THE HORSE SECTOR: DOES IT MATTER FOR AGRICULTURE?

By

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Paper prepared for presentation at the American Agricultural Economics Association Annual Meeting, Denver, Colorado, USA, August 1 - 4, 2004.

Abstract

EU policies focus ever more on rural development initiatives. The horse sector provides some opportunities. An I/O model is used to examine the aggregate effects of the horse sector on Swedish agriculture. The maximal potential of the sector accounts for around 12% of the total contribution to GDP by agriculture.

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JEL classification: Q19

Key words: Horse sector; Input-Output

Introduction

European agriculture is in the process of a rapid structural change. This trend is further compounded by the Eastward expansion as a number of new member states joined EU by May 1, 2004. Sofar a multitude of studies have been conducted in order to examine the economic implications of the enlargement of the EU (Hertel, Brockmeyer and Swaminathan). In an extensive study of various types of scenarios affiliated with an enlargement of the EU, Bach , Frandsen and Jensen examine the welfare economic implications. The analysis demonstrate that there are substantial increases in the supply of wheat, small grains and livestock in the Central and Eastern European Countries (CEEC) as a result of the accession to EU. Similarly, the EU-15 member countries experience a slight decrease in livestock and small grain production compared to a scenario without an Eastward expansion of the EU. Overall, the total welfare effect is projected to around 4.6% for CEEC while the welfare loss for EU-15 is projected to no more than 0.2%.

Consequently, impeding changes in the EU policy environment may have far reaching economic implications for the agricultural sector in the EU-15. At the same time the EU agricultural ministers agreed by June 26, 2003 to enact a major reform of the Common Agricultural Policy (http://www.europa.eu.int/comm/agriculture/capreform). The reform includes a multitude of provisions but in essence it implies decoupling of direct income payments and a strengthened rural development policy. A key feature of the reform is the strive towards a more market oriented policy "while giving EU farmers the freedom to produce what the market wants." (http://www.europa.eu.int/comm/agriculture/capreform, p.1). G21

The enhanced importance of market signals are likely to have substantial economic implications for EU agriculture in countries where the structure of the enterprise is not very favourable by international comparisons. In 1997 the average tillable acreage per farm in the EU-15 states amounted to 18.4 hectares with a range from 4.3 hectares in Greece to 69.3 hectares in United Kingdom. A comparison of the average size of dairy herds yields an estimate of 24.3 cows per dairy herd in EU-15 with a range of 7.7 cows in Greece to 68.7 in

United Kingdom (European Commission, 2002) . The picture is very similar for pig production.

Given the impeding structural changes as well as changes in policy provisions an adjustment process is to be expected. One type of adjustment process is an enhanced reliance upon off-farm employment. According to some information from Eurostat around 26% of the total working hours for the male labour force in the agricultural sector of EU-15 was directed towards other revenue generating activities apart from agriculture (European Commission, 2002). A similar picture is reported by Weiss who found that on more than 50% of the Austrian farms husband and wife spent less than 50% of their working time on the farm. In the depicted situation of structural change it is of interest to examine what other revenue generating activities that may be of relevance for the agricultural sector in Europe.

Examples of new enterprises include accommodation, agro-tourism, recreational and horse related services. However, these enterprises require a sufficient demand for services stemming from a population in a geographically limited area, and a farmer with appropriate managerial skills (McInery and Turner; Bailey, Williams, Palmer and Geering). The development of horse related services may offer a multitude of business opportunities of relevance for the agricultural sector such as grazing, stabling, riding ways, horse transports and production of high quality feed (Sugget). In addition, horse related services also offer an opportunity to diversify risk and thereby reducing the aggregate risk exposure of the farm operation. These services also have the advantage that they utilise rural resources such as land, buildings and labour that may be in abundance. Hence, this paper attempts to provide a brief overview on the linkages between the horse sector and agriculture in Europe. The paper focuses on the relative magnitude of the horse sector in various European countries measured especially in terms of land use but also sheds some light on the private costs of maintaining horses. Finally, the paper reports some findings from a recent Swedish study of the aggregate economic effects of the horse sector upon the agricultural sector and the aggregate economy.

The development of horse related services may offer a some business opportunities of relevance for the agricultural sector. Recent estimates reveal that horses in Europe require around 3% of the tillable land for feed production with a range from 1% up until 10% in the more densely populated countries. Some countries in the EU such as Denmark, Netherlands and Sweden have a comparatively high horse density with around 25 –30 horses per 1000 inhabitants (EU Equus 2001 seminar).

