Methodology of the Monthly Index of Services

Recreation, Cultural and Sporting Activities Industry Review

Introduction

At the launch of the experimental Index of Services (IoS) in December 2000, a commitment was made to review and improve where practical, the sources and methods used to measure the service sector. This paper outlines the findings of the Recreation, Cultural and Sporting Activities Industry Review.

Summary

The industry review for recreation, cultural and sporting activities (known hereafter as recreation) has recommended:

- to replace existing Value Added Tax (VAT) turnover with the ONS Monthly Inquiry into Distribution and Services Sector (MIDSS) turnover
- to introduce existing unused VAT turnover in two industries to measure market output
- to introduce more appropriate Retail Price Index (RPI) deflators and the Average Earnings Index (AEI) for private sector services

Although the methodology will be changed all the way back to 1994 in the IoS system, only the open period from 2001 will be revised. The main impact of the new methodology is stronger growth in 2001.

How important is Recreation, Cultural and Sporting Activities?

In terms of gross value added (GVA) weights in 2001, recreation (SIC[1] Division 92) represents:

- 3.9% of the IoS
- 2.8% of Total GVA

Recreation is published as part of the Government and Other Services[2] component within the IoS.

---

[1] The SIC is the Standard Industrial Classification, and this is the classification system used in the UK to define industrial groupings. The 4-digit refers to the level of detail and is generally the level at which data is collected and aggregated from within GDP(O) and IoS. More detail on this can be found in the IoS Methodology documentation

[2] This covers the following sections of the UK SIC: L Public Administration and Defence; Compulsory Social Security, M Education, N Health and Social Work, O Other Community, Social and Personal Service Activities, P Private Households Employing Domestic Staff and Undifferentiated Production Activities of Households for Own Use

Methodology

Previous methodology[3]

Within Division 92 there are 16 4-digit SICs[4], which are grouped into 7 composite SIC groups. Table 1 below gives the detail of the groups as well as the methodology that was previously used:

Table 1

SIC	Description	Output indicator	Source	Deflator	Weight in 2000 (GDP=1000)	% of division
92.1 & 92.4	Motion picture and video activities and news agency activities	Deflated turnover from VAT returns (£million)	HMCE	General entertainment deflator *	4.5	16.1%
92.20	Radio and television activities	Deflated turnover from VAT returns (£million)	HMCE	General entertainment deflator *	7.7	27.6%
92.31	Artistic and literary creation and interpretation	Deflated turnover from VAT returns (£million)	HMCE	General entertainment deflator *	3.7	13.3%
92.32, 92.33 & 92.34	Operation of arts facilities, fair and amusement park activities and other entertainment activities n.e.c.	Deflated turnover from VAT returns (£million)	HMCE	General entertainment deflator *	0.8	3.2%
92.5	Library, archives, museums and other activities	LA employees (GB) in public libraries and museums FTE, adjusted to take account of trends in LA wages and salaries	ONS	n/a	0.8	2.9%
		LA non-trading capital consumption at 1995 prices (£million)	LA	Deflated at source	0.1	0.4%
92.6 & 92.72	Sporting activities and other recreational activities n.e.c.	LA employees (GB) in recreational services FTE, adjusted to take account of trends in LA wages and salaries	ONS	n/a	1.3	4.7%
		HE on recreational and cultural services	HE	Deflated at source	4.9	17.6%
		LA non-trading capital consumption at 1995 prices (£million)	LA	Deflated at source	0.0	0.0%
92.71	Gambling and betting	HE on Betting and gaming at 1995 prices (£million)	HE	Deflated at source	4.0	14.3%

FTE – Full-time equivalents, HE – Household Expenditure, HMCE – HM Customs & Excise, LA – ONS data for Local Authorities, nec – not elsewhere classified, VAT - Value Added Tax
* derived from: RPI series for Participants sports and Misc. entertainments.

