure by examining the published information for one of the largest bookmakers in Ireland. According to the 2002 Annual Report for this bookmaker, there are 129 betting offices employing 856 persons. This is equal to an average of 6.6. Given the total number of betting shops of around 800 this gives an employment total of over 5,280. Given horse racing accounts for only 65 % of off-course betting, a maximum of about 3,500 of this employment is related to horse racing. Indecon estimates contained in Table 4.17 show that approximately 4,200 persons are employed in the sector, including on- and off-course betting.

Table 4.18: Employment in the Betting Sector		
Employer type	Number of Employers	Total Employed Related to Horse Racing
<i>Off-Course Betting</i>		
Betting Shops	700-800	3,500
Satellite Information System (SIS)	1	6
<i>On-Course Betting</i>		726
Estimated Total Employment in the Betting Sector	-	4,232
Source: Indecon estimates based on figures supplied by Industry Sources.		

Total Economic Contribution

- 4.34 For the horseracing and betting sectors, we have estimated incomes and expenditures where possible and employment estimates. Due to the fragmented nature of these elements of the sector, we are unable to estimate total net added value and total expenditures and apply a multiplier to estimate a wider economic contribution. Nevertheless, the data and analysis presented provides a realistic assessment of the size of the sector and in particular the level of employment.

Summary of Main Findings

The Horseracing sector

4.35 A summary of our estimates regarding the economic contribution of the horseracing industry is presented below:

- Ireland has a significant horseracing industry with 5,672 horses in training in 2003 and over 300 racing fixtures. It is estimated that a total of 1.4 million persons attended these fixtures held in Ireland during 2003, up 27.5% on 1996 levels;
- Income generated by the sector is significant: in 2003 admission income was almost €23 million with non-betting expenditure on track by race goers estimated to be almost €21 million;
- From a total race meeting attendance of 1.4 million persons, we indicatively estimate that total *off-course* spend by attendees reached €89.2 million in 2002. This on and off course expenditure would also have indirect economic effects;
- In terms of employment, it is estimated that there are almost 1,600 persons employed at racecourses in Ireland. There is also employment of Jockeys, Trainers and Training Yard staff that is related to the horse racing industry which equals 3,375 persons;
- Race meetings support a level of indirect employment. This would include employment in a range of auxiliary services such as printing, transport and catering etc. This is estimated to be almost 2,700;
- It should be noted that a significant element of this employment is part-time or casual.

The Betting Sector

A summary of our estimates regarding the economic contribution of the horseracing industry is presented below:

- Betting in Ireland shows significant growth, with betting increasing 204% between 1997 and 2003, to €2.1 billion;
- We estimate that based on a total attendance at race meetings of 1.4 million, total net betting expenditure retained amounted to €24.4 million in 2003;
- Our estimates suggest that approximately 4,200 persons are employed in the sector, including on- and off-course betting;
- One again, it should be noted that a significant element of this employment is part-time or casual.

5 Description of Irish Tax Incentives

Introduction

- 5.1 In this Section we describe the historical context and current status of tax incentives operating in the Irish thoroughbred breeding industry. Our review falls under the following headings:
- The historical context;
 - Current taxation regime; and,
 - Conclusions.

The Historical Context

- 5.2 The tax treatment of the thoroughbred breeding industry in Ireland has a long history, dating back to Part 1 Section 7 of the 1939 Finance Act. The basis for the tax treatment of stallion fee income, in particular, had its parallels in the farming sector. Up until the late 1960's, Irish farmers were assessed to Income Tax under Schedule B of the Income Tax Act. Under Schedule B, farm profits were assessed to Income tax on a notional rather than an actual basis, with the tax charge being calculated by reference to the notional value of the land occupied.
- 5.3 The 1939 Finance Act deemed nomination fees earned by a stallion owner from mare services provided on the stallion owner's own land as income arising from the occupation of that land.
- 5.4 Thus, in effect, the 1939 Finance Act, following a 1933 decision in the UK House of Lords, exempted stallion income from Irish Income Tax. This exemption also applied to the part-ownership of stallions.

- 5.5 Thirty years subsequently, the 1969 Finance Act exempted all farming profits from Irish Income Tax. In the process, income from stallion fees was explicitly exempted from income tax.²⁵ According to Section 18(2) of the Finance Act 1969:

“Except as otherwise provided by Section 81 of the Income Tax Act, 1967, or by Section 19 of this Act, the profits or gains arising:-

- (a) from farming, or
- (b) to the owner of a stallion from the sale of services of mares by the stallion or to the part-owner of a stallion from the sale of such services or of rights to such services, or
- (c) from the occupation of woodlands managed on a commercial basis and with a view to the realisation of profit,

shall not be taken into account of any purpose of the Income Tax Acts”

- 5.6 The exemption of stallion income from Income Tax was extended to companies under Section 11(6) of the 1976 Corporation Tax Act. The 1985 Finance Act extended the income tax exemption on stallion fees to stallions standing overseas, in certain circumstances.

Current Taxation Regime

- 5.7 The current regime for is based on the Taxes Consolidation Act, 1997. In relation to profits or gains from stallion fees, Section 231 of this Act states:

“The profits or gains arising-

- (a) (i) to the owner of a stallion, which is ordinarily kept on land in the State, from the sale of services of mares within the State by the stallion, or
- (b) (ii) to the part-owner of such a stallion from the sale of such services or of rights to such services, or
- (c) to the part-owner of a stallion, which is ordinarily kept on land outside the State, from the sale of services of mares by the stallion or of rights to such services, where the part-owner carries on in the State a trade which consists of or includes bloodstock breeding and it is shown to the satisfaction of the inspector, or on appeal to the satisfaction of the Appeal Commissioners, that the part-ownership of the stallion was acquired and is held primarily for the purposes of the service by

²⁵ According to the Commission on Taxation (1984: 76), the exemption of stallion fee income was introduced in 1969 following a recommendation made to the Minister for Agriculture by the Survey Team on the Horse Breeding Industry, established in 1965.

the stallion of mares owned or partly-owned by the part-owner of the stallion in the course of that trade,

shall not be taken into account for any purpose of the Tax Acts.”

- 5.8 A summary of the current tax regime and valuation rules applying to the Irish thoroughbred breeding sector is presented in Table 5.1 below. This confirms the position in relation to the income tax treatment of stallion income and the reduced rates of VAT applying to the industry.

Direct Taxation

- 5.9 Stallion Breeding is the only tax-exempt sector of the thoroughbred breeding industry. Income from other elements is not exempt from tax.

Table 5.1: Summary of Tax Treatment and Valuation Rules Governing the Thoroughbred Breeding Industry in Ireland	
Sub-sector	Current tax treatment and Valuation Rules
Stallions	Income not taxable.
Broodmares	Restate to lower of cost and market value. Any sales liable to tax.
Racehorses	Not taxable. Transfers from training to stud are at original cost – no untaxed gains/losses arise in case of racehorses.
Youngstock	Restate to lower of cost and market value. Transfers into training have to be effected at cost – no tax liabilities arise – contrast UK. Any profits on sales of youngstock – fully taxable.
Source: Indecon review of Finance legislation and Department of Finance notices	

- 5.10 Table 5.1 describes the rules governing the approach to valuation and depreciation of broodmares, racehorses and youngstock. As will be described in Section 6, taxation, valuation and depreciation rules may differ noticeably across jurisdictions.

Indirect Taxation

- 5.11 Table 5.2 details the VAT rates applying to various items. Of course, most of the farms are flat rate farmers.

Table 5.2: VAT Rates applying to the Thoroughbred Breeding Industry (as at Nov. 2003)

Item	VAT Rate
Supply of Racehorse	4.3%
Racehorse Feed & Feed Additives	0.0%
Horseshoes	21.0%
Equine Dentistry	12.5%
Horse Shoeing	21.0%
Vetinary Services	21.0%
Source: The Revenue Commissioners.	

Finance Bill 2003

- 5.12 A change in the tax legislation affecting the stallion sector was introduced in the Finance Bill, 2003. In particular, in this Budget speech, the Minister noted that he would keep all tax incentives and expenditures under review. Furthermore, he noted that improving the availability of information is essential if the costs and benefits of different tax incentives are to be evaluated.
- 5.13 In particular, Section 35 of the Finance Act 2003 amends sections 231, 232 and 233 of the Taxes Consolidation Act 1997, which are concerned with exemptions from tax in respect of the profits or gains arising from stallion fees, occupation of certain woodlands and stud greyhound service fees, respectively. A requirement is being introduced that the profits or gains arising from the above activities must be included in the annual return of income even though the income or gains are exempt from tax. This new requirement will apply in respect of chargeable periods commencing on or after 1 January 2004.

Summary of Main Findings

- 5.14 In this section we described the historical context and the current status of the tax treatment of the thoroughbred breeding industry in Ireland. The specific tax legislation concerning the tax exempt status of stallion fee income dates back to the Finance Act, 1969, which exempted all farming profits and income/profits from stallion fees from Irish Income Tax. The exemption of stallion income from Income Tax was extended to companies under Section 11(6) of the 1976 Corporation Tax Act.
- 5.15 Taxation, valuation and depreciation rules may differ noticeably across jurisdictions.

- 5.16 Under the Finance Act, 2003, a requirement is being introduced that the profits or gains arising from the above activities must be included in the annual return of income even though the income or gains are exempt from tax. This new requirement will apply in respect of chargeable periods commencing on or after 1 January 2004.

6 Review of Incentives in Other Jurisdictions

Introduction

6.1 It is useful to consider the tax and other forms of incentives offered in other jurisdictions, which act as competition for Ireland in attracting and retaining top quality stallions. As noted by the Commission on Taxation in its report on the role of direct tax incentives: "The tax regime applying here must take account of that offered in other countries"²⁶. A review of the tax and other forms of incentives offered and tax accounting conventions permitted by the following jurisdictions is presented in this Section:

- UK;
- Australia;
- New Zealand;
- France; and
- USA (New York, California, Florida, Texas and Kentucky).

6.2 It should be noted that, due to the complexity of taxation rules, the following discussion provides only an overview.

United Kingdom

6.3 Since the completion of the Racing Review Committee's review of horse racing in Britain, which reported that there were no owners' or breeders' premium schemes in operation in the UK, a new owner's premium scheme has been recently introduced in Britain. From 1st January 2004, the British Horseracing Board will for the first time offer Owners' Premiums. Under the scheme, 25% owners' premiums will be available in most race types to qualified British-bred two-year-old, three-year-old and four-year-old horses on the Flat and to all ages for National Hunt racing. In addition, 50% Premiums will be paid to qualified British-bred fillies and mares for National Hunt racing.

²⁶ Commission on Taxation, *Second Report* (1984).

6.4 According to the terms of the scheme, as set out by the British Horseracing Board²⁷, in order to be eligible, a horse must meet the following criteria:

- Be sired by a British-based stallion, that is, the sire was based in Great Britain at the time of covering.
- Be out of a mare ordinarily resident in Great Britain.
- Be foaled in Great Britain and not left Great Britain before 1st October in its foal year except that it may have accompanied its dam to a stallion outside Great Britain provided that it returned to GB with its dam by 1st October or, if the dam died overseas, returned alone to Great Britain by such date. Alternatively, if foaled outside Great Britain, must have returned to Great Britain with its dam by October 1st of its year of birth or, if the dam died overseas, returned alone to Great Britain by the same date.
- Been resident in Great Britain between 1st October of its foal year and 1st June of its yearling year, except where a horse is sold under the hammer as a foal at a sale in Great Britain at Tattersalls Ltd, Doncaster Bloodstock Sales Ltd or Brightwells Ltd from 2003 onwards and exported, in which case the horse needs to be resident in Great Britain between 1st October of its foal year and the date of sale.
- Was born on or after 1st January 2002 in order to qualify for Owners' Premiums for Flat races. Alternatively, it was born on or after 1st January 1999 and unraced on the Flat or National Hunt as at 1st May 2003 in order to qualify for Owners' Premiums for National Hunt races.
- Have been registered for the Owners Premiums for British Bred Horses Scheme with the British Horseracing Board by 31st January 2004.