The emerging sector of horse related services raises a number of issues. The first issue relates to the economic effects on the agricultural sector as well as the aggregate economy measured in terms of turnover, contributions to Gross National Product (GNP) and employment. The second issue is to what degree the horse sector contributes to value added in the agricultural sector. The key question, given expected changes in the policy environment, is if and to what extent the horse sector really matters for agriculture? A survey of literature reveals that very little research have been conducted in this area. Carter, Shepard and Whitney as well Musser et . al. analyzed horse racing but sofar to the best of our knowledge no study has examined the impacts of various subsectors of the horse sector, especially upon the agricultural sector.

Hence this paper provides a brief overview of the linkages between the horse sector and agriculture in Europe. The economic significance of these linkages are evaluated for the case of Sweden. The unique contribution of this study is that we are able to decompose the effects of various sectors of the horse industry within a consistent Input-Outputmodelling framework. Thereby, we are also able to assess the specific impact, not only on the aggregate economy, but also on agriculture in terms of different economic indicators. The paper is organized as follows. An initial part of the paper provides a descriptive overview and comparison of some key fetures of the horse sector within the EU-15 countries. The second part of the paper reports the findings from a case study of horse sector in Sweden. The study concludes by reporting the results and enacting a short discussion. .

Horse sector in Europe – a brief overview

On the 22 December 1999, the EU Commission decided that equidae (horses) for breeding and production must be identified during their movement. All horses should have an identification document (passport) with a unique identification number. The implementation of these passports will take time but will eventually contribute towards providing valuable information about the horse sector in the EU (European Commission, 2000). In most countries the total number of horses is not known exactly since there are no records that cover all horses. Horses owned by agricultural enterprises are registered in FAO's official statistics but they only represent part of the population. The equestrian sports typically have their own registers. Given that the current knowledge concerning the number of horses is rather incomplete an estimate was provided in 2001 in affiliation with the EU Equus 2001 seminar. The number of horses in each of the member states was estimated with the help of the COPA organisations. The results are displayed in Table 1

As indicated by Table 1 Denmark, Sweden and the Netherlands have the highest number of horses per inhabitant. The average number of horses per 1000 persons in the EU is 11.7. Lower frequencies are typically found in the countries surrounding the Mediterranean Sea such as Greece, Portugal, Italy and Spain. Table 1 also shows that the total number of horses in the EU is at least 4.400 000. Given that some of the estimates are based on FAO statistics, it is likely that this number is somewhat underestimated. As a comparison, there were 22 million dairy cows in the EU in 1997 (Swedish Board of Agriculture), which implies that the horse population amounts to approximately 20% of the dairy cow population. This fact also has some implications for the utilisation of rural resources such as agricultural land and buildings. Table 2 displays a calculation of the proportion of utilised agricultural land that is required to produce horse feed in each of the member countries.

Table 1. Number of Horses per 1000 persons in EU Member States and the Relation of Horses to Inhabitants

Member state	Tot. number of horses	Inhabitants	Horses per 1000 persons
Austria (A)	81 864	8 200 000	10.0
Belgium (B)	200-250 000	10 200 000	22
Denmark (DK)	150 000	5 300 000	28.3
Germany (D)	1 000000	82 200 000	12.2
Greece (EL)	35 000	10 600 000	3.3
Spain (ES)	350 000	39 600 000	8.8
Finland (FIN)	57 400	5200 000	11.0
France (F)	452 000	59 100 000	7.65
Ireland (IRL)	60 000	3 700 000	16.2
Italy (I)[1]	323 000	57 300 000	5.6
Luxembourg (L)[2]	na	431 000	na
Netherlands (NL)	400 000	15 800 000	25.3
Portugal (P)	27 000	9 900 000	2.5
Sweden (S)	250 000	8 900 000	28.1
United Kingdom (UK)	965 000 [3]	58 800 000	16.4
Total	**4 376 274**	**375 231 000**	**11.7**

[1] COPA estimates are missing, FAO data is used instead (Statistics Sweden, 2000)
[2] Separate FAO data for Luxembourg is not available
[3] Based on British Equestrian Trade Association, National Equestrian Survey, 1999
Source: EU Equus 2001

As pointed out in the EU Equus 2001 report two extreme scenarios concerning production of horse feed are also examined. In scenario A the horse grazes 300 days per year and fed with 8 kg hay and 2 kg of oats per day. Scenario B is a more intensive feeding plan with less grazing and more concentrated feed more suitable for areas where agricultural land is scarce. On average around 3% of the utilised agricultural area would be required for producing horse feed. As a comparison it can be noted that the set-aside acreage of 5 742 000 hectares in the year of 1999 amounted to approximately 4% of the total area of utilised agricultural land (European Commission, 2002). Consequently, the feed requirements for the horse population within the EU are far from negligible. In densely populated areas with a pronounced interest in horse related activities, such as Belgium and Netherlands the required feed area amounts to approximately 10 % of the agricultural land even if intensive feeding schemes are applicable.

Table 2. Proportion (%) of Arable Land that Is Needed at the National Level for Producing the Feed Required for the Horses in EU Member States. Economic Importance of Agriculture Measured as Share of GDP.