For the first four groups (92.1 – 92.4), deflated turnover was used as the proxy to measure GVA. The turnover source used was the VAT turnover data. The deflator used for each group was for general entertainment; based upon a combination of RPI components.

For library, archives, museums and other activities, input methods were used to measure the non-market output within this industry.

[3] In this report, the previous methodology refers to the methodology used prior to Blue Book 2004, and the new methodology to the methodology taken on at Blue Book 2004

[4] See SIC 2003 documentation for details of the full breakdown of division 92 in the UK SIC - http://www.statistics.gov.uk/sic2003

For sporting activities and other recreational activities n.e.c., the non-market element of the industry was being measured by input methods. In addition, market output was proxied with household expenditure on recreational and cultural services.
The final group, gambling and betting, has been measured using household expenditure on betting and gaming.

Reasons for review

The main reasons for reviewing the recreation industry were as follows:

- four (out of seven) of the groups use VAT as the turnover source, whereas MIDSS data are seen as the preferred turnover data source for a monthly series, because VAT data are:
    - not timely enough for inclusion in the first publication of the IoS
    - only pseudo-monthly data (most VAT returns are made quarterly)
    - not compatible with pre-1996 data due to a different industrial classification system being used
- household expenditure on cultural services is used as an indicator for sporting activities which is inappropriate
- four of the groups are deflated by a derived RPI series which are not specific to any of the industries

What should we be doing?

In October 2001, Eurostat (European Union's Statistical Office) published the 'Handbook on price and volume measures in national accounts'. The handbook provides guidance by product, on what price and volume methods should ideally be used (A methods), are acceptable methods (B methods) and those methods that should not be used (C methods). The handbook has been written in the context of annual data but the same rules apply to sub-annual data.

The handbook gives limited guidance in this industry and reinforces the general view that deflated turnover is preferred for market output deflated by quality adjusted series that represent the services provided. Tickets sold are noted as a worthy volume indicator that would be acceptable.

Issues faced by the industry review

Due to the unique nature of each group within this division, each group will be looked at individually, rather than generalising by issue as has been the practice with previous reviews. Therefore, each section will review key features, output definition, issues and recommendations.

92.1 & 92.4 - Motion picture and video activities and news agency activities

Key features

This group includes the motion picture industry and news agencies:

Motion picture production, post-production, distribution and projection

These three 4-digits form the motion picture industry supply chain. In short, films are made by production companies and either financed by distributors (the main studios) or from investors, once completed the rights to distribute films are secured (if not pre-agreed) and the distributor will then promote the film and distribute films to cinemas. Of course, many of the box office hits in the UK originate from overseas (mainly the US) and are distributed in the UK by subsidiaries.

At the box office, the revenue on average is allocated 40% to the cinema, 20% to the distributor and the remainder goes to the producer. Although the industry is structured from production to projection, the pecking order for payment is the reverse – i.e. the production company get the residual after the distributors and cinemas have been paid. Much of the money that goes to the producer has to pay off the financing of the film, which in many cases is the distributor themselves.

News agency activities

This involves the collection of news information for dissemination to media organisations. The main companies are the news agencies, who provide real time news, financial and sport information and images to newspapers, broadcasters, online publishers, government bodies and commercial organisations. Freelancers are also included within this SIC and although they account for almost half of businesses on the Inter-Departmental Business Register (IDBR)[5] they only account for 2% of turnover.

Output definition

For film production there are two main stages, the production of an original and the production and use of copies of the original. This output is known as artistic originals in national accounts and is explained more fully in Annex 1. Beyond film production, output is the total value of goods and services sold.

Issues

- should MIDSS turnover be used instead of VAT turnover?
- deflator is not representative of the industries it is measuring
- what weights should be used to combine deflators?
- is it appropriate to have news agency activities combined with motion picture and video activities?