6.5 There has been a Breeders' Prizes Scheme, funded by the Horserace Betting Levy Board (HBLB), in operation since 1993. The key details of the 2003 Breeders' Prize Scheme as follows²⁸:

- In order to qualify, horses must be sired by a stallion resident in Britain out of a mare ordinarily resident in Britain and either foaled in Britain or, if accompanying its dam to visit a stallion abroad, it must return with its dam and stay in Britain between 1 October as a foal and 1 July as a yearling, other than in exceptional circumstances.

²⁷ Source: The British Horseracing Board (www.britishhorseracing.com)

²⁸ Racing Review Committee (2003) *The Racing Review – Part 1: The Racing Product*.

- The scheme provides prizes for all Flat races from Class A to D. The National Hunt scheme incorporates all Steeplechases from Class A to H, all National Hunt Novice and Maiden Hurdle races in Classes A to F and all NH Flat races.
 - Payments are made to the breeder of only the winner of a Jump race (25% of the minimum value) or a Flat race (10% of the minimum value).
- 6.6 According to the HBLB, in 2002, 1,464 individual prizes were awarded under the HBLB Breeders' Prize Scheme which operates in England, Scotland and Wales. The scheme distributed £1.58 million (€2.27 million) in 2001, £1.83 million (€2.63 million) in 2002, and has a target of £2.4 million (€3.44 million) in 2003.
- 6.7 A summary of the tax treatment of thoroughbred breeding under the British taxation system, in relation to permitted accounting conventions, is presented in Table 6.1. As in some other countries, the UK system includes alternative valuation methods.

Table 6.1: Summary of Tax Treatment of Thoroughbred Breeding in UK	
Stallions	Depreciated in equal instalments from date of start at stud to age 10.
Broodmares	Restate to lower of cost and net realisable value.
Racehorses	Generally not taxable.
Youngstock	Restate to lower of cost and net realisable value.
Source: Tax Sources.	

Australia

- 6.8 Due to the fact that the thoroughbred breeding industry is organised regionally according to the 6 states of Australia (Western Australia, Northern Territory, South Australia, Queensland, New South Wales and Victoria), summarising the level of incentives offered to stallion owners and breeders in Australia is complicated. However, each state has its own incentive scheme, which are summarised briefly below.
- In Victoria and Tasmania, the 'Super VOBIS' scheme distributed in excess of \$6.8 million in 2002;
 - Queensland's QTIS scheme distributes \$4.5 million annually in added bonuses to owners, trainers and breeders;

- In South Australia, the SABIS scheme distributes funds of \$1.21 million;
- Western Australia has the Westspeed Incentive Scheme which provided in excess of \$250,000 in 2002;
- New South Wales has recently introduced BOBS (Breeder and Owner Bonus Scheme) which is expected to distribute approximately \$2.5 million in 2003.

6.9 Table 6.2 presents a summary of the permitted accounting and depreciation conventions for the purposes of taxation in Australia. The fact that alternative valuation methods are used (lower of cost or market value) is common with some other countries.

Table 6.2: Summary of Tax Treatment of Thoroughbred Breeding in Australia	
Stallions	Write off at 25% p.a.
Broodmares	Write off evenly until year mare is 12.
Racehorses	If in business of racing only, can depreciate at 10% p.a.
Youngstock	Held at cost. For natural increase, cost must be at least service fee paid. For natural increase where no service fee paid, notional value of \$20 allowed.
Note: Alternative valuation methods are available (e.g. lower of cost or market). Source: Tax Sources.	

New Zealand

6.10 New Zealand offers a programme of benefits for those breeders who organise their thoroughbred horse breeding activities as a business. Incentives include:²⁹

- Prize money earned in New Zealand and overseas is exempt from income tax;
- All expenses for care and maintenance of a broodmare are deductible, including paid service fees;

²⁹ Aubrey, J (2001) 'New Zealand Bloodstock Taxation in a Nutshell', *How Breeders Can Succeed in New Zealand - A Breeders' Guide*, available from www.nzthoroughbred.co.nz.

- Tax write-downs for stallions allow 20% per annum for stallions that have been to stud in New Zealand, 25% per annum of cost price or a diminishing value of 37.5% for new stallion purchases;
- Broodmares can be written down for tax to age 11;
- As racing is considered part of the breeding business, the proceeds of any horse sold by the business are taxable. Breeders must make a special application to race as a gelding as part of the business; and
- The portion of costs allocated to the care and maintenance of a racehorse may be claimed as a deductible expense.

France

6.11 France is another major location in the global thoroughbred breeding industry that offers lucrative owner and breeder premium schemes. The benefits of owning/breeding a thoroughbred in France include:

- Owners and breeders receive a free pass entitling them to free entry at any French racetrack on any day;
- Racehorse owners are also refunded transport costs incurred when their horse races; and
- The most significant benefit relates to the level of prizemoney available to both owners and breeders. French racing remains one of the highest prizemoney environments in the world. In addition to the fact that as many as the top five finishers receive prizemoney, France offers generous owners' and breeders' premium schemes. Details of the schemes are presented below:³⁰

Owners Premiums

- 75% for two year olds;
- 63% for three year olds; and
- 48% for four year olds and up.
- Also, listed and Group III races pay an additional 10%.

Breeders Premiums:

- For open races, 14% of both the allocated prize money and the owners' premia is payable.
- In the case of closed races (which are restricted to French-breds only), a 19% premium is payable to breeders on the allocated prize money.

6.12 There are also similarly attractive schemes for breeders operating in Italy. These provide bonuses to Italian breeders of successful horses in certain races in Italy.

6.13 Table 6.3 presents a summary of the tax treatment of thoroughbred breeding, in relation to permitted accounting conventions for taxation and depreciation purposes.

³⁰ Source: <http://frenchbloodstock.com>.

Table 6.3: Summary of Tax Treatment of Thoroughbred Breeding in France	
Stallions	Write off on a straight-line basis on a period of 5 years starting from first year of reproduction.
Broodmares	Write off on a straight-line basis on a period of 7 years starting from first year of reproduction.
Racehorses	Write off on a straight-line basis on a period of 4 years for gallop horses and of 5 years for trot horses.
Youngstock	Write off starts from July 1st of the year following that of the horse's birth.
Note: The system outlined above applies to breeders subject to the "regime reel" (taxation at real profits/costs) of taxation of their agricultural activity. The rules differ slightly for horse owners who are not breeders. Source: Tax Sources.	

- 6.14 In regard to Value-Added Tax, French breeders are liable to VAT if their yearly agricultural gross income is above €46,000 (at the special agricultural VAT regime rate of 5.5%, including racing gains). The racing gains of French owners who are not breeders but run their horses on a professional basis are liable to VAT if their yearly turnover is above €27,000 or if they opt to be liable (at a rate of 5.5% VAT, under the normal VAT regime).
- 6.15 Since January 1, 2002, all horse owners established in a EC member state and running horses on a professional basis in France have to register for VAT in France. Their racing gains are subject to the normal VAT regime at the rate of 5.5%, regardless of whether they are breeders or not.

U.S.A.

- 6.16 As incentives offered to breeders vary across state, the tax and other incentives offered by each state will be examined separately. However, it is possible to summarise the tax regime, including the permitted accounting conventions, as it is set at the federal level. A summary of the permitted accounting conventions in the USA regarding the valuation and depreciation of assets is presented in Table 6.4.

Table 6.4: Summary of Tax Treatment of Thoroughbred Breeding in the USA	
Stallions	Depreciated over 3 years if the animal is more than 12 years old. Depreciated over 7 years if the animal is 12 years old or younger.
Broodmares	Depreciated over 3 years if the animal is more than 12 years old. Depreciated over 7 years if the animal is 12 years old or younger.
Racehorses	Depreciated over 3 years if the animal is more than 2 years old. Depreciated over 7 years if the animal is 2 years old or younger.
Youngstock	Generally, weanlings are not depreciated, as they are not considered placed in service. If they have been placed in service, they are depreciated according to the tables on the left.
Notes: Generally, the US depreciation rules allow owner to take one half-year of depreciation in the first year an asset is placed in service, though there are exceptions. Also, horses held for resale may not be depreciated, but rather all costs are capitalised and deducted against the ultimate sales price.	
Source: Tax Sources.	

State of New York

- 6.17 In the state of New York, incentives for thoroughbred horse breeders include an award programme for New York-bred horses and certain exemptions for the sale of thoroughbred horses. Details of these incentives are presented below.

- 6.18 The New York State Thoroughbred Breeding and Development Fund (TBDF) pays awards to breeders, stallion interests and owners of NY-breds that come in the first 4 places of NY races.
- Breeders³¹ awards of 20% of the amount won in all races run in New York State are paid if the horse is sired by a registered NY state stallion, with a \$10,000 cap. If the horse is sired by a non-NY stallion or non-registered stallion the award is reduced to 10% with a \$10,000 cap.³² In 2002, the amount paid to breeders of Registered New York-breds totalled \$6,496,058.
 - Stallion awards of 7% with a cap of \$10,000 are paid to stallion interests on all races run in New York State (1st, 2nd, 3rd and 4th places). In 2002, the New York State Thoroughbred Breeding and Development Fund distributed \$1,919,812 of stallion awards.
 - Owner Awards for registered New York-breds sired by Registered New York-based sires is 20% (10% for registered New York-breds sired by non-New York-based sires) of prize money for horses finishing in the top 4 places in open company races with a claiming price of \$30,000 and upward with a cap of \$20,000 per horse, per race. In 2002 the New York State Thoroughbred Breeding and Development Fund paid \$1,311,678 to owners of registered New York-breds.
 - There are also races that are exclusively for registered New York-breds. Annually, there are 41 stake races with total purses exceeding \$3.5 Million dollars. In addition, there are over 800 overnight races run each year exclusively for Registered New York-breds.
- 6.19 A racehorse purchase is exempt from sales and use tax in New York, if:³³
- The horse is registered with the Jockey Club, the United States Trotting Association, or the National Steeplechase and Hunt Association. (A horse purchased during the first twenty-four months of its life may qualify if it is eligible to be registered.)
 - The horse is purchased with the intent that it will be entered in an event on which pari-mutuel wagering is authorized by law.

³¹ A breeder is the to the owner(s) of the mare at the time the mare foals in the State of New York.

³² Rates quoted are effective with the foal crop of 1994 (2 year olds of 1996). Awards for all other foal crops (1983 and earlier) remain the same.

³³ New York State Department of Taxation and Finance (1995) *Sales Tax Exemption for Purchases of Racehorses* TSB-M-95 (6) S.

State of California

6.20 The lucrative combination of a state-bred breeder programme and a state sales and use tax exemption form the basis of the incentives offered by the state of California. Further details are presented below.

- The breeders and owners of registered California-bred Thoroughbreds and the owners of California-based stallions qualify for awards under the program. There are three types of awards:³⁴

Breeders Awards - a monetary award paid to the breeder of a registered California-bred thoroughbred finishing in the top three of any race run in California and any graded stakes races in the United States. Breeders also receive 75% of the remainder of the total incentive award monies after owner awards are paid. Breeder awards are always paid exclusive of nomination, entry and starting fees.