Country	Scenario A	Scenario B	Agriculture - share of GDP[4]
Austria (A)	2.4	1.9	1.2%
Belgium (B)	11.8	9.8	1.2%
Denmark (DK)	5.4	4.1	2.0%
Germany (D)	4.2	3.5	0.9%
Greece (EL)	1.65	1.50	7.1%
Spain (ES)	2.5	2.4	4.1%
Finland (FIN)	3.0	2.50	0.9%
France (F)	1.20	1.01	2.4%
Irealand (IRL)	0.9	0.7	2.9%
Italy (I)[1]	3.5	3.2	2.6%
Luxembourg (L)[2]	na	na	0.7%
Netherlands (NL)	13.95	11.4	2.4%
Portugal (P)	1.7	1.8	3.3%
Sweden (S)	8.2	6.5	0.7%
United Kingdom (UK)	4.1	3.3	0.9%
Total EU-15	3.15	2.68	1.8%

[1] COPA estimates are missing, FAO data is used instead (Statistics Sweden, 2000)
[2] Separate FAO data for Luxembourg is not available
[3] Based on British Equestrian Trade Association, National Equestrian Survey, 1999
[4] Based on estimates according to EU 2002
Source: EU Equus 2001

Table 2 also displays the relative economic importance of the agricultural sector. It is apparent from table 2 that there is no clear relationship between the relative importance of the agricultural sector, land required for feed and horse density. Nevertheless, in several of the countries with a high horse density such as Sweden, Netherlands and Belgium, the agricultural sector only accounts for a small fraction of GDP (Gross Domestic Product).

Horse sector- demand and managerial conditions

As household income increases, the demand for most goods increases. Typically the agricultural sector is troubled by relatively inelastic demand for most goods and agriculture's share of GDP tends to decrease as the economy evolves. Food is typically regarded as

"necessities", while leisure and leisure activities are examples of goods that are more responsive to changes in income and prices. In EU Equus 2001 the number of horses per capita is compared with the national consumption levels in each member state (Figure 1). The graph indicates a positive and statistically significant correlation of 0.628 between the national per capita consumption and the number of horses per inhabitants.

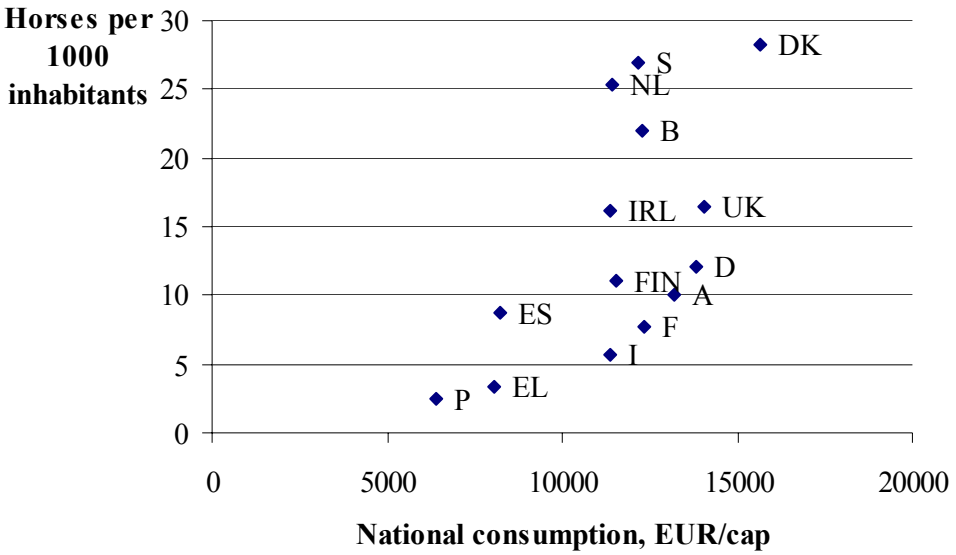

Figure 1. Relation between national consumption levels and number of horses per 1000 persons. Source : EU Equus 2001

The costs of owning a horse and caring for it may have a substantial impact upon the demand for hobby horse activities. According to Figure 1 Sweden and Denmark are characterised by a high horse density but also a relatively high level of national per capita consumption. In the same study the cost of owning and maintaining a horse is examined for the EU-15 countries. An estimate of the annual cost is computed and related to the national per capita consumption. First of all it is apparent that it is up to 1.5 – 3 times more expensive to keep a horse in an urban environment. The difference is mainly due to high costs of stabling in an urban environment as opposed to the case when these services may be provided in rural areas where buildings may lack alternative use. It shoud be noticed that the cited cost estimates do not take into account costs for equipment, veterinary services, insurance etc. and are therefore mainly to be viewed in relative terms more so than in absolute tems. On average