MIDSS v VAT

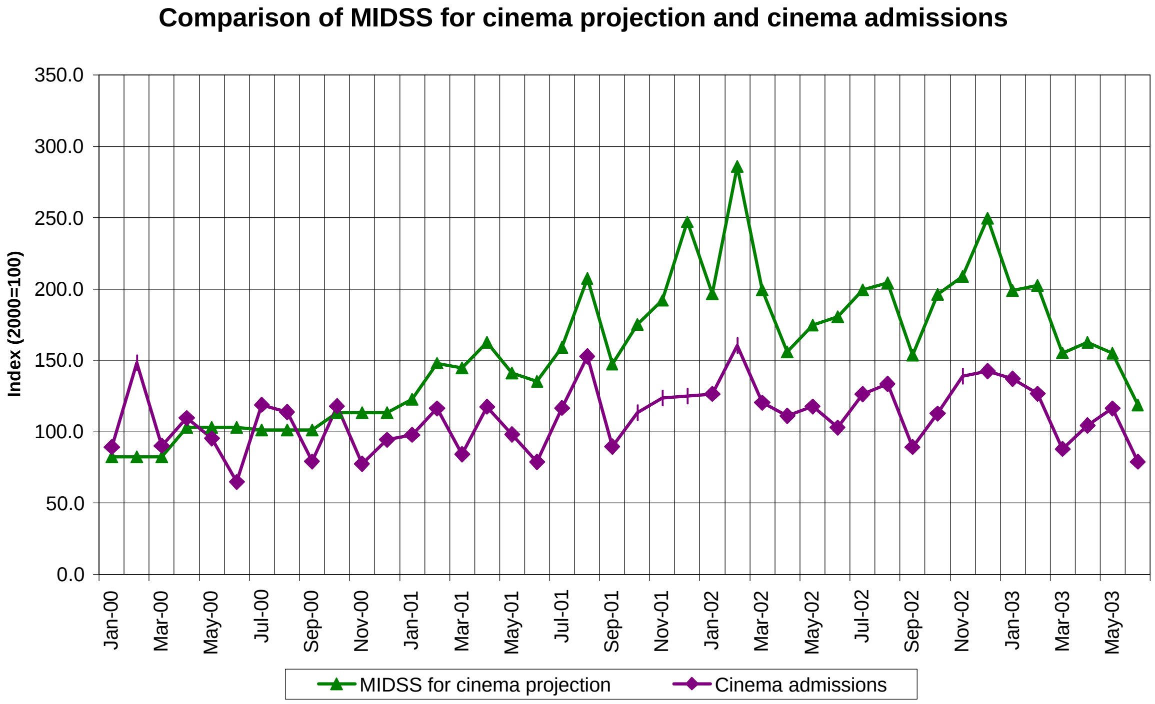
Conceptually this issue has already been settled in favour of MIDSS in previous industry reviews[6], and the summary of that work can be found in Annex 2. The movie industry is

[5] The Inter-Departmental Business Register (IDBR) is the comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS (Office for National Statistics) and by other government departments. It is also a key data source for analyses of business activity. For more information please see http://www.statistics.gov.uk/idbr

[6] See the report on the Hotels and Restaurants review for a full analysis on this issue - http://www.statistics.gov.uk/iosmethodology/downloads/Hotels_and_restaurants_full_review.pdf

driven by the box office and video sales, and producers of films are left with the residual. The industry is not typically seasonal sales are dependent upon the quality of films being shown. The VAT series does not show the same amount of volatility as the MIDSS. When compared to cinema admissions data[7], the MIDSS show excellent correlation especially with the cinema projection data[8].

Figure 1



Deflation

Reviewing the available options no price index exists for film production, nor news agencies. For cinemas, a RPI for cinema admissions is collected and this is clearly an appropriate series to use.

Since the revenue of distributors is linked mainly to box office sales, using price movements of cinema admissions is also an appropriate method. For news agencies and film production, in the absence of appropriate output product prices, the review considered the use of the AEI, but the AEI is not available at the 4-digit level, and is not of usable quality at the section O level. However, given that the AEI is the most suitable in light of the lack of other deflators, the review recommended the use of the AEI for private sector services.