Owners Awards - a monetary award paid to the owner of a registered California-bred Thoroughbred horse running in qualifying races in California. Owners can receive at least a 20 percent bonus on the finisher's share for finishing in the top 5 of qualifying races. Owner awards are always paid exclusive of nomination, entry and starting fees.

Stallion Awards - monetary awards paid annually to the owners of registered California stallions (California conceived or California-bred) which have won a qualifying race or have finished in the top 3 of a stakes race in the state or any graded stakes race in the United States during the year. The awards are aimed at stimulating the acquisition and retention in California of internationally prominent stallions.

- Under Regulation 1535, California partially exempts from sales and use tax "the sale of, and the storage, use, or other consumption in this state, of racehorse breeding stock purchased for use by a qualified person".³⁵

Under the regulation, a 'qualified person' is defined as a person who purchases racehorse breeding stock solely with the intent and purpose of breeding, where as 'racehorse breeding stock' is defined as racehorses capable of and purchased solely for the purpose of breeding.

³⁴ California Thoroughbred Breeders Association (2003) 'California's Incentive Programs'.

³⁵ Regulation 1535 - Racehorse Breeding Stock.

The partial exemption applies to only the state portion of the sales and use tax rate, currently applied at the rate of 5.00%. The exemption does not apply to local, city, county, or district taxes.³⁶

California State estimates the revenue lost from the sales and use tax exemption for racehorse breeding stock tax to total \$1.6 million for 2003.³⁷

State of Florida

6.21 In Florida, a state breeder incentive programme offers significant incentives for Florida-bred horses to remain in Florida. Incentives are focused on increased prize money awards, rather than tax incentives. Details of the programme are set out below:³⁸

- The \$8 million fund is administered by the Florida Thoroughbred Breeders' and Owners' Association. The breeders' incentive programme comprises breeder and stallion owner awards.
- The passage of the Senate Bills number 770 and number 286 has provided significant tax relief to the tracks while also increasing the percentage of the combined on-track and intertrack pari-mutuel handle and a percentage from the outgoing interstate simulcasts allocated to the breeders' incentive program from 0.75% to 0.995%.
- The owner of a thoroughbred stallion registered with the FTBOA is paid an award of 20% of the gross purse of a stakes race won by a registered Florida-bred at a licensed thoroughbred pari-mutuel track located in the State of Florida. Each single stallion owner award may not exceed \$15,000.
- The breeder of a Florida-bred winner registered with the FTBOA is paid an award of 15% of the gross purse from a licensed Thoroughbred pari-mutuel track located in the State of Florida. Again, each single breeder award may not exceed \$15,000.

³⁶ California State Board of Equalization, 'Partial Sales and Use Tax Exemption for Racehorse Breeding Stock.'

³⁷ California State Board of Equalization, (2003) *Sales and Use Taxes: Exemptions and Exclusions*, May, Publication No. 61.

³⁸ Source: Florida Thoroughbred Breeders' and Owners' Association, www.ftboa.com.

- Also, the FTBOA may pay the breeder of a registered Florida-bred winner a bonus award. The breeder bonus awards are allocated on a pro rata share of the funds available (the balance of the award account), based on the awards the breeder has received through the preceding 12 months.
- In addition to breeders' and stallion owners' awards, Florida-breds registered with the FTBOA can earn Florida Owners' Award premiums in addition to the net purse to the winner for their owners. Florida Owners' Awards are paid out by the individual Florida tracks to the owner of a registered Florida-bred winner of certain races, with up to \$40,000 added based on a percentage of the gross purse. Participating Florida racetracks annually distribute over \$5 million in Florida Owners' Awards. The award is financed through a portion of the takeout on the pari-mutuel handle.

State of Texas

- 6.22 In Texas, the Accredited Texas Bred (ATB) Programme was legislated by the State of Texas in the Texas Racing Act 1986 to encourage breeding of horses in the state.
- Administered by the Texas Thoroughbred Association, the ATB Programme is an incentive-based plan that pays owner, breeder and stallion owner awards to those who participate in the breeding and racing of Thoroughbred horses in Texas.
 - Any Accredited Texas-Bred horse finishing first, second or third in any race in the state earns extra money from the programme.
 - The extra money comes directly from wagering at the racetracks and is not funded from nomination fees.

State of Kentucky

- 6.23 Kentucky has a breeder incentive scheme at present, which was created in 1978 by KRS 230.400.³⁹ The Kentucky Thoroughbred Development Fund provides purse supplements to the owners of Kentucky-sired, Kentucky-foaled runners. Only registered Kentucky-sired Kentucky-foaled horses are eligible to share in Fund purse supplements. Only the first four finishers are eligible for the awards. The allocation is on a staggered scale of 65% to the winner, 20% to second, 10% to third and 5% to fourth.

³⁹ Source: Kentucky Thoroughbred Association.

- 6.24 Furthermore, fuelled by concerns that Kentucky's significant thoroughbred breeding industry is under threat from competition from other states that exempt stud fees from sales tax (such as California, Florida and New York), a Kentucky state senator, Senator Damon Thayer, has pre-filed two bills⁴⁰ to reduce taxes paid by Kentucky horse owners.
- 6.25 At present, owners of mares bred to Kentucky stallions must pay a 6% sales tax on stud fees. The bills propose eliminating this 6% sales tax on stud fees to match other breeding states, while also eliminating the sales tax on feed, fencing and other equipment used in the daily operation of horse farms. This would result in the estimated loss of \$20 million a year in reduced tax revenues from the sector.

⁴⁰ Bill numbers: BR210 and BR211.

Summary of Main Findings

- 6.26 In this Section, we have reviewed the tax and other incentives offered to the thoroughbred breeding industry in various jurisdictions that represent competition for the Irish industry, both currently and in the future. The jurisdictions examined include:
- UK;
 - Australia;
 - New Zealand;
 - France; and
 - USA (New York, California, Florida, Texas and Kentucky).
- 6.27 While the nature of the incentives offered vary from jurisdiction to jurisdiction (including between U.S. states), the results of our analysis show that competition on the basis of incentives is strong. Incentives offered tend to focus on the reduced rate application or non-application of income tax and sales tax, as well as breeder incentive programmes that offer additional prize money to domestic-bred race winners.
- 6.28 The tax treatment of stallions, broodmares and youngstock with regard to permitted accounting conventions, such as tax write-downs and depreciation of assets, also varies considerably across jurisdictions.
- 6.29 There are some jurisdictions that offer competitive tax and other monetary incentives to thoroughbred breeders, and the U.S. state of Kentucky is debating the proposed introduction of a sales tax exemption in addition to the breeder incentive programme, which would strengthen the Kentucky thoroughbred breeding industry, which is already a leading location. Furthermore, the introduction of an owners' premium scheme in the UK shows the heightening competition between locations.
- 6.30 The findings of this review show that competition between jurisdictions on the basis of incentives is strong.

7 Evaluation of Economic Costs/Benefits of the Irish Stallion Tax Incentive

Introduction

- 7.1 In previous chapters we examined the economic contribution of the sector and discussed the tax treatment of the Stallion business and the position in other countries. Our review is confined to the exemption on stallion income and not any other part of the stallion sector or other parts of the industry. In this chapter we consider the costs and benefits of the current Irish tax position. First, we examine some of the issues pertaining to the economic costs and benefits of the application of sector-based tax incentives or subsidies in general.

Issues in Examining Tax Incentives

- 7.2 In evaluating the economic costs and benefits of the provision of sectoral tax incentives, there are a number of important issues that require consideration, as follows:
- What are the economic distortions or cause of market failure which the incentives are designed to overcome?
 - Are the incentives effective in overcoming these distortions?
 - Could the cause of market failure be tackled directly?
 - Are the incentives in themselves distorting?
 - What are the exchequer and economy-wide implications of the incentives?
- 7.3 There is a view that a government subsidy via tax incentives or other means may be justified for the sector providing that the cost of the subsidy is “repaid” by the direct and indirect tax payments and other related contributions made by sector and its suppliers. However, it is important to clarify that the concept that subsidies are justified providing they equate to or are less than the direct and indirect economic impact is not grounded in economic analysis.

7.4 Economic analysis suggests that the appropriate approach to deciding on the merits of tax incentives or other subsidies is not based on the adding up of all direct and indirect taxes or even direct taxes but should rather be determined by an evaluation of whether economic welfare would be increased by not providing any subsidies. In other words, a key requirement is to evaluate the whether and to what extent economic distortions or externalities exist. For example, it has been pointed out that:

“Distortion refers to factors that cause a divergence between marginal social costs (or benefits and market prices). Externalities refer to the effects of the investment on costs and benefits that do not directly accrue or are not directly allocated in the market pricing mechanism to the investment. Put simply, externalities are external effects that can also be termed secondary effects or spill over effects..... It is therefore necessary to adjust market prices to take account of the external effects of the investment, but only where market prices fail to take account of these external effects.”⁴¹

Evaluation of Economic Benefits of Tax Incentives/Subsidies

7.5 A number of factors require consideration within the context of evaluating the overall economic benefits to the Irish economy of the provision of tax incentives or subsidies to particular economic sectors, including:

- Quantification of expenditure of sector on Irish good & services;
- Quantification of expenditure of sector on imported goods & services;
- Quantification of expenditure on labour costs;
- Quantification of expenditure on non-labour costs;
- Quantification of exchequer contribution of sector’s activities, including PAYE, PRSI, VAT, Corporation tax and other tax payments;
- Identification and quantification of multiplier effects;
- Identification and estimation of economic deadweight and displacement impacts (discussed later in this section).

⁴¹ See Gray, A.W. (1995), *EU Structural Funds and Other Public Sector Investments - A Guide to Evaluation Methods*, Gill and MacMillan.

- 7.6 The key issue in the estimation of the total benefits accruing from the provision of a tax incentive or subsidy to a particular sector is the need to quantify the net marginal benefit to the Irish economy. Direct benefits from a given economic activity ordinarily include direct expenditure on Irish produced goods and services used in the sector's activities and expenditure on labour and non-labour costs. However, as imported goods & services do not constitute a net contribution to Irish GNP, such expenditure must be subtracted from the overall expenditure figures.
- 7.7 Furthermore, given the need to estimate the net additional contribution of the tax incentive - i.e. the net economic impact over and above what would have taken place in the absence of the incentive - it is also necessary to subtract any deadweight and displacement impacts arising out of any additional activity that occurs. We discuss these aspects further later in this section.

Evaluation of Economic Costs of Tax Incentives/Subsidies

Economic Distortions and Externalities

- 7.8 There may be distortions or market failures in the Irish thoroughbred sector, which may result from a range of factors. However, it is necessary in framing policy to consider whether any initiatives directly address such distortions. In particular, it should be highlighted that where market failures do not exist, then the pricing mechanism would provide the signals necessary to lead to an appropriate outcome in terms of economic welfare. The main potential causes of market failure, which we examine further below, include the following:
- Distortions and externalities;
 - Monopoly power;
 - Unemployment;
 - Taxation.

Distortions and Externalities

- 7.9 Distortions and externalities refer to factors that cause a divergence between marginal social costs or benefits and market prices. Externalities, which may be positive or negative, refer to the effect of an activity on costs and benefits that do not accrue directly or are not directly allocated through prices. Put simply, externalities are external effects that can also be termed secondary effects or spillover effects. Such effects may justify government intervention. An example of a potential positive externality is the indirect tourism benefits deriving from activities in the thoroughbred breeding industry.

Monopoly power

- 7.10 Apart from the issue of externalities, policy intervention in the form of tax incentives or subsidies may also be justified because of the presence of market imperfections or monopoly power in a sector. For example, the dominance of a few operators in a particular sector may result in market prices that cause a divergence from the most appropriate level of economic activity in that sector. Market power in other countries may also be relevant.