for the EU-15 countries the cost of maintaining a horse in the urban environment amounts to 47% of the average national per capita consumption which undoubtedly is a very considerable cost share of the average consumer's budget. Denmark and Sweden are characterised by relatively high costs in the urban areas (50 and 41 % respectively). The corresponding figure for the rural environment is approximately 21% in EU-15. Consequently, the results from the EU Equus 2001 study reveal that the horse sector appears to have a potential to become a future growth sector in the event of continued economic growth in Europe but the issue is if and to what extent it may benefit agriculture. In addition, the developments of the horse sector may be hampered in urban areas if the large wedge is driven between the cost of keeping a horse in the urban as opposed to the rural areas. A casual observation from Table 3 is that countries that have an extremely high costs for keeping a hobby horse is an urban area, (Italy, Portugal and United Kingdom) are also characterised by a rather low horse density in accordance with figure 1. Hence, it cannot be ruled out that an inadequate supply of reasonably priced stabling facilities in the urban areas may actually hamper the developments of the horse sector.

A recent study of what factors contribute towards farm households being inclined to enter horse stabling activities provides some interesting results (Cederqvist and Wijkander, 2004). The authors conducted a survey of approximately 340 farms of which about 50% had been selected from farmers with stabling activities. The authors found that the perceptions of the local market conditions were very important for the decision to enter the market for stabling services. Furthermore, a strong interest in horses was also very important. Interestingly however, the authors found that the presence of other livestock production tended to decrease the probability of the farm household entering the horse sector. The latter results to some extent challenge the diversification argument for entering the business. The results may equally well be consistent with McInerney and Turner's findings demonstrating the importance of a strong local market and a high level of managerial skills in order to successfully enter the business of horse related services.

Table 3. Relative Cost as a Proportion of per Capita National Income to Keep a Horse in an Urban or Rural Area within Various EU-15 Member States.

Country	Urban relative cost	Rural relative cost
Austria (A)	44%	20%
Belgium (B)	30%	na
Denmark (DK)	50%	15%
Germany (D)	35%	22%
Greece (EL)	na	na
Spain (ES)	56%	22
Finland (FIN)	44%	17%
France (F)	47%	18%
Irealand (IRL)	17%	16%
Italy (I)[1]	62%	26%
Luxembourg (L)[2]	na	na
Netherlands (NL)	39%	17%
Portugal (P)	77%	33.6%
Sweden (S)	41%	22%
United Kingdom (UK)	73%	22%
Total EU-15	47%	22%

Source: Own calculations based on EU Equus 2001

Aggregate economic implications of the horse sector- the case of Sweden.

As mentioned in the beginning of the paper very few studies have been enacted in order to examine the aggregate economic implications of the horse sector or to which extent the sector matters for agriculture. However, the previous overview of the horse sector in Europe indicates that the sector may play a role, although quite varying in several of the member states. In thes section of the paper some results are reported from a study of the horse sector in Sweden where the relevant subsectors of the horse industry are examined in an Input-Output modelling framework. As is obvious from the previous comparisons Swedish agriculture accounts for a comparative low share of GDP although the country is characterized by a high horse density.

Methodology and data requirements

The Swedish horse industry is divided into seven different sub sectors. These sectors are harness racing and thoroughbred racing, gambling services, equestrian sports, tourism services affiliated with horses, horse breeding, commodities and services to the sector and agricultural services to the sector. It is noteworthy to observe that harness and throrougbred racing have been disaggregated from the gambling industry. Hence, harness and throrougbred racing account for the economic activities associated with trainers at A and B-level, where some operate large firms and other operate indiviually (typically B-trainers). A and B –level trainers face different licensing requirements. The sub sector gambling services and administrative services accounts for the economic activities of the gambling industry but it also includes a large media industry as well as various types of interest organizations. Equestrian sports includes riding schools for youth, privately or publicly operated. This sector also includes several national educational centers for the horse industry. In addition, the subsector also encompasses internationally recognized competitions such as Falsterbo Horse Show and Gothenburgh Horse Show. The sub sector commodities and services includes a wide range of activities such as veterinary services, insurance, equipment, transportation and logistics etc.

The study uses Input-Output-analysis in order to examine the so-called multiplier effects of a specific sector within the economy upon other sectors (Miller and Blair). The model is of the general form:

(1) $\mathbf{(I-A)X = Y}$

I is an nxn identity matrix and **A** is an an n x n matrix of input-output coefficients. **X** is a nx1 column vector of outputs from the n different industries. **Y** is a nx1 column vector of final demand for the products produced within the n industries which is demanded by either the households or the public sector. A unique solution to (1) following Miller and Blair is obtained as:

(2) $\mathbf{X = (I-A)^{-1} Y}$

The elements of $\mathbf{(I-A)^{-1}}$ are used for calculating the direct and indirect multiplicative effects, i.e. the Type 1 Multiplier. As an example, the harness racing industry requires building and transportation facilities that will contribute towards the developments in the construction as well as the transportation industries in other parts of the economy. Similarly, equestrian sports or leisure riding activities require feed for the horses. This feed is obtained from the agricultural sector.