Weights

Annual Business Inquiry (ABI) turnover data has been used to provide a split at the 4-digit level, in order to weight the deflators together.

---

[7] Source of cinema admissions data is Nielsen EDI, and has been taken from the Film Distributors' Association website - http://www.launchingfilms.com

[8] Currently MIDSS are collected as a group and the sample has only been optimised at this level, although the data can be broken down further for analysis– it is not of useable quality at this level.

Is it appropriate to have news agency activities combined with motion picture and video activities?

It is clear that the news agencies have little in common with the motion picture industry, however at present the MIDSS series are sampled as a whole and the individual 4-digit groups are not robust enough to be used on their own. Therefore in the interim this industry will remain in this group.

Recommendations:

1. Replace VAT with MIDSS deflated by the RPI for cinema admissions and the AEI for private sector services

92.20 - Radio and television activities

No recommendations to change this group have been made at this time.

92.31 - Artistic and literary creation and interpretation

Key features

Split into two 5-digit classes:

- live theatrical presentations (92.31/1)
- other artistic and literary creation and interpretation (92.31/9)

The former is mainly made up of opera and theatre companies, together with the supporting services (orchestras, stage production, set designers, etc.). The latter essentially includes arts and crafts, such as artists, sculptors, engravers, poets, designers (artistic), authors, etc.

Overall this industry involves the use of creative and intellectual skills to provide goods or services (mainly entertainment). It is a very wide and varied industry with no dominant activity or companies and contains mostly self-employed people (60% are sole traders according to the IDBR).

Output definition

Output is the total value of goods and services sold. In practice this is turnover or income deflated by appropriate price indices. (This is difficult due to the wide variety of unique services provided). As with motion picture production artistic originals are also part of output (see Annex 1).

Issues

- should MIDSS turnover be used instead of VAT turnover?
- deflator is not representative of the industries it is measuring

MIDSS v VAT

VAT for this industry shows a smooth upward trend overtime, whereas the MIDSS shows a more volatile path with the trend showing lower growth. Anecdotally, events such as Foot and Mouth and September 11th have caused big problems for the theatre industry, especially in London, as foreign tourists normally account for over 30% of ticket sales[9]. The drop in overseas tourists has seen sales fall and a number of large productions close prematurely due to poor ticket sales.

Deflation

For this industry, there is one specific deflator that is available within the RPI, and this is the RPI for entertainment and other recreation. As for movie production and news agencies above, the review recommended the use of the AEI for private sector services.

Recommendation

2. Replace VAT with MIDSS deflated by the RPI for entertainment and other recreation and AEI for private sector services

92.32, 92.33 & 92.34 - Operation of arts facilities, fair and amusement park activities and other entertainment activities n.e.c.

Key features

This group consists of three 4-digit classes:
- operation of arts facilities (92.32)
- fair and amusement park activities (92.33)
- dance halls and dance instructor activities and other n.e.c. (92.34)

This industry provides facilities for performances and general entertainment, for example theatre halls and fun fairs. The industry also includes ticket agencies.

Output definition

Output is the total value of goods and services sold. In practice this is turnover or income deflated by appropriate price indices.

Issues

- should we be using MIDSS turnover instead of VAT turnover?
- deflator is not representative of the industries it is measuring

MIDSS v VAT

The same issues over VAT as highlighted earlier occur for this division. This industry is seasonal, whereas the VAT data shows little sign of seasonality. The MIDSS data is therefore

[9] See BBC website for information: http://news.bbc.co.uk/1/hi/entertainment/showbiz/2124750.stm & http://news.bbc.co.uk/1/hi/entertainment/showbiz/1574833.stm

more plausible as it exhibits a dip in 2001 due to the Foot and Mouth problem which led to some rural attractions closing and lower tourism activity.

Deflation

As with the previous group, the RPI for entertainment and other recreation is appropriate. Also a RPI for attractions is available, which is directly relevant to the industry in question. This covers major tourist sites, theme parks and selected gardens/zoos etc. For the third industry in this group, the not elsewhere classified, it is reasonable to assume that the movements of the other two RPIs would be appropriate proxies.