Unemployment

- 7.11 In some cases policy intervention may be justified to address the economic and social difficulties caused by unemployment.
- 7.12 In evaluating the overall economic impact of a sector, an important issue concerns the value placed on employment. In deciding on such values, two important issues must be considered. The first is the requirement to consider what level of employment would have taken place in the economy as a whole in the absence of that sector (the issue of 'deadweight' is discussed below). The second is the requirement to take account of the fact that there is not a one-to-one relationship between employment in a particular sector and the level of unemployment in that sector. The appropriate value to place on employment is determined by what economists term the shadow price or opportunity cost of labour⁴². The opportunity cost of labour is ordinarily expressed in relation to current market values and is *inter alia* influenced by prevailing economic conditions; in other words, if labour resources in an economy are fully or close to fully employed the opportunity cost of labour is likely to be high. We believe that in current Irish circumstances the opportunity cost of labour is high.

⁴² The shadow price or opportunity cost of labour is the difference between the current value of an employment and the value in its next best alternative use. For a discussion on this technical concept, see Gray, A. W. (1995), Op. Cit.

Taxation

- 7.13 Another important potential cause of market failure concerns the impact of taxation. The issue of taxation is one that may justify some intervention in a given economic sector, although this is by no means certain. In particular, a key aspect is whether a given sector is viewed in isolation or whether wider economic issues are taken into account. This is a complex issue and the net tax contribution of a particular economic sector will depend *inter alia* on a combination of factors including the loss of tax income arising from the operation of any tax incentives or subsidies and the marginal difference in tax income from other forms of taxation, e.g. PAYE, PRSI, VAT and Corporation tax. However, it is an important issue that must be examined in detail at sectoral level.

Economic Deadweight and Displacement

- 7.14 In evaluating the economic costs and benefits of the provision of tax incentives and subsidies to a particular economic sector, it is also essential to consider the issues of economic 'deadweight' and 'displacement'.
- 7.15 Deadweight is concerned with what would have been the case if the incentive had not been in operation. In relation to the thoroughbred sector, for example, this concept refers to the likelihood that some or all of the breeding and other activities that currently take place in the industry would have been produced without the incentive. It should be noted that deadweight is not limited to 'full' or 100% deadweight, where a project or activity may not proceed at all in the absence of an incentive. 'Partial' deadweight, where a project or activity still takes place but in a different scale, format or location, may also occur and indeed is generally more common.
- 7.16 Displacement refers to the extent to which the provision of a tax incentive or subsidy to a particular sector may lead to other negative side-effects that result in a reduction in overall benefits.
- 7.17 The tax and other contributions of a sector cannot on its own form the basis for deciding on what level of subsidy is appropriate although where the subsidy represents a significant percentage of the economic impact this is a cause for concern. The tax and other contributions of the Irish thoroughbred industry are, however, an important focus of this study and are examined further below.

Rationale for Tax Incentives

7.18 The rationale for the continuation of the current incentives in Ireland for thoroughbred breeding can be summarised as follows⁴³:

- Stallions are highly-mobile international assets, as witnessed by the phenomenon of stallion shuttling, and will be located where the net after-tax rates of return they generate are highest;
- The stallion income exemption has supplied the development of a thriving thoroughbred breeding industry in Ireland, which makes a significant contribution to the Irish economy, in terms of employment (in the thoroughbred breeding industry and supporting industries), rural development and attraction of foreign investment.

7.19 A cost-benefit analysis of the tax exemption requires an assessment of a number of key issues including:

- An assessment of the economic contribution of the sector including indirect benefits and the impact a change in the tax exemption would have on the sector in Ireland, and;
- An assessment of the likely gain to the Exchequer if the tax exemption is changed.

Role of the Tax Exemption in Developing the Irish Thoroughbred Breeding Industry

7.20 The Stallion and Thoroughbred Breeding Industry has experienced growth in recent years. In previous chapters the data was examined which indicates a dramatic increase in the number Stallions, Mares and Foals. This growth reflects a number of factors and according to Industry sources the tax exemption is one of the key factors behind the growth in the wider thoroughbred breeding business. As part of this study, we asked the owners of Stud farms for their views on the role of a number of factors in affecting the competitiveness of the Stallion business in Ireland. This is important as we have expressed concerns in other sectors about tax incentives where the tax incentive is the main or sole factor underlying the viability of the sector. In such cases the long term sustainability of the sector is vulnerable to tax changes in other countries.

⁴³ These points are based on findings of the report *Bloodstock Breeding: A World-class Irish Industry* (2001), reviewed in Annex 1.

- 7.21 The results of our research are included in Table 7.1 and indicate that a range of issues is important in sustaining a successful stallion industry in Ireland. Interestingly, while 83.3 % of respondents believe that the tax treatment is very important for the international competitiveness of the business in Ireland and 100% believing it to be important or very important, other factors including the international reputation are also crucial.
- 7.22 As indicated previously one concern with sectoral tax incentives is that they represent the only factor supporting the development of the sector. In such cases the sector would be vulnerable to the introduction of similar tax incentives in other countries and this raises issues concerning the sustainability of the sector. It is clear that a range of other factors are also seen as important in the case of stud farms and Ireland has advantages in terms of climate, reputation, skilled labour, costs and infrastructure.

Table 7.1: Indecon Survey of Stud Farms in Ireland - Views of Operators on Importance or Otherwise of Various Factors Affecting the International Competitiveness of the Stallion Business in Ireland						
Factors	% of Responses					
	Very Important	Important	Neither important nor unimportant	Unimportant	Very unimportant	Don't Know/Not stated
Availability of Skilled Labour	70.8	25.0	4.2	0.0	0.0	0.0
Cost Competitive Location	37.5	45.8	12.5	0.0	0.0	4.2
International Reputation	87.5	12.5	0.0	0.0	0.0	0.0
Labour Costs	45.8	33.3	8.3	0.0	0.0	12.5
Labour Flexibility	33.3	50.0	4.2	0.0	0.0	12.5
Excellent Climate for Breeding	70.8	29.2	0.0	0.0	0.0	0.0
Well-developed Sectoral Infrastructure	50.0	45.8	0.0	0.0	0.0	4.2
Preferential Tax Treatment	83.3	16.7	0.0	0.0	0.0	0.0
General Government Assistance	70.8	16.7	8.3	0.0	0.0	4.2
Other	0.0	8.3	0.0	0.0	0.0	91.7

Source: Indecon Confidential Survey of Stud Farms in Ireland

7.23 We also asked respondents about the likely impact of a change in the current tax treatment would have on their businesses. These results are included in Table 7.2. The vast majority of respondents indicated that a change in tax treatment would adversely affect their business. 61.9% indicated they would very likely suffer a loss of competitiveness relative to other locations for breeding. A majority suggested that it was very likely that this either would reduce the scale of operations or in some cases could lead to the closure of Irish operations.

Table 7.2: Indecon Survey of Stud Farms in Ireland - Views of Operators on Likely Response of their Business to a Change in the Current Tax Treatment of Stallion Income in Ireland					
Likely Response	% of Responses				Total Responses
	Very Likely	Likely	Unlikely	Don't Know/ Not stated	
Loss of competitiveness relative to other locations	61.9	9.5	19.0	9.5	100
Reduction in part of your business	72.7	18.2	9.1	0.0	100
Closure of your business	13.6	31.8	45.5	9.1	100
Reduction in Profitability	77.3	18.2	4.5	0.0	100
Other	50.0	0.0	0.0	50.0	100

Source: Indecon Confidential Survey of Stud Farms in Ireland

7.24 Finally, we asked respondents for their views on the extent to which the presence of high quality stallions in Ireland helped the wider thoroughbred breeding industry. 87.5 % of respondents expressed the view that the success of the wider thoroughbred breeding industry depended on the presence of high quality stallions in Ireland. It was argued by most respondents that a reduction in the number and quality of stallions in Ireland would affect the overall viability of the thoroughbred breeding industry. This could have implications for the wider racing industry.

Table 7.3: Indecon Survey of Stud Farms in Ireland - Views of Operators on Extent to Which the Success of the Wider Thoroughbred Breeding Industry is Dependent on the Presence of High Quality Stallions in Ireland

Level of Importance	% of Responses
Very important	87.5
Important	8.3
Neither important nor unimportant	4.2
Unimportant	0.0
Don't Know/not stated	0.0
Total Responses	100
Source: Indecon Confidential Survey of Stud Farms in Ireland	

- 7.25 It is difficult to establish the impact of a change in the tax treatment of stallion income. However the available evidence suggest that this has facilitated the development of the sector and has provided a competitive advantage to Ireland. Increasingly, the business is competing with a number of locations seeking to develop a thoroughbred breeding industry. There is in our view a likelihood that changes in the tax treatment of the Stallion business would lead to a decline in activity in Ireland. This would have negative implications for income generated in the sector, tax contributions and the level of employment.
- 7.26 Of course in evaluating the economic benefits of the provision of tax incentives to a particular economic sector, it important to consider 'deadweight'. Deadweight is concerned with what would have been the case if the incentive had not been in operation. This refers to the likelihood that some or all of the breeding and other activities that currently take place in the industry would have been produced without the incentive. It is our view that there would still be some activity in Ireland in the absence of the tax exemption but that its abolition would significantly reduce the size of the sector.

Commission on Taxation

- 7.27 The second report of the Commission on Taxation (1984)⁴⁴ examined the role of tax incentives. The Commission assessed each tax incentive under the taxation system at the time individually and made recommendations as to whether the incentive should be retained or abolished.
- 7.28 The Commission note that incentives are only justifiable on very limited grounds and list the following as the rationale for incentives⁴⁵:
- Market imperfections – taxation should not interfere with the allocation of resources brought about by the market except in instances in which the market fails.
 - Higher Irish costs – given Ireland’s peripheral location in relation to our major markets, Irish enterprises face higher transport costs than their competitors, and taxation may be used to offset this competitive disadvantage.
 - Attracting Foreign Capital – incentives are necessary for Ireland to continue to attract foreign capital and enterprise from abroad.
 - Small domestic market – due to the small size of the home market, many Irish firms sell a high proportion of output on foreign markets.

⁴⁴ Commission on Taxation (1984) *Second Report of the Commission on Taxation: Direct Taxation - The role of Incentives*.

⁴⁵ The Commission defined a tax incentives as “a provision in the tax code which is designed to promote a particular activity” (page 48).

- 7.29 The Commission analysed the incidence of 'relief of profits' tax incentives, such as the stallion fees exemption. They noted that such a relief operates by increasing the rate of return on an investment of funds. Where a company receives exempt income from this source, the benefit of the exemption is passed on to the shareholders on any dividends paid.
- 7.30 The Commission note the advice of the Irish Thoroughbred Breeders' Association (ITBA), that a key reason why foreign owners stand their stallions in Ireland is the favourable tax treatment of stallion fee income. In addition, the availability of top quality stallions, together with the good reputation of Irish breeders, has led to increased numbers of foreign owners boarding their mares in Ireland, which creates substantial employment in rural areas.
- 7.31 The Commission's consideration of the tax exemption for stallion fee income is presented below:
- "The exemption of such [stallion] fees in Ireland is a major incentive to owners of top-class stallions to stand them in Ireland rather than in the United States where more money is available. This results in foreign broodmares being sent to Ireland to be covered by stallions standing in the country, thereby generating foreign earnings and employment.
- If the exemption of stallion fees were to be abolished it is probable that foreign-owned stallions would leave Ireland. This would lead to a fall in the quality of Irish-bred horses and would have an adverse effect on the sale of horses.
- It is clear that breeding of top-class horses is an internationally mobile activity. Ireland has a national advantage in the industry arising from the high reputation and skill of its breeders. The tax regime applying here must take account of that offered in competing countries.
- We conclude that, in principle, income from stallion fees should be treated for tax purposes in the same way as income from other activities. However, the loss to the economy from imposing such taxation could be considerable. The health of the industry in Ireland depends to a large extent on a relatively small number of prestige stallions standing here. These are mainly foreign-owned and could be exported without difficulty."⁴⁶
- 7.32 Based on the detailed updated analysis undertaken as part of this study Indecon believes that the conclusions of the Commission on Taxation remain valid.