If the wages receieved by household are added to the system of equations, the model may be solved for the closed economy case using a similar procedure following Miller and Blair. Thereby, the Type 2 Multiplier is obtained that also accounts for the induced affects and consequently measure both direct, indirect as well as induced effects. The induced effects are attributable to the fact that when the economic activity changes in one of the seven horse related industries, it does not only affect demand for inputs from other industries. In addition, a change in household income also affects demand for goods produced by other industries.

The study utilises the national accounts from Statistics Sweden and supplementary data are collected through surveys, examination of annual reports and interviews with various actors in the seven different industry sub sectors. Altogether the number of industries, n , account for 40 of which seven are defined as sub industries within the horse sector/industry.

A survey was sent to 500 firms available in a registry "Upplev Landet" operated by the Swedish Farmers Federation. The response rate amounted to 28.6% . The material was used in part to estimate input/output-coefficients for the industry, horse tourism. The average income from horse tourism per firm amounted to 25 897 $ and accounted for 31% of total revenues. Another survey was sent to 500 randomly selected horse breeders from the registry of Statistics Sweden. The response rate amounted 41.6% but the effective response rate amounted to no more than 24.6% due to ambiquities of the definition of "horse breeder" in the registry. The average gross revenue per breeder amounted to 127435$. For both categories surveyed, feed accounted for 14 and 19% respectively out of total costs (excluding labour and

capital costs). Other costs such as marketing, telecommunications, transports, energy, maintenance of equipement etc. accounted for 47 and 27 % , respectively which indicates a rather diverse cost structure within these industries.

Results

The direct effects measured as the turnover in each of the sub sectors are illustrated in Figure 2. It is quite apparent that gambling activities, mostly affiliated with harness racing, account for more than 50% of the total turnover. However, it is noteworthy to observe that the gambling activities to a large extent represent a redistribution of gains and losses between various individuals in the economy. In terms of the agricultural sector, the sector "Agriculture and horse serv." is of interest. This sector includes production of horse feed, stabling services and some very limited forestry operations conducted by horse. This sector is of primary interest for entrepreneurs in the agricultural sector and it accounts for 12.9% of the total turnover within the Swedish horse industry. Horse tourism with a limited turnover of 197 million SEK is another prospective rural enterprise mentioned by for example McInerney and Turner .

Horse breeding represents another opportunity for rural enterprises. However, from the study it is difficult to assess to which extent a potential exist for rural enterprises or if breeding is to be enacted by highly specialised operations with a high level of managerial skills. These three sectors, with a potential for affiliation with agriculture and rural resources, together account for around 18% of the total turnover in the horse industry and may be regarded as a potential for the agricultural sector given pending changes in the EU policy environment. As a comparison the total value of Swedish agricultural production amounted to 42 235 Million SEK in 2001. Hence, these three sectors represent a potential of between 6.0 – 8.6 % measured as the total value of agricultural production.

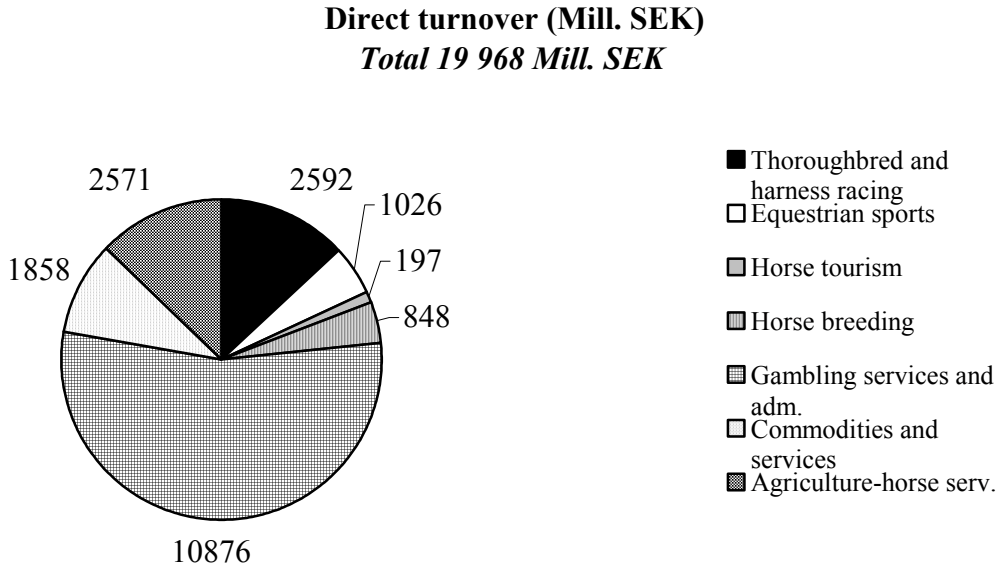

Figure 2. Direct turnover for various sectors of the Swedish horse industry (1 SEK = 7.80 USD)