Recommendation:

3. Replace VAT with MIDSS deflated by the RPI for entertainment and other recreation and the RPI for attractions

92.5 - Library, archives, museums and other activities

Key features

This small group is broken down into following the 4-digit SICs:
- library and archives activities (92.51)
- museum activities & preservation of historical sites and buildings (92.52)
- botanical and zoological gardens and nature reserves activities (92.53)

It involves the storing and preservation of books, archives, artefacts, buildings, animals etc. for educational and recreational purposes.

Output definition

Output is a mixture of market and non-market.

Market - Output is the total value of goods and services sold, deflated by a price index for admission fees, food and drink sales and merchandise sales.

Non-market - An input method is to use the sum of the production costs. An output method for libraries is to combine output data on lending with data on visits adjusted for quality factors such as the range of reference material available (using a cost-weighted approach).

Issues

Local Authority (LA) indicators were used to measure the industry but not all activities are carried out by LA e.g. private museums, zoos, etc.

- coverage of indicators
- should VAT or volume indicators be used for the market activity?
- what deflators are available for this industry?

Coverage of indicators

In this industry, although there is market output, no MIDSS are currently collected. According to the 2001 ABI, total turnover amounted to £826m, but GVA only accounts for £109m (of which 60% came from 92.53). Hence a significant proportion of the industry are market suppliers, thereby enforcing the fact that the previous indicators do not have adequate coverage of the industry.

VAT turnover / Volume indicators

The VAT data for this industry shows a strong seasonal pattern (as you would expect with historic sites, zoos, etc.), which the current input based indicator does not show. Although we have seen elsewhere that the trend is to move away from VAT towards MIDSS, it is clear that in this instance, VAT would give coverage of the market sector which up to now has not been measured.

In terms of volume data, no appropriate sub-annual data sources are available for this purpose. The review recommended that the VAT data are introduced to cover the market element of the industry, whilst maintaining the existing methodology to measure the non-market.

Deflation

The RPI collects data on two areas that are appropriate to this industry; historic sites and attractions, both of which are appropriate. The review recommended combining these deflators with their weights as used in the RPI.

Recommendation

4. Introduce the VAT series deflated by the RPI for historic sites and attractions for the market element of this group

92.6 & 92.72 - Sporting activities and other recreational activities n.e.c.

Key features

The group is split into the following 5-digit groups:
- operation of ice rinks and roller skating rinks (92.61/1)
- operation of other sports arenas and stadiums not elsewhere classified (92.61/9)
- activities of racehorse owners (92.62/1)
- other sporting activities not elsewhere classified (92.62/9)
- motion picture, television and other theatrical casting (92.72/1)
- other recreational activities not elsewhere classified (92.72/9)

This industry provides sporting facilities or events for participation, audiences and education e.g. swimming pools and race tracks, and provides an advertising medium for companies to use. It serves both households and businesses and the income sources include admission fees, subscription/membership fees, advertising, TV/media rights, LA funding and grants.

Overall, the main split in this group is between professional sport that is viewed by audiences and participation sport. As expected, the professional sports dominate this division (football, fitness clubs, motor racing and horse racing being the largest).

Output definition

Output is a mixture of market and non-market.

Market - Output is the turnover generated from income sources deflated by detailed price indices.

Non-market - An input method is to use the sum of the production costs. An output method is to use the total number of tickets sold, adjusted for the quality of the facilities provided. Paying spectators should be separated from participants. This can also be used for market output.

Issues

- household expenditure is not specific to the industry being measured and would not include business-to-business income
- should VAT be used to measure the market output of the division?
- what deflators are available for this industry?

Comparison of proxy indicators

The previous method used household expenditure data for cultural services, whereas recreational and sporting services is more relevant as it covers the products and services supplied by this group. Whilst MIDSS are not available, VAT turnover data is.