⁴⁶ Commission on Taxation (1984), pages 76-77.

- 7.33 The recommendation of the Commission on Taxation with regard to the income tax exemption on stallion fees was as follows:

“We recommend that income from stallion fees be relieved from tax to whatever level is necessary to ensure the continued development of the industry in Ireland.”⁴⁷

Estimated Gross Tax Foregone

- 7.34 Given the pressures on public finances it is important to consider the estimated gross tax foregone as well as the net tax position of the incentives for the stallion sector. The first issue in assessing tax foregone is estimated likely income from Stallion fees. As described in previous chapters, the revenues generated by the stallion sector are derived from the fees earned through the covering of broodmares by stallions standing on stud farms in Ireland. There are approximately 356 thoroughbred stallions at stud in 2002, while we estimate that, on the basis of EBF data, there are approximately 89 stud farm operations in Ireland. Moreover, most of the leading stallions are part or wholly owned by syndicates. Also as noted, there is small number of international stallion stud farms which stand stallions of the highest quality and which account for most of the sector’s income.
- 7.35 We have estimated stallion income earned from thoroughbred stallions in 2002 to be €85 million. This definition of income includes actual cash payments income and “foalshares” arrangements that may be paid in lieu of cash. It may also include intra company transfers in as much as stallion owners may also be the breeder owners.
- 7.36 It should be noted, however, that average income masks a substantial variation in actual fee rates achieved and top quality international stallions command substantially higher fees. Publicly available information from the latest “Weatherbys Guide “show that there are substantial differences in the nomination fees and number of mares covered for each Stallion.

Annual costs/expenditures of stallion activities

- 7.37 The total gross income is not the same as taxable income as it is necessary to consider the costs/expenditures incurred by stallion owners in generating this income. These costs include wages & salaries, stallion keep, promotional expenses and insurance costs. In addition to current costs, there would also be a write-down or depreciation of stallions held. The Stallion business is capital intensive with significant outlay of capital on either yearlings or on

⁴⁷ Commission on Taxation (1984), page 76.

purchases of horses that have finished their racing careers. The data on yearlings, for example, shows the significant capital investment being undertaken. It is also the case that much of this investment can be lost if racing performance of a stallion progeny does not match expectations and depreciation policy could appropriately account for this factor.

- 7.38 In estimating the costs incurred by stud farms, we have based our assumptions on two sources of data/information, namely the estimates of the proportion of stallion revenues accounted for by costs identified in previous research and the findings from Indecon's confidential survey of stud farms. In relation to previous research, Lynam (2002)⁴⁸ noted that on average 10% of stallion revenue is accounted for by keep and promotional expenses. Lynam also assumes that 50% of revenues relate to capital write-downs and the cost of insurance. He notes that since at least sixty percent of stallions are in their payback period, capital write-downs would be substantial in any given year. It was also noted that the cost of insurance increases with the age of the stallion, and proven stallions who command fees at the high end of the price range would tend to fall into this higher age bracket. In our analysis we use more conservative assumptions.
- 7.39 In the table overleaf we set out our scenarios for the estimated total potential taxable income from the stallion sector. To arrive at the estimated total potential taxable income under each scenario we have estimated total wage & salary costs at €44 million, while estimated keep and other expenses are estimated at 5 % of stallion fee income. It is not possible to be definitive on the treatment of depreciation. For illustrative purposes we have assumed that depreciation and financing costs are estimated at 35% of revenues under Scenario A and 24% under Scenario B. Scenario A is in our view the most likely position. Based on these assumptions, we believe that the total potential taxable income from the stallion sector could lie in the range of €7 million - €16.4 million. However, there is significant uncertainty surrounding these estimates.

⁴⁸ Lynam, J., *The Irish Stallion Tax Exemption - Potential Tax Yield*, 2002.

Table 7.4: Upper and Lower-bound Scenarios for Estimated Net Value-Added Contribution of Stallion Sector - 2002 - €		
	Lower-bound Scenario A - 2002 Millions	Upper-bound Scenario B - 2002 Millions
Total stallion fee income - €	85	85
Less		
Estimated cost of Wages & Salaries (see Table 2.14 below)	44	44
Estimated other keep and expenses @ 5 % of stallion fee income	4.25	4.25
Estimated depreciation and financing costs - Scenario A @ 35% of fee income Scenario B @ 24% of fee income	29.75	20.4
Total Net Value-Added - €	7	16.4
Source: Indecon analysis based on EBF data, review of previous research and revised assumptions re average costs of stallion keep and depreciation		

7.40 This estimated taxable income will be subject to corporation and income tax depending on the ownership structure of the stallions. This information is included in Table 7.5 and shows Irish companies own 65.2 % of the ownership of the stallions based on the Indecon survey with Irish residents owning 21.2 %. The remainder is made up of both overseas residents and companies.

Table 7.5: Indecon Survey of Stud Farms in Ireland - Details re Ownership of Stallions - % Ownership of Stallions						
	% Ownership (by number of part- or fully-owned stallions)					
	Irish residents	Irish companies	Overseas residents	Overseas companies	Other	Total
% of Stallions owned	21.2	65.2	7.2	6.0	0.3	99.9*
Note: * Percentages do not sum to 100.0% due to rounding.						
Source: Indecon Confidential Survey of Stud Farms in Ireland						

7.41 Our base case estimates of the potential taxable income from the stallion sector suggested income of between €7 and €18.1 million were presented previously. Table 7.6 presents our indicative estimate of the corresponding tax liability, which reflects the structure of ownership of stallions described above and assuming a mid-point stallion income of €11.7 million. Based on current marginal tax rates, our estimate suggests a gross tax liability of around €2 million.

Table 7.6 Indicative Tax Estimates based on <u>Base Case Scenario</u> - € Millions				
	% Ownership	Taxable Income*	Tax rate (%)	Tax Liability
Irish residents	21.2	2.5	0.42	1.0
Irish companies	65.2	7.6	0.125	1.0
Overseas residents	7.2	0.8		
Overseas companies	6	0.7		
Total	99.9*	11.7		2.0
Source: Indecon estimates				

7.42 There are further tax computation issues that need to be addressed. The non-resident issue is important and the above analysis assumes most of the tax liability is with Irish resident companies or individuals. To the extent that Irish resident companies are owned internationally the figures may overestimate the tax liability.

7.43 However, we need to also assess the personal tax liability foregone arising from distributed profits and the extent of any withholding tax foregone by taxpayers resident in non-treaty countries. To estimate this, it is necessary to consider the percentage of corporations' share

capital held by Irish and non-Irish residents and the share held by non-residents residing in countries that do not have a tax treaty with Ireland.

- 7.44 There are three factors in the estimation of dividend issues as follows:
- Percentage of shareholders who are Irish resident;
 - Percentage of profits distributed;
 - Appropriate tax rate.
- 7.45 On the issue of the percentage of shareholders in Irish companies who are Irish resident, data on this is not available but in our calculations we assume that a very high percentage, i.e. 90% are Irish residents. We also model, as an upper limit estimate, a scenario assuming 100% Irish resident shareholders.
- 7.46 On the issue of the percentage of profits distributed, we know that for a number of significant players, all the profits are reinvested annually in the operation and there are no dividend payouts. This reflects the fact that the industry requires continuous investment. We assume that a minimum of 50% of the profits generated are in Irish companies where all the profits are reinvested and we assume that for the balance an average percentage level of dividend payment of 41 % applies. This is the average percentage dividend payment made by Irish public companies in 2003.
- 7.47 On the issue of the appropriate tax rate, we assume that 80% of the Irish resident shareholders are individuals and the balance is corporates. We also model an upper limit where 100% are private individuals. We assume that taxpayers would pay all of any dividend payments at the top marginal rate of 42% in the case of individuals and 12.5% for Irish corporates. Based in these estimates this indicates an upper limit tax cost of €7 million. This gives a total tax cost of approximately €3 million.
- 7.48 Against the estimated gross tax cost, we conservatively estimate that the stallion sector contributes €22.4 million of taxation in terms of PAYE, PRSI and VAT on purchases of goods and services while the broodmare sector contributes a further €15.1 million or a combined tax contribution of €37.5 million. These estimates exclude the tax contribution of the horseracing sector in Ireland.

Annex 1 Review of Research on the Economic Contribution of the Industry

Introduction

An important objective of this study is to assess the economic contribution of the sector. This analysis will be based on an assessment of the latest data. However, there have been a number of studies conducted of the thoroughbred breeding and horse racing industry in Ireland and internationally. An important element of the current review is to take account of this existing research. In this Section, we will review a selection of the key studies of the industry in Ireland and internationally. The review focuses on the findings of the studies in relation to the economic contribution of the industry in Ireland and the views of previous studies on the stallion fee tax exemption.

Review of Irish Research

The following key studies of the industry in Ireland will be reviewed in this Section:

- *Analysis of the Irish Racing and Breeding Industry* (1983);
- *The Irish Bloodstock Breeding Industry: An Economic and Strategic Analysis* (1996);
- *The Irish Thoroughbred Breeding Industry – Profile and Areas for Investment* (1998).
- *Bloodstock Breeding: A World-class Irish Industry* (2001);
- *An Assessment of the Contribution of The 2002 Galway Summer Race Festival to Galway City and County* (2002); and
- *The Irish Stallion Tax Exemption Potential Tax Yield* (2002).

Analysis of the Irish Racing and Breeding Industry (1983)

In 1983, Goffs commissioned an analysis of the Irish Racing and Breeding Industry. The report was completed by Caimin Flannery and Associates Limited.

The report suggested that the taxation legislation at the time offered definite incentives for the foreign owner and breeder and that the continuation of high betting taxes and/or a change in the tax treatment of breeders' income (nomination fees) could result in this footloose industry leaving Ireland, resulting in a climate of inferior racing, illegal betting and poor breeding stock in Ireland.

The report estimated the economic importance of the industry and employment trends for the period during the early 1980s.

Economic Contribution of the Industry

The study estimated sales of Irish thoroughbred horses and Irish stallion fees for the period. Goff's estimated the amount of such earnings to be in excess of £100 million.

- In total, foreign earnings from thoroughbred breeding were estimated in the report to amount to at least £80 million in 1982.
- The report estimated that foreign reserves resulted from the industry, not only from stallion fees but also from the number of broodmares boarding. In 1982, one stud detailed 154 foreign visiting mares with a revenue of over £4 million. Three other studs had revenue of £1.6 million from foreign mares. Another major stud had earnings of approximately £3million from foreign sources for nominations. Keep charges added another £200,000, with permanent foreign borders yielding £125,000.

Betting Tax Revenue

According to the report, the level of betting tax both on-course and off-course was forcing betting underground, resulting in a loss of revenue for the tax authorities. Illegal betting was estimated to amount to between IR£400 million to IR£600 million. The report includes estimates of the value of betting on horse racing. These estimates are presented in Table A7.7.