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The Type 1 and type 2 multiplier effects on other sectors of the economy are displayed in Figures 3 - 4. These effects range from 1.4 – 2.2 for the Type 1 multiplier where horse breeding and horse tourism account for the largest multiplier effects. These results imply that such activities would be especially beneficial if they are associated with rural development initiatives as part of a Common Agricultural Policy reform. Typically, a larger multiplier is obtained for an industry where a large fraction of the inputs are obtained from other sectors within the depicted industry or other parts of the economy. A large multiplier may therefore be associated with low costs for labour, and or, capital. As a consequence, low-wage industries often yield a largel multiplier. High multiplier effects for horse breeding and tourism might suggest that wages and profit margins might be small within these sectors, which should be taken into consideration in policy-making. In addition, the results of the two surveys conducted clearly pointed in the direction of rather low margins for the firms operating within this part of the Swedish horse industry. Hence, given the multiplier effects it

may be desirable from a policy perspective to promote these industries but there still remain some questions regarding the earning capacity of individual firms.

The average Type 1 multiplier for the Swedish horse industry of 1.5 is well in line with the corresponding multiplier for other sectors of the Swedish economy. Consequently the sum of direct and indirect effects of the Swedish horse sector amounts to around 30 000 Million SEK. As a comparison Musser et al. report a Type 1 multiplier of 1.56 for the racehorse industry and 1.76 for the racetracks.

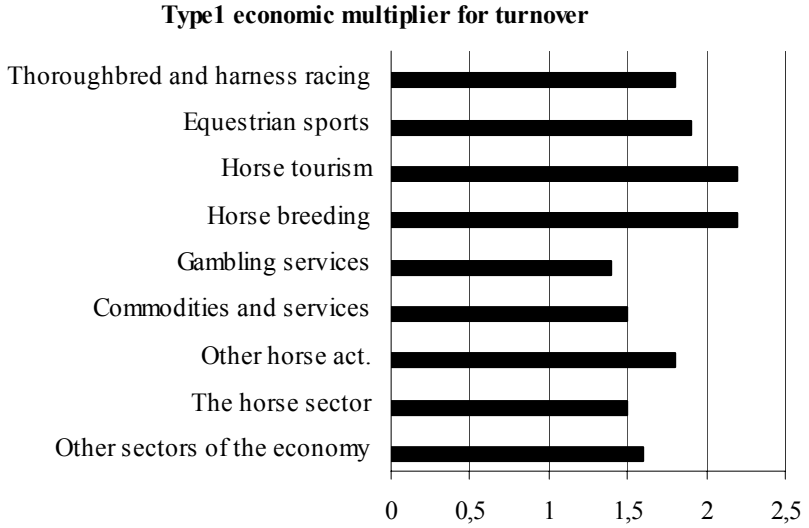

Figure 3. Type 1 multiplier effects on turn-over of various sectors within the Swedish horse industry.

The Type 2 multiplier amounts to approximately 2.3 which implies that the horse the aggregate effects of the Swedish horsesector upon the turnover in the entire economy amounts to approximately 46 000 Million SEK. Carter, Shephard and Whitney report a Type 2 multiplier of 1.76 for "*Racing and Track Operations*" and 5.20 for "*Miscellaneous Livestock*" (p.81). Interestingly, the estimates obtained in this study are well in line with previous studies although the presented study examines the horse industry. It is noteworthy to observe that the multiplier effects in terms of turnover do not exhibit large disparities between various sub sectors of the horse industry. However, the results of the study do not provide any

evidence that the Swedish horse sector would possess any remarkably different features compared to other industries in terms of promoting growth in the economy.

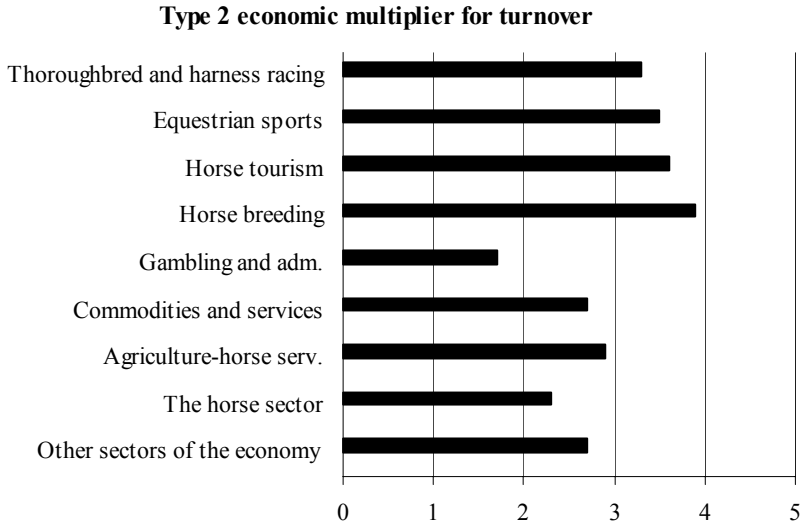

Figure 4. Type 2 multiplier effects on turn-over of various sectors within the Swedish horse industry.