The review has compared the household expenditure for sport and recreation together with the VAT data and these two series show a strong correlation. An important issue is however that whilst ticket sales are an important component of professional sports clubs income, over time, sport is seeing more income generated from TV rights, sponsorship, merchandising and transfers - all of which are business to business transactions. In the 2001/2 season, matchday income accounted for less than 30% of income in the Premier League[10].

Therefore the review recommends that, as with 92.5, VAT should be used in the interim to measure the market output.

Deflators

RPI collect a wide range of price indices for this group, including cricket, leisure centres, swimming pools, squash, football, ten-pin bowling, horse-racing and private health club/gym membership. No price information is available for the business-to-business transactions such as sponsorship, media rights, etc. Because of this, the review recommends using the RPIY[11] general price index in conjunction with the RPI components as listed above.

[10] Source - Deloitte & Touche ‘Annual Review of Football Finance 2003’

[11] RPIY is the top-level RPI series excluding indirect taxes on final consumption, mortgage interest payments and local authority taxation

Recommendation

5. Introduce the VAT series deflated by the sports RPIs for the market element of this group and the RPIY

92.71 - Gambling and betting

No recommendations to change this group have been made at this time.

Who was consulted as part of the Industry Review process?

Within the ONS, there was comprehensive consultation with relevant teams both within National Accounts and in the survey areas. In terms of external consultations we are grateful to the assistance received from the Department of Culture, Media and Sport, UK Film Council, British Film Institute and Deloitte & Touche.

New methodology

In summary the industry review for division 92 has made the following recommendations that were implemented at Blue Book 2004:

- to replace existing VAT turnover with the MIDSS turnover
- to introduce existing unused VAT turnover in two industries to measure market output
- to introduce more appropriate RPI deflators and the AEI for private sector services