Table A7.7: Horse Racing Betting Sales, 1977-1981

	1977 (£'000)	1978 (£'000)	1979 (£'000)	1980 (£'000)	1981 (£'000)
On-Course					
Bookmakers	3,422	4,341	4,784	6,746	7,367
Totalisator	783	800	836	956	958
On-Course Total	4,205	5,141	5,620	7,702	8,325
Off-Course					
Bookmakers	108,689	126,262	132,403	165,013	180,875
Totalisator	973	1,069	-	-	-
Off-Course Total	109,662	127,331	132,403	165,013	180,875
Joint Total	113,867	132,472	138,023	172,715	189,200

Source: Goffs, 1983.

Employment in the Industry

It was stated that over 20,000 were gainfully employed in the industry. This figure was estimated by relating the employment ratio of listed studs. According to the report, there were 3,900 registered thoroughbred.

The Irish Bloodstock Breeding Industry: An Economic and Strategic Analysis (1996)

In 1996, Tansey, Webster & Associates (TWA) completed an economic and strategic analysis of the Irish thoroughbred breeding industry. The main findings of the Report were as follows:

- Ireland is a major force in the international thoroughbred breeding industry. Thoroughbred horse breeding is one of the few international businesses where indigenous Irish industry has developed a position of market leadership;
- It was suggested that the growth of the industry was largely attributable to the 1969 Finance Act, which exempted stallion income from income tax. The tax break was believed to have resulted in internationally renowned racehorses retiring to Ireland to stud and induced many leading international breeders to relocate their broodmare bands to Ireland also;
- Previous to the 1969 Finance Act, none of the top 5 stallions in Great Britain and Ireland were standing at Irish studs. In each of the 3 years preceding the Report (1993, 1994, 1995), three of the top 5 flat sires were standing in Ireland. Ireland was also seen to have the leading stallion in the world, in Sadler's Wells;
- The Tansey Webster report suggested that the international success of the industry resulted in positive returns to the domestic economy;
- The Report concluded by noting the necessary conditions for the future success of the industry in Ireland. According to TWA, the successful exploitation of technological advances has yielded increased covering rates for thoroughbred stallions, and has raised industry profitability, representing one element for the industry's future success. The consultants argued that the retention of the tax exemption for stallion income is the other necessary condition;
- This conclusion is in line with the Commission on Taxation Second Report, which noted that, if the tax exemption of stallion fees were to be abolished, it would be probable that foreign-owned stallions would leave Ireland, leading to a fall in the quality of Irish-bred horses and would also have a negative effect on the wider breeding industry.

Economic Value of the Industry

- The Report noted that the international success of the thoroughbred breeding industry has had significant positive effects on the Irish economy. TWA estimated benefits in the areas of employment and export income.

The consultants found that the thoroughbred breeding industry (including both the stallion and broodmare sectors) is labour-intensive, and has supported substantial levels of both direct and indirect employment. In addition, most of the jobs supported by the industry are in rural areas where alternative employment opportunities are scarce. TWA's estimates for employment in the sector are based on the methodology used by DKM Economic Consultants for the Commission of Inquiry ('The Killanin Report'), 1986.

DKM found that studs standing flat stallions were particularly labour intensive, estimating that "Overall, about 10 persons are employed full-time for each flat stallion, dealing not just with the stallion but also with the much larger number of mares and foals on the farm"⁴⁹. They calculated this employment level per stallion on a full-time equivalent (FTE) basis and included stud grooms, as well as ancillary personnel (including veterinarians, farriers, laboratory, administrative and support staff). For broodmare-only farms, DKM estimated a much lower employment ratio, at about 0.2 employees per broodmare.

TWA assumed that each of the 148 Group-winning stallions each supported 10 FTEs, and that each of the remaining stallions supported 5 FTEs.

Using DKM's estimate for the year 1984, the consultants estimated that the number employed in the breeding industry in 1995 was 4,430 full-time equivalents⁵⁰, up from 3,900 in 1984.

The net exports of horses and the income generated by the international sales of nominations to Irish stallions were also found to have made a positive impact on Ireland's balance of payments. The consultants estimated the industry to be making a contribution of IR£50 million (€63.5 million) to Ireland's balance of payments annually. According to the consultants, the value of annual output rose significantly over 1980-1989, though it fell year-on-year to 1992.

⁴⁹ The Killanin Report (1986), page 39.

⁵⁰ Based on the assumption that 148 individually identified stallions each supported 10 full-time equivalents. The employment ratio for each broodmare followed DKM's methodology also.

The Irish Thoroughbred Breeding Industry – Profile and Areas for Investment (1998)

In 1998, Fitzpatrick Associates conducted a study of the Irish Thoroughbred Breeding Industry. The report presented a profile of the industry as well as identifying areas for investment. The report was commissioned by the Irish Thoroughbred Breeders' Association (ITBA) to provide the background to an ITBA submission to the planning process for the allocation of the 2000-2006 round of Structural Funds. Key elements examined in the report include:

- Profile of the Irish thoroughbred breeding sector;
- Assessment of employment and other contributions of thoroughbred breeding to the Irish economy;
- Identification of opportunities and challenges for the industry;
- Identification of areas for investment; and
- Possible funding sources.

Economic Value of the Industry

The consultants considered the contribution to the Irish economy in terms of:

- Employment (direct and indirect);
- Expenditure by the Sector;
- The Racing Industry; and
- Export of thoroughbreds.

The report's estimates of the level of direct employment in thoroughbred breeding is based on the report by Waldron and Purfield⁵¹ on the horse racing industry in 1998. Waldron and Purfield estimated that the thoroughbred breeding sector provided employment for 6,500 FTE workers in 1997, based in rural areas. This contrasts to the Tansey, Webster and Associates report, which estimated employment in the breeding sector to total 4,430 FTEs in 1995 (adjusted for seasonality). Waldron and Purfield noted of their estimate that much of the employment is seasonal, even for large stud farms, but that the total number of persons employed (part-time, casual and seasonal workers) is underestimated by the full-time equivalent measure.

The calculations of Waldron and Purfield's estimates are presented in Table A7.8. In calculating the employment level, Waldron and Purfield multiply the number of horses by an employment multiplier (the number of employees caring for each horse). The employment multiplier is higher for stallions than for mares (between 0.3 and 0.4 FTEs, depending on farm size) and within the stallion category, it is higher for EBF stallions (8.6 FTEs) than for other stallions (4.3 FTEs), as EBF stallions generally command higher nomination fees.

The estimate for 1995 was 6,188, as shown in the table, but based on growth in the number of mares registered by Weatherby's in 1996 and 1997, Waldron and Purfield recorded an estimate of 6,500 for 1997.

Table A7.8: Estimated Direct Employment in Thoroughbred Breeding in Ireland, 1995			
	Horses	Employment Multiplier	FTEs
<i>Large Breeders</i>			
EBF Stallions	166	8.6	1,428
Non-EBF Stallions	207	4.3	890
Mares	2,850	0.4	1,140
			3,458
<i>Small Breeders</i>			
Owners with 1 mare	3,120	0.3	936
Owners with 2-4 mares	5,980	0.3	1,794
			2,730
Total	12,323	0.5*	6,188
* Weighted Average. Source: Waldron and Purfield (1998).			

⁵¹ Waldron, P. and Purfield, C. (1998) *Economic Analysis of the Irish Horse Racing Industry*.

The sector also provides employment indirectly in linked areas such as racing, supplies and services. Fitzpatrick Associates reviewed the previous research:

- In a study of the contribution of horses to the Northern Irish economy in 1986⁵², Magee estimated that for every 100 FTEs directly employed in the industry, 6.5 FTEs are supported indirectly in sectors providing services to thoroughbred breeders.
- Waldron and Purfield estimated the level of employment supported in the horseracing sector (including racing tourism), and the estimates are as follows:
 - Trainers/Stable staff - 1,615 FTEs;
 - Administration - 219 FTEs;
 - Gambling - 2,672 FTEs;
 - Total Indirectly Supported - 4,506 FTEs.

Therefore, according to research compiled by Fitzpatrick Associates, the total number of FTEs employed directly and indirectly in the sector totals 11,500. Expenditure by the sector would make an indirect contribution to the Irish economy. This was also examined in the report. The estimates put forward by Fitzpatrick Associates are based on 1996 study of the Sport Horse Industry.⁵³ The estimated expenditure by the broodmare sector (excluding stallion farms) totals £94,101,250, as detailed in Table A7.9. This assumed that stallion fees accounted for 39% of all expenditures.

⁵² Magee, S. (1986) *The Contribution of Horses to the Northern Irish Economy*.

⁵³ Corbally, A.F. (1996) *The Contribution of the Sport Horse Industry to the Irish Economy*, unpublished M.Equine Thesis, UCD.

Table A7.9: Expenditure by the Thoroughbred Breeding Sector

Expenditure	£	%
General Keep Expenses (total for 28,025 horses)	57,451,250	61%
<i>Feedstuffs and bedding</i>	50,445,000	54%
<i>Veterinary and farriery</i>	2,802,500	3%
<i>Registration fees/transport</i>	2,802,500	3%
Stallion Fees (7,130 foals at £5,000 per stallion fee)	36,650,000	39%
Total Expenditure by Breeding Sector	94,101,250	100%
Source: ITBA (1998).		

Export sales of Irish thoroughbreds also contributes significantly to the economy. Total export sales in 1995 were estimated to be £31.9 million (€40.5 million). However, as shown in Table A7.10, the total value of export thoroughbred sales fell by 49% between 1990 and 1995, driven primarily by falling sales volumes mitigated slightly by rising average values.

Table A7.10: Thoroughbred Export Sales, 1985-1995

Year	Value (€m)	Number of Horses	Average Value (€)
1985	71.4	3,283	21,752
1990	79.6	4,684	17,002
1991	56.8	3,571	15,884
1992	45.1	2,875	15,662
1993	50.8	941	53,937
1994	59.7	1,205	49,544
1995	40.5	1,197	43,360
Source: CSO Trade Data.			

The horse racing industry also contributes significantly to the economy, primarily through betting. According to the report, on-course betting in 1997 was estimated to be over £104 million (€132 million) (see Table A7.11).

Table A7.11: Betting On-Course, Fixtures and Annual Attendances, 1995-1997

Item	1995	1996	1997
Total On-Course Betting (€m)	108,535	122,639	132,977
Fixtures	232	238	237
Annual Attendances	1,019,134	1,097,994	1,164,724

Source: The Irish Horseracing Authority.

Bloodstock Breeding: A World-class Irish Industry (2001)

In 2001, a further review of the thoroughbred breeding industry in Ireland was completed. The study examined the following elements:

- The annual value of equine output in Ireland;
- Horse breeding in the context of total livestock production;
- The thoroughbred breeding industry: recent performance;
- The thoroughbred breeding industry's capital stock;
- The nature of stallion investments;
- The tax treatment of stallion income in Ireland; and
- Stallion quality, competitiveness and employment supported by the thoroughbred breeding industry in Ireland.

Tax treatment of Stallion income in Ireland

According to the report, the exemption of stallion services income from income tax and corporation tax has provided the cornerstone for the development of an internationally competitive thoroughbred breeding industry in Ireland. The report refers to the case of France, where the raising of stallion income taxes in the mid-1970s precipitated the immediate flight of top equine capital from the country, a blow that the French thoroughbred breeding industry has yet to recover from. For additional support of this assertion, the authors cite the report of the Commission on Taxation (1984)⁵⁴ and The Killanin Report (1986)⁵⁵.

⁵⁴ Commission on Taxation, Second Report (1984)

⁵⁵ Report of the Commission of Inquiry into the Thoroughbred Horse Breeding Industry (1986), Stationery Office.

The report notes that the Commission on Taxation recommended that income from stallion fees should be relieved from tax to whatever extent that is necessary to ensure the continued development of the thoroughbred breeding industry in Ireland.