Another interesting aspect of an industry from a rural development perspective is the employment generated by the industry. The study estimates the number of full-time equivalent employees to 9466 individuals in Sweden: The Type 1 multiplier effect is 2.0 so the Swedish horse industry generates a total employment, direct and indirect, of approximately 19000 individuals. The multiplier is relatively similar for most sub sectors but noticeably higher for "Gambling services". The Type 2 multiplier amounts to 3.0 and consequently the total aggregate effect amounts to around 28000 full-time employees. Given that there exists around 250 000 horses in Sweden (Table 1) it is obvious that approximately 11 horses are required to generate a full-time employee .

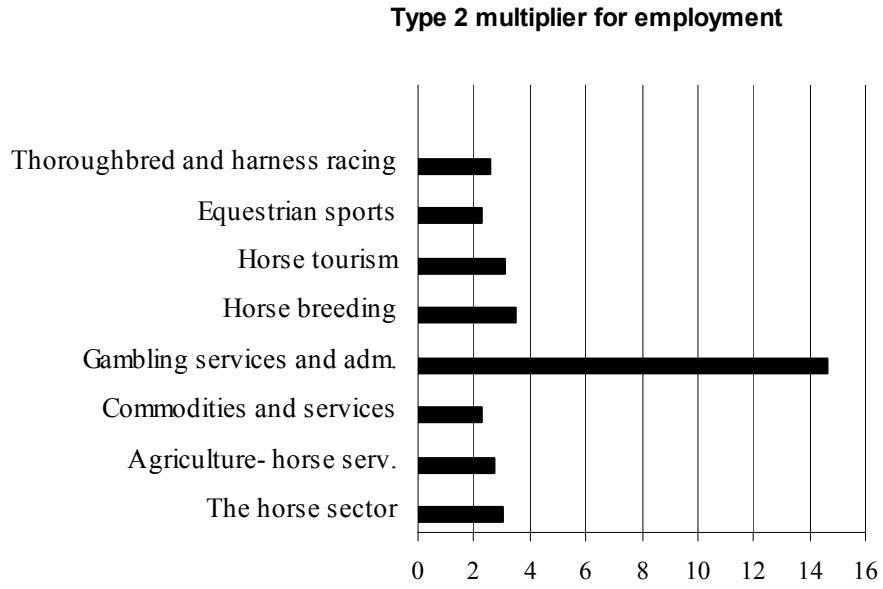

Figure 5. Type 2 multiplier for employment of various sectors within the Swedish horse industry.

Swedish agriculture accounts for a small fraction of GDP as indicated by Table 2. The contribution to GDP by the primary sector of Swedish agriculture amounts to 0.7 %. Several other EU-15 states (Austria, Germany, Belgium, United Kingdom) reveal a similar pattern. The contribution by the Swedish horse sector to GDP is estimated to 0.34%. Out of the total contribution to GDP "Agriculture and hors-horse serv.", mostly affiliated with agriculture, contribute with 1725 Million SEK towards GDP. This figure amounts to around 12% of the total contribution to GDP by Swedish agriculture in 2001 (Statistics Sweden, 2003). In the event that horse breeding to some extent even may be viewed as "agriculturally related", the figure rises to approximately 15%. Consequently, the horse sector is far from decisive for the developments in the Swedish agricultural sector but it plays a role, especially in some areas with high horse density. Consequently, it is clear that the sector matters.

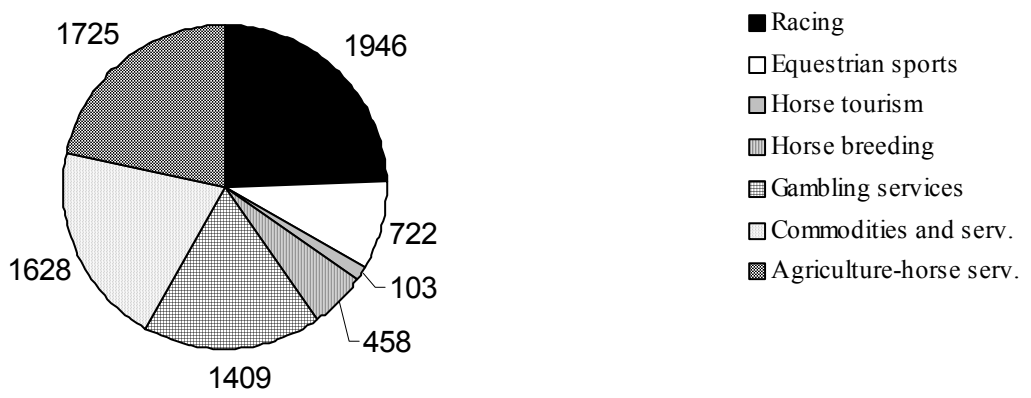

Figure 6. Contribution to GDP by the various subsectors within the Swedish horse industry.