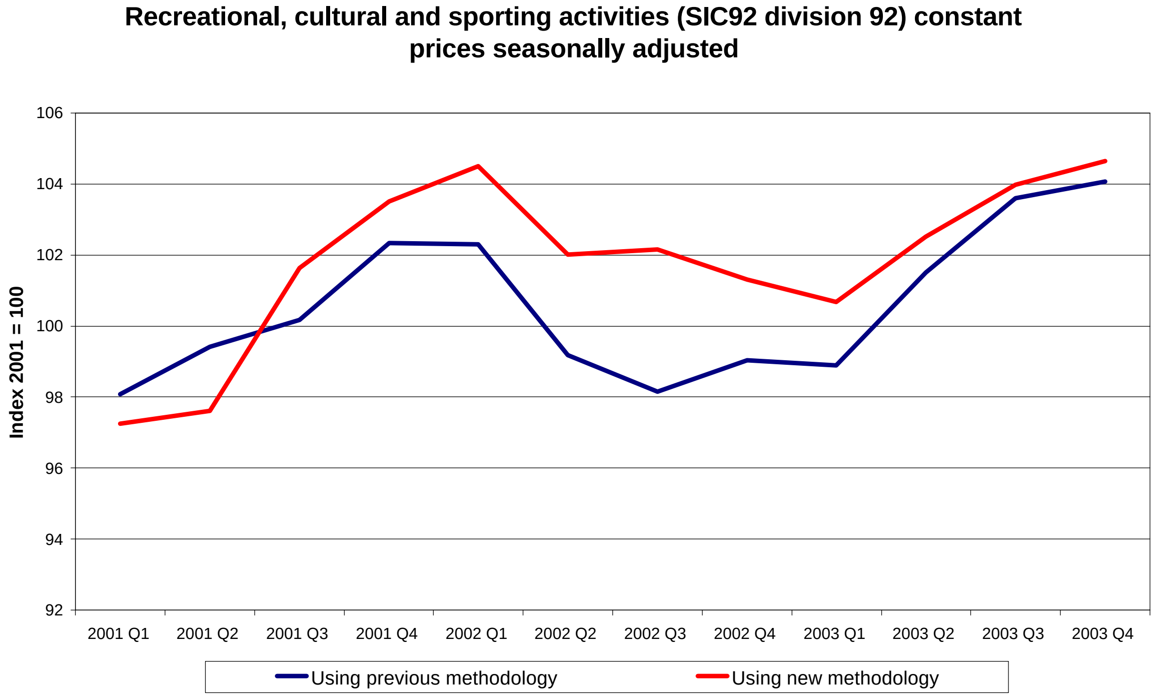
Benefits and issues of new methodology

Benefits		Assumptions
Where MIDSS have been introduced, data will now be available for 1st estimate of IoS and second estimate of GDP(O)	V	Some of the deflators that have been recommended are not specific to the industries concerned - this will be fed into our future requirements of deflators
MIDSS give better coverage of division 92 and a data source consistent with other areas of services		For non-market, that the volume of inputs are equivalent to the volume of output
More appropriate deflators being used		
For sport, the indicators now cover all income sources of businesses within the group		
Where VAT has been introduced, we will now be measuring the market sector where this has previously been omitted.		

Impact of new methodology

The graph below shows the impact of the new methodology on Division 92. The data has been revised back to January 2001. This in line with the open period for revisions set-out in the National Accounts Revisions Policy for Blue Book 2004.

Figure 2



Contact Information

Any questions or comments on this article are welcome, as are offers to participate in the process of improving industry sources and methods. Any enquiries should be addressed to:

Steve Drew
Short Term Output Indicators Division
Office for National Statistics
Room 1.473
Government Buildings
Cardiff Road
Newport
NP10 8XG

Tel: 01633 812384
E-mail: steve.drew@ons.gov.uk

Annex 1

Artistic Originals

As mentioned earlier, artistic originals are part of the production process in movie production and artistic and literary creation, and has two stages:

Stage 1 - Production of the original is an intangible asset owned by the producer for sale or own account gross fixed capital formation. The value depends on actual or expected receipts from sale of use of copies. It should cover the cost of the original as well as the cost incurred at stage 2.

If the original is sold, the value of output is the price paid.

If the original is not sold, the value is estimated on the basis of production costs plus mark-up (equals artistic original)

Stage 2 - Production and use of copies of the original.
If the owner uses the original directly or to produce copies, the value of output is the consumption of fixed capital.

If the owner licenses other producers to make use of the original:
- the owner is treated as providing the service to the licensees and this is recorded as part of the licensees' intermediate consumption
- the use of the asset is recorded as consumption of fixed capital in production of services by the owner. Services are valued to be the fees, commissions and royalties received from the licensees.

In practice, there are issues when an original is not sold, in that an estimate should be included in the output data. However, this a very difficult area to estimate and current methodology within national accounts is to assume a fixed percentage of sales is equivalent to artistic originals - this is a widely accepted practice across other countries. Given that GDP(O) and IoS are index number systems, any allowance for artistic originals based on this system would have no impact, and therefore estimates for artistic originals will not be included in the short-term estimates.

Annex 2

<u>Comparison of MIDSS and VAT turnover (form Hotels and Restaurant Industry Review Report).</u>

Table 2

VAT Benefits		VAT Quality Issues
Data represent a virtual census of the business population, except those under the VAT threshold		Latest month's estimate based on a forecast as the data is not available in time (VAT data is only usable after 9 weeks)
Data are free of charge. Compliance is mandatory so no additional burden on business from ONS use of the data		No briefing is provided with the VAT data
	V	Data are only part-monthly, coming from a combination of monthly and quarterly contributors
		Estimation relies on the regularity of response rates at each delivery
		There is no ONS control over the data source
		The turnover definition used by HMCE is not consistent with the MIDSS definition
		Does not use the IDBR