The Killanin Report recognised the importance of the exemption, noting that without the exemption from tax, most of the top stallions standing in Ireland would not have come to Ireland. Moreover, the Commission warned that the abolition of the exemption would trigger an exodus of top stallions from Ireland and recommended the continuation of the exemption.

Economic Contribution of the Industry

The report considered the economic contribution of the industry in the following areas:

- Annual value of equine output in Ireland;
- Employment;

According to the report, the value of annual equine output grew from €70.5 million in 1995 to €161.5 million in 2000, an increase of 129% in 5 years. This growth reflects two factors: industry output expanded significantly; and average yearling prices also rose steeply.

The report found that the thoroughbred breeding industry is a labour-intensive industry and generates substantial employment in rural areas, where alternative job opportunities are often scarce. The results of the report's analysis on the level of employment supported by the industry are presented in Table A7.12. The report found that in 2001, the total employment generated by the thoroughbred breeding industry was 5,237 FTEs. Once again, this estimate excludes horse racing and betting.

Table A7.12: Employment Supported by Irish Thoroughbred Breeding 1984, 1995, 2001 (Number of FTEs)			
Category	1984	1995	2001
Total Registered Stallions	250	373	349
Estimated Active Stallions	150	224	209
Total Registered Broodmares	7,500	11,950	15,503
Estimated Active Broodmares	6,800	10,835	14,057
Total Employment Generated*	3,900	4,430	5,237
* Includes proprietors and assisting family relatives as well as employees and allows for a temporary increase in employment during the breeding season. Source: Bloodstock Breeding: A World-class Irish Industry (2001)			

An Assessment of the Contribution of The 2002 Galway Summer Race Festival to Galway City and County (2002)

An assessment of the contribution of the 2002 Galway Summer Race Festival to Galway City and County was completed for the management of the Galway racecourse in December 2002. This report gives an indication of the economic value of the horse-racing sector of the industry.

The report considered the following areas:

- Race-goer profile;
- Attendance information;
- Attendance at alternative racing events;
- Galway as a holiday destination;
- Expenditure inside and outside Racecourse; and
- Contribution to the local economy.

As it is the economic importance of horseracing that is of relevance to the current Review, we will focus on the report's findings in relation to the contribution of the festival to the local economy. The calculations and main findings of the report on this point are presented below.

Economic Value of the Galway Summer Race Festival

The main element of the report is an assessment of the contribution of the Galway Summer Race festival to the Galway city and county. The authors include the total expenditure by race-goers inside the racecourse and also outside the racecourse, in the environs of Galway city and county. Both consumer expenditure and increased commercial takings were included in the calculations. Based on the principle of the 'multiplier effect', where the actual contribution of each €1 injection into the local economy is greater than €1 due to re-spending, the total expenditure is increased by a factor of 1.72, a national multiplier rate.⁵⁶

The total expenditure by race-goers inside the racecourse during the week of the event was totalled at €11,055,307 according to the report. The breakdown of this calculation is presented in Table A7.13.

⁵⁶ The report cites the source as McGahey, S. (1995) *Tourism – The Multiplier Effect and Tourism*.

Table A7.13: Total Expenditure Inside Racecourse

Item	€	€
Race-goer spend		7,934,208
Total gambled	20,417,292	
less Total Payout (80% payout rate)	17,296,193	
Net Betting		3,121,099
Total Spend Inside		11,055,307
Source: Martin & O'Leary (2002).		

The total amount spent outside the racecourse amounted to €22,818,702. The calculations from the report that from the basis of this figure are presented in Table A7.14.

Table A7.14: Total Expenditure Outside Racecourse

Item	€
Accommodation	4,921,527
Alcohol	8,476,434
Travel	748,203
Parking	52,242
Grocery	462,375
Non-grocery	1,502,876
Petrol	696,198
Restaurant	5,120,778
Entertainment	838,069
Total Spend Outside	22,818,702
Source: Martin & O'Leary (2002).	

Summing the total expenditure inside and outside the racecourse, the overall total expenditure amounts to €33,874,099, as shown in Table A7.15.

Table A7.15: Overall Total Expenditure - Inside and Outside Racecourse

Item	€
Total Spend Inside	11,055,307
Total Spend Outside	22,818,702
Overall Total Expenditure	33,874,009
Source: Martin & O'Leary (2002).	

In order to account for the actual contribution of the festival to the local economy, a multiplier of 1.72 is applied to total expenditure, to account for the direct, indirect and induced impacts of the initial expenditure due to re-spending. This calculation is shown in Table A7.16.

Table A7.16: Total Contribution of Race Festival to Local Economy	
Item	€
Overall Total Expenditure	33,874,009
Multiplier (1.72)	* 1.72
Total Contribution	58,263,296
Source: Martin & O'Leary (2002).	

The report also assessed the impact of the race festival on employment levels in Galway City and County. A survey of a range of local businesses in different sectors revealed that all sectors had increased the number of people employed during the event. The percentage increase for each sector are summarised in Table A7.17.

Table A7.17: Percentage Increase in the Number of Persons employed, by Sector	
Sector	% Increase in Employment
Pubs	8
Restaurants	26
Accommodation	20
Grocery (incl. Forecourts)	1
Travel/Parking	1
Retail	7
Entertainment	5
Source: Martin & O'Leary (2002).	

In conclusion, the report found that the Galway Summer Race Festival makes a significant contribution to Galway city and county, in terms of expenditure and employment. The total contribution to the local economy was estimated at €58,263,296 in 2002, while employment in the local area increased by up to 26% due to the event.

The Irish Stallion Tax Exemption Potential Tax Yield (2002)

In 2002, John Lynam considered the effects of abolishing the tax exemption covering stallion-related income and capital gains. He conducted an assessment of the likely effects, primarily in terms of tax revenue but also in regard to employment that would result from the abolition of the tax.

After estimating the potential tax yield and accounting for the likely impact on employment in the industry, the conclusion of Lynam's assessment was that only a small amount of tax revenue would result from the abolition of the exemption and significant loss of employment could result in a negative effect on the Exchequer.

Potential Tax Yield from Abolition of Tax Exemption

Lynam calculated the potential tax yield for the Irish Exchequer of removing the tax exemption on stallion-derived income. Lynam's results are presented in Table A7.18.

The table includes three columns of figures. The first column shows the situation that would have existed in the year 2000, had stallion income not been tax-exempt. The second column shows estimates for the year 2002, assuming growth of 25% on 2000 figures. The third column presents estimates for 2002 assuming 50% growth, though Lynam himself notes that this column is likely to overstate the real situation, as growth in 2000 was only 9.6%. Lynam also notes, in regard to the calculation used, that his estimates may overstate the potential tax yield.

Table A7.18: Potential Tax Revenue under Abolition of the Tax Exemption			
Item	2000 (€)	2002 (€) with 25% growth on 2000	2002 (€) with 50% growth on 2000
Stallion Revenue	93,070,670	116,338,337	139,606,005
Less Revenue of Owner-breeders	7,505,554	9,307,067	11,168,480
Relevant Revenue	85,565,116	107,031,270	128,437,525
Less Costs (60%)*	51,339,069	64,218,762	77,062,515
Taxable Income	34,226,047	42,812,508	51,375,010
* Costs - Assumed that 10% of stallion revenue is accounted for by keep and promotional expenses. Also assuming that 50% is accounted for by capital write-downs and insurance costs. Source: Lynam (2002).			

Impact on Employment

Lynam also assessed the impact on the level of jobs supported by the industry in the event of the abolition of the tax exemption. Lynam constructed an equation to compute the impact on the exchequer of the job losses, to be subtracted from potential tax revenue calculated above.

Figure A1.1: Impact on Exchequer of Job Losses

$$\begin{aligned} &\text{Impact on Exchequer of Job Losses} = \\ &\quad (\text{Annual tax bill for each typical stud worker} \\ &+ \text{ State payments to an unemployed worker per annum}) \\ &\quad * \text{ Number of job losses.} \end{aligned}$$

Source: Lynam, 2002.

After accounting for the cost of job losses from the tax yield of abolishing the exemption. The conclusion of Lynam's assessment was that "in view of the small amount of tax revenue the removal of tax exemption is likely to generate, any significant loss of employment could result in a negative effect on the Government's financial situation."⁵⁷

⁵⁷ Lynam (2002), page 7.

Review of International Research

The following key studies of the industry internationally are reviewed in this Section:

- *Report: The Thoroughbred Breeding Industry – Northern Ireland (1998)*;
- *The European Thoroughbred Breeding Industry: A Major Contributor to Rural Europe (1999)*; and
- *The Racing Review – Part 1: The Racing Product (2003)*.

Report: The Thoroughbred Breeding Industry – Northern Ireland (1998)

Ernst & Young completed a study of the thoroughbred breeding industry in Northern Ireland in 1998. The aim of the study was to build a profile of the sector and its economic importance to Northern Ireland within an overall Irish context. The report makes the case for the thoroughbred breeding industry to be an investment priority for EU structural funds. The study examined the following areas:

- Profile of thoroughbred breeding sector in Northern Ireland;
- Contribution of the Northern Ireland thoroughbred breeding sector to the NI economy;
- Opportunities and challenges;
- Areas for investment; and
- Funding sources.

Economic Value of the Industry

We focus on the report's findings regarding the contribution of the Northern Ireland thoroughbred breeding sector to the Northern Ireland economy. The consultants assessed the contribution of the sector in the following areas:

- Employment;
- Expenditure by the Thoroughbred Breeding Sector; and
- Export of Thoroughbreds.

The calculation of employment in the study is based on the employment per mare ratios calculated in previous reports. Ernst & Young estimate that there were 278 full-time equivalents (FTEs) looking after thoroughbred broodmares, 81 FTEs looking after foals and 129 FTEs taking care of stallions. In total, Ernst & Young calculated that the sector directly employs 489 FTEs.

The sector also provides employment indirectly in other economic sectors, such as tourism, betting industry, veterinarians, amongst others. Also, the wages and salaries of the 489 FTEs spent in the rural areas will support further local employment. The report estimates that indirect employment would total 32 FTEs.

Expenditure (both capital and current expenditure) by the sector is another key source of the sector's contribution to the economy. For the sport horse sector, expenditure is estimated at £4.6 million. The expenditure by the thoroughbred breeding sector was calculated at £10.15 million (calculations shown in Table A7.19). The racing sector is also an important contributor to the economy, with on-course betting totalling £6.5 million in 1997. Off-course betting was estimated at £160 million in 1997. However, as 90-95% of the prize money is won by ROI trainers, it is not available to the Northern Ireland sector.

Table A7.19: Expenditure by the Thoroughbred Breeding Sector

Expenditure	£
General Keep Expenses (total for 3,478 horses)	7,651,000
<i>Feedstuffs and bedding</i>	6,260,400
<i>Veterinary and farriery</i>	695,600
<i>Registration fees/transport</i>	695,600
Stallion Fees (1,000 mares at £2,500 per fee)	2,500,000
Total Expenditure	10,151,600
Source: Ernst & Young(1998).	

The European Thoroughbred Breeding Industry: A Major Contributor to Rural Europe (1999)

In 1999, the EFTBA commissioned a study of the contribution of the European thoroughbred breeding industry to rural Europe. The study found that the sector makes a significant contribution to the European economy and to rural development. The study examined the following areas:

- Profile of European thoroughbred breeding;
- Economic Contribution of thoroughbred breeding;
- Opportunities and challenges facing European thoroughbred breeding;
- Areas requiring investment; and
- Funding sources.

Economic Contribution of Thoroughbred Breeding

The study assessed the contribution of the sector to the European economy in the following areas:

- Employment;
- Expenditure/Linkages to other parts of the European Economy; and
- Trade with other parts of the world.