Yet another method of assessing the economic efficiency in the horse industry in comparison with the agricultural sector and other industries is to examine value added per full-time employee equivalent (FTE). An analysis reveals that the average value-added amounts to 484 000 SEK/year and FTE. The corresponding figure for the primary sector within Swedish agriculture is 395 000 SEK/year (Statistsics Sweden, 2003). A comparison with Swedish manufacturing industry yields an average of 616 000 SEK/year (Statistics Sweden, 2003). The value added is especially high within the gambling services sector but even quite high for the parts of the agricultural sector that provides services and goods to the horse industry (Figure 7.)

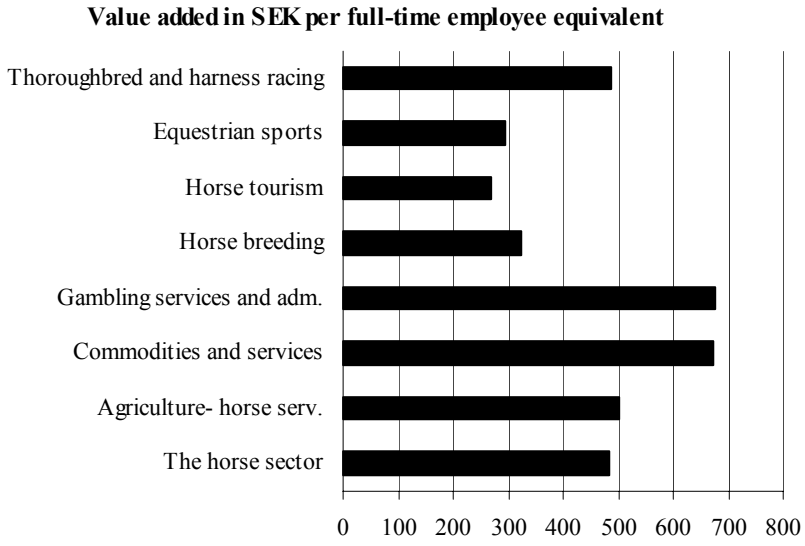

Figure 7. Value-added per full-time employee (FTE) within various sectors of the Swedish horse industry.

Concluding remarks

Future changes in European agriculture may be characterised by a substantial structural change in order to maintain the competitiveness of European agriculture. Changes in policy provisions and the enlargement of the EU may result in a reduction of the cost of feed for horses. A reduction in feed cost may be attributable to lower grain prices as well as a reduction in the cost of forage, mainly due to the decoupling of direct income payments. These anticipated changes ought to favour the developments in the horse industry and thereby contribute towards mitigating the adverse effects of structural change.

Rural development initiatives represent a new and growing policy initiative in Europe. Some of the findings in this paper support the notion that the sector has some potential to serve in the rural development process and in that sense the horse sector matters. However, the ability to utilise the sector for rural development initiatives is hampered by the fact that income growth is not evenly distributed between rural and urban areas in Europe. Recent findings appear to support the casual observation that demand for horse activities is likely to be highly affected by the disposable income. Hence, there may be a strong demand for horse

related services in the urban fringe of high-income areas, which would typically not be the prime targets for rural development initiatives. The EU enlargement is found to promote economic growth in the CEEC- countries (Bach, Frandsen and Jenses. Thereby, the enlargement in the very long run may contribute to an expansion of the horse industry, but the effects are most likely limited in the short run. Hence, the horse industry is even in the future likely to play a role in the aggregate European economies, although far from decisive in relation to agriculture.

However, it's economic role, at least in Sweden, is far more accentuated than a simple analysis of acreage requirements for feed may suggest. This assertion is further supported by findings in this study of Sweden that has a high horse density by international comparisons. Hence, in comparison with traditional agriculture the horse industry is far from negligible and may thereby play a role in the transition process of the agricultural sector and the rural economy.

Consequently, if the horse sector is to play an even more accentuated role in European rural development initiatives, more efforts have to be devoted to promote various forms of horse related services that do not require immediate access to a high income local market. Services/sectors to be promoted are therefore primarily activities such as horse tourism, hunting (ad)ventures, horse breeding and feed production.

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