MIDSS Benefits		MIDSS Quality Issues
Latest month's estimate based on real data, not a forecast		Sample sizes for smaller businesses are relatively small, but large businesses are fully enumerated
Data are monthly		Ratio estimation and rotational sampling tend to cause high levels of volatility in the data (although rotation adjustments partly address this)[12]
Good briefing information available	**V**	MIDSS for Division 55 are collected inclusive of VAT, whereas all other MIDSS are collected excluding VAT
MIDSS are an ONS data source – hence there is control over the data source		
MIDSS are sampled from the Inter Department Business Register (IDBR), which has a higher quality of industrial classification		
Data is available after 5 weeks		
MIDSS covers all businesses classified to an SIC (i.e. non-VAT registered)		

[12] See IoS Methodology for more details on quality adjustments

Annex 3

Comparison of new and old methods

Group	Industry Description	Previous Output Indicator	Previous Deflators	New Output Indicator	New Deflators	GVA weight in 2000 per 1000
92.1 & 92.4	Motion picture and video activities and news agency activities	HMCE - Deflated turnover from VAT returns	General entertainment deflator *	ONS - Deflated turnover from MIDSS	RPI for cinema admissions AEI for private sector services	4.5
92.20	Radio and television activities	HMCE - Deflated turnover from VAT returns	As above	No change	No change	7.7
92.31	Artistic and literary creation and interpretation	HMCE - Deflated turnover from VAT returns	As above	ONS - Deflated turnover from MIDSS	RPI for entertainment and other recreation AEI for private sector services	3.7
92.32, 92.33 & 92.34	Operation of arts facilities, fair and amusement park activities and other entertainment activities n.e.c.	HMCE - Deflated turnover from VAT returns	As above	ONS - Deflated turnover from MIDSS	RPI for entertainment and other recreation RPI for attractions	0.8
92.5	Library, archives, museums and other activities	*Non-market:* LA employees (GB) in public libraries and museums LA non-trading capital consumption at 1995 prices	LA grade drift deflator Deflated at source	*Non-market:* No change	No change	0.9
		Market: No market output indicator used		*Market:* HMCE - Deflated turnover from VAT returns	RPI for historic sites RPI for attractions	
92.6 & 92.72	Sporting activities and other recreational activities n.e.c.	*Non-market:* LA employees (GB) in recreation, parks and baths LA non-trading capital consumption at 1995 prices	LA grade drift deflator Deflated at source	*Non-market:* No change	No change	6.2
		Market: HE on recreational and cultural services: other admissions at 1995 prices	Deflated at source	*Market:* HMCE - Deflated turnover from VAT returns	RPI for football, cricket, leisure centres, horse-racing, swimming pools, squash, ten-pin bowling, private health gm membership RPIY	
92.71	Gambling and betting	HE on betting and gaming at 1995 prices	Deflated at source	No change	No change	4.0

HE – Household Expenditure, HMCE - HM Customs & Excise, LA – Local Authority, MIDSS – Monthly Inquiry of the Distributive and Service Sectors, VAT - Value Added Tax
* derived from: RPI series for Participants sports and Misc. entertainments.
Greyed out – no changes made

References

Pike R and Reed G (2000). *Introducing the Experimental Monthly Index of Services*. Economic Trends, No. 565, pp. 51–68. Available for download from http://www.statistics.gov.uk/CCI/article.asp?ID=68

Drew S and Morgan D (2003). Experimental monthly index of services – An update. Economic Trends, No. 599. Available for download from http://www.statistics.gov.uk/CCI/article.asp?ID=476

Pike R and Drew S (2002). *Experimental Monthly Index of Services*. Economic Trends, No. 583, pp. 70–78. Available for download from http://www.statistics.gov.uk/CCI/article.asp?ID=138

Sharp P (2003), GDP: Output approach methodological guide – Revised. National Statistics Methodology Series No. 32. ISBN 1 85774 537 X. Available for download from: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10383

Eurostat (2001). Handbook on price and volume measures in national accounts, ISBN 92 894 2000 6. Available for download from: http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-41-01-543-__-N-EN

Office for National Statistics (2002). IoS Documentation. Available for download from: http://www.statistics.gov.uk/iosmethodology