A summary of the findings of the study on the areas which thoroughbred breeding contributes to the European economy is presented in Table A7.20.

Table A7.20: Summary of Economic Contribution of European Thoroughbred Breeding

Contribution	Persons Employed/Value
Number of Farmer Breeders (Group A countries)	9,290
Annual Expenditure of Sector (Group A countries)	€340 million
Total European Annual Expenditure	€410 million
Sales of Thoroughbred Horses (Group A countries)	€510 million
Horse Racing Prize money (Group A countries)	€370 million
Exchequer Revenue through betting taxes	€1,800 million
European Federation of Thoroughbred Breeders' Association (1999).	

The Racing Review – Part 1: The Racing Product (2003)

In April 2003, the British Racing Review Committee released *The Racing Review – Part 1: The Racing Product*. The report makes 76 recommendations for the 8 elements of the Racing Product, one of which is the British Thoroughbred Breeding Industry. The key recommendation for British Breeding is that the industry can be sustained by the introduction of 25% Owners' Premiums for British-bred horses (50% for fillies and mares when jumping) and a further expansion of races for quality fillies and mares.

The British Breeding Industry

According to the report, the British breeding industry has been in decline for the past decade and this is still the case, in particular when viewed against its main competitor, Ireland. The report notes that, due to the sharp decline in the number of foals produced in Britain, the expansion in the number of horses in training in Britain has been supplied largely by Irish breeders. A key reason for this trend, the review contends is Ireland's favourable tax regime.

The report summarises current assistance for British breeders (as outlined in Section 6), but includes no assessment of the contribution of the sector to the British economy. A key point to note in the context of the current debate on the future of Irish tax incentives is that the review makes the recommendation that additional efforts should be made to assist the British breeding industry.

Summary of Main Findings

This Annex has reviewed a range of the previous studies and other research completed both in Ireland and internationally. These studies have, *inter alia*, examined the economic contribution of the thoroughbred breeding industry, in terms of employment supported directly and indirectly, inward investment, export sales, value of equine output, use of auxiliary services and expenditure by the industry in the other sectors of the economy. Some studies also investigated the tax treatment of stallion income in Ireland.

A common finding of the reports reviewed is that the thoroughbred breeding industry contributes to the Irish economy, both directly and indirectly in its spill-over effects, though the magnitude of estimates of the contribution of the industry to the economy varies across studies:

- Tansey, Webster and Associates estimated the number of persons employed in the industry to total 4,430 FTEs in 1995 (excluding horse racing and betting);
- Fitzpatrick Associates, based on estimates by Waldron and Purfield, quoted the number of persons employed as 11,500 FTEs. They estimated expenditure by the industry as IR£94.1 million in 1996 and exports of thoroughbreds to total IR£31.9 million in 1995;
- A study of the industry in 2001 estimated that the value of output in 2000 was €161.5 million and that the industry employs 5,237 FTEs;
- A study by Martin & O'Leary estimated the value of the Galway Summer Racing Festival to the local economy, with the total contribution estimated at €58.3 million in 2002.

A key finding from the review is that the size of the estimate of economic contribution is highly sensitive to the estimation methodology used and which factors are included in the estimate and some previous studies may have overshadowed aspects of the economic contribution of the sector.

Annex 2 Supplementary Tables re Breeding Sector

Table A7.21: Average Number of Horses in Breeding 1995-2002

	2002	2001	2000	1999	1998	1997	1996	1995
Stallions	356	349	347	344	382	367	363	373
Mares	16,467	15,503	14,655	13,928	13,306	12,900	12,140	11,950
Foals	10,214	9,452	8,793	8,119	7,718	7,130	6,556	6,573
<i>Source: ITBA.</i>								

Table A7.22: Results of Goff's Sales, 2002

Category	Lots Offered	Lots Sold	Aggregate Sales (€)	Average Price (€)
February Mixed	559	379	4,218,100	11,129
Land Rover June NH	206	156	2,646,000	16,962
June NH	261	168	1,219,800	7,261
June International	40	27	530,500	19,648
Orby Yearlings	374	350	35,978,000	102,794
Challenge Yearling Sale	245	228	5,949,000	26,090
Autumn Bonus Yearlings	347	278	1,485,000	5,342
October Horses in Training	133	105	655,000	6,241
November Foals	863	613	10,503,000	17,133
November Breeding Stock	440	338	7,650,000	22,632
December Flat	127	80	364,600	4,558
December NH	707	376	2,059,400	5,477
Total	4,302	3,098	73,258,400	23,647
Note: NH = National Hunt				
Source: Goff's (2002)				

Annex 3 Supplementary Tables re Horse Racing Sector

Table A7.23: Average Number of Horses in Training in Ireland, 1993-2002

Age	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993
2 year-olds	516	447	449	411	400	381	395	396	488	530
3 year-olds	590	552	563	472	495	479	512	495	606	608
4 year-olds	709	635	568	579	534	519	553	537	768	869
5 year-olds	1,038	1,003	941	878	878	861	834	808	1,009	1,001
6 year-olds	963	935	813	891	858	756	732	699	790	774
7 year-olds +	1,653	1,536	1,442	1,435	1,321	1,210	1,162	975	1,062	1,063
Total	5,469	5,108	4,776	4,666	4,486	4,206	4,188	3,910	4,723	4,845

Source: ITBA.

Table A7.24: Number of Races by Type of Race (1996-2002)

	2002	2001	2000	1999	1998	1997	1996
2 year-old	171	162	148	148	136	142	144
Classic	5	5	5	5	5	5	5
Other Flat	612	615	565	562	562	545	
Chase	349	327	347	322	316	314	321
Hurdle	657	614	633	597	565	554	565
Bumper	200	212	221	232	235	234	237
Total	1,994	1,935	1,919	1,866	1,819	1,794	1,807

Source: Horse Racing Ireland.

Table A7.25: Number of Races and Runners, 1997-2002

Category	1997	2002	% Change 1997-2002
Races	1,794	1,994	+ 11 %
Runners	21,118	28,259	+ 34 %

Source: Horse Racing Ireland, *Strategic Plan 2003-2007*.

Table A7.26: Economic Contribution of the Horse Racing Industry in Ireland - Value of On-Course Betting - 1996-2002 - € '000							
	2002	2001	2000	1999	1998	1997	1996
Totaliser	38,800	36,087	35,542	32,043	30,098	27,002	24,803
Home Bookmakers	160,000	169,686	162,180	131,404	111,441	101,276	94,451
Away Bookmakers	2,000	2,172	1,971	1,342	1,930	1,562	2,166
Betting Shops	7,400	7,115	5,974	4,756	3,767	3,163	1,243
Total	208,400	215,060	205,667	169,546	147,236	133,004	122,664

Source: Horse Racing Ireland.

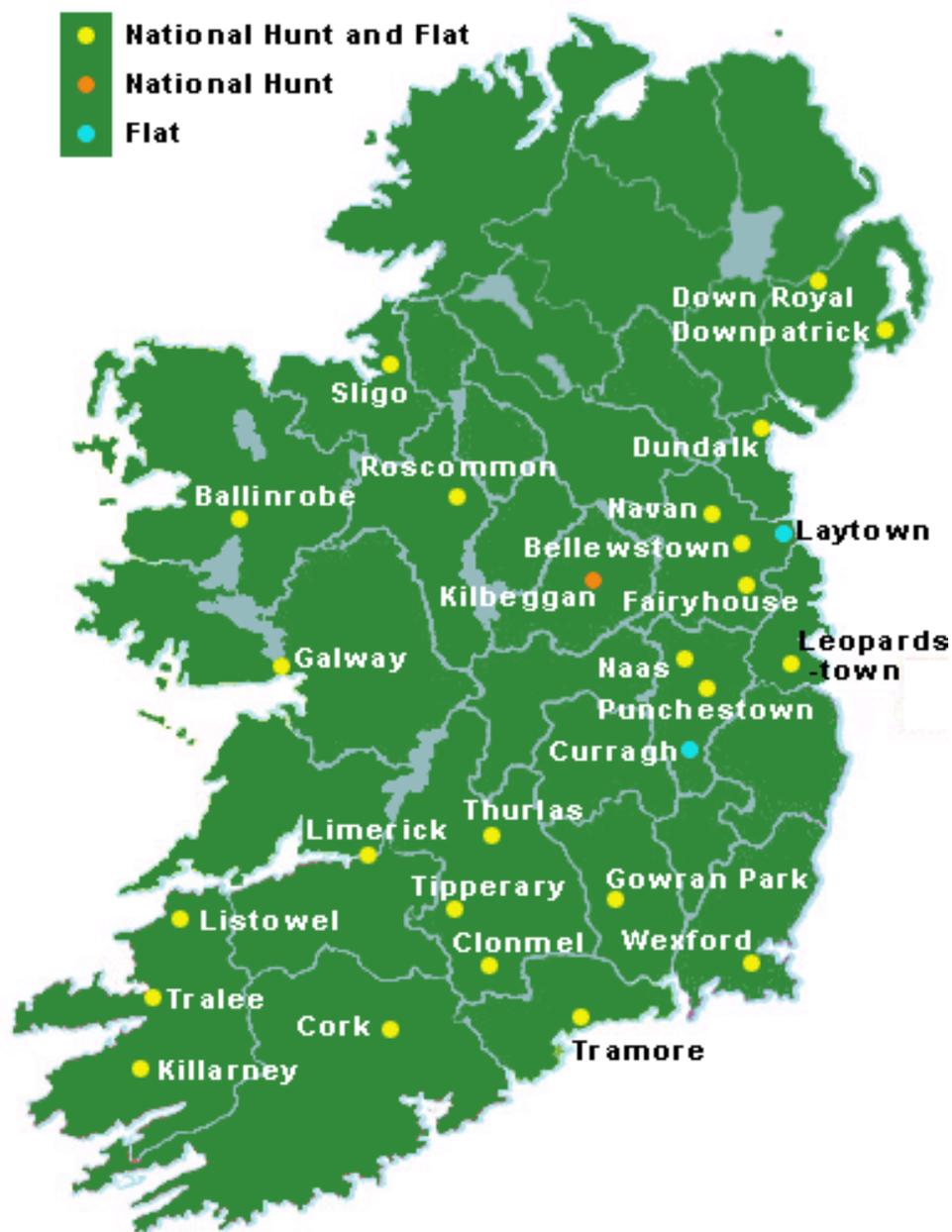
Table A7.27: Economic Contribution of the Horse Racing Industry in Ireland - Value of Off-Course Betting (Exclusive of Betting Duty) - 1996-2002							
(€ million)	2002	2001	2000	1999	1998	1997	1996
Off-course Betting	1,579	1,358	1,177	927	662	578	516

Source: Horse Racing Ireland.

Table A7.28: Prizemoney by Type of Race (1996-2002) - € Million							
Category	2002	2001	2000	1999	1998	1997	1996
2 year-old	7.242	5.110	3.565	2.894	2.487	2.457	2.298
Classic	3.555	2.286	2.063	1.968	1.841	1.778	1.651
Other Flat	19.047	14.312	9.591	8.210	6.408	5.761	5.152
Chase	10.867	7.914	5.985	5.048	3.930	3.293	3.204
Hurdle	14.393	10.387	7.657	6.212	4.810	4.256	4.130
Bumper	2.731	2.198	1.876	1.601	1.418	1.374	1.281
Total	57.837	42.207	30.737	25.933	20.895	18.918	17.717

Source: Horse Racing Ireland.

Annex 4 Map of Racecourses in Ireland



Source: Horse Racing Ireland (www.hri.ie)