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Film, Television & Radio, Books, Music and Art: UK Investment in Artistic Originals*

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Abstract

This report reviews the definition of artistic originals and official estimates of investment in originals as recorded in the UK National Accounts. It lays out a framework for measuring investment in the creation of knowledge assets and proceeds to estimate gross fixed capital formation in this asset type using a variety of methods, including new data. Throughout we compare with recent estimates produced by Soloveichik of the US Bureau of Economic Analysis. Finally, we also consider the role of prices and depreciation, and use our new data to estimate the value of the UK stock of artistic originals. As a result of our new analysis, we conclude that approximately £1.1bn more was invested in original artistic work in the UK in 2008 than had previously been estimated. Combining these data with new depreciation rates suggests an upward revision of £3.5bn to the UK stock of artistic originals in 2008.

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Executive Summary

This report contributes to the measurement of the economic value of the UK creative sector. Our focus is on “the creation of long-lived artistic original assets protected by copyright.”, as defined by the System of National Accounts (SNA). This includes new broadcast programmes, books, art, music and films. In particular, the report offers revised estimates of UK investment from 1990-2008 and a new calculation of the total stock of artistic originals. We also contribute to the measurement of depreciation and prices. The most significant artistic originals, in order of magnitude in UK spending, are: TV & Radio, Books, Miscellaneous Art, Music and Film.

As a result of our work, we show that the total value of new artistic asset creation in the UK is even more significant than previously assumed, and is likely to be worth £3bn more in Gross Value Added (GVA) than national statistics currently suggest.

The report includes:

- i. a description and explanation of the appropriate conceptual framework for estimating investment in artistic assets;
 - ii. a description of official Office for National Statistics (ONS) methods in the context of that framework;
 - iii. new estimates of investment for the UK, using new data and methods;
 - iv. triangulation of estimates using other methods suggested by the conceptual framework;
 - v. a comparison of those estimates with data from the US;
 - vi. estimates of depreciation rates based on work in the US;
 - vii. a discussion of appropriate price indices, required to deflate data on investment and construct real capital stocks;
 - viii. estimates of the newly measured UK capital stock.
-

This work is an important step forward in the measurement of UK artistic asset creation and the contribution of the ‘creative industries.’¹ We intend to collaborate with ONS in the near future, resulting in new estimates for Artistic Originals incorporated in the National Accounts, and so we anticipate an update to our estimates sometime in the near future. Here is a brief summary of the contents:

1. First, we take a general overview and compare official UK with developmental US data. We discover that UK estimates are considerably lower on both an absolute and relative basis. In particular, the UK seems to invest much less in Film than the US as a share of GDP;
2. Second, we set out a framework for analysing artistic sector output and investment in artistic originals. Since little data on market transactions exist, our preferred methods - for conceptual and practical reasons - are based on input costs or royalty payments;
3. Third, we evaluate ONS measurement practice, highlighting some ways to build on official data. We plan to collaborate with ONS in the near future to investigate incorporating new estimates into the National Accounts (Blue Book 2012);
4. Looking at assets in more detail: i) for Film we show UK investment to be higher than currently measured using data on a broader range of UK productions; ii) similarly for TV & Radio we use data for a broader range of productions, but our final estimate is lower because we don’t assume a mark-up for the monopoly power exerted by the owner in the commercialisation of their own assets; iii) for Books we generate a higher figure estimating the cost of producing original works; iv) for Music we generate a slightly larger figure by estimating the cost of asset creation, but our data on royalties indicate a larger figure still; v) official data do not include GFCF² in any other types of long-lived artistic assets, though we estimate these as substantial;
5. We use our framework to produce estimates of GFCF in Artistic Originals according to a variety of methods and triangulate those data to check the quality of the results. A summary of these results is presented in the table below.

1 For some assets, our estimates should be regarded as preliminary, and further work is required. In the case of Music, Books and Miscellaneous Art, accurate estimation requires a longitudinal analysis of the income earned by assets over their lifetime. We had hoped to include such estimates in this report, but legal and administrative complications have prevented us from doing so.

2 Gross Fixed Capital Formation - the value of acquisitions of new or existing fixed assets i.e. investment.

Table 1: Triangulation: Estimates of GFCF in ‘Artistic Originals’: 2007, current prices

Method	A. Film	B. TV & Radio	C. Books	D. Music	E. Other
(1) $\Sigma P(X)X$	£183m	£2,297m	£846m	£209m	£718m
(2) $\Sigma P(R)R(t)$	-	-	-	-	-
(3) $\Sigma P(R)R(x)$				£1,721m	
(4) $\lambda.P(Y)Y$	-	-	£609m	£1,096m	-
(5) P(N)N	£890m	£1,992m	-	£251m	-
(6) Official ONS estimate	£34m	£2,598m	£147m	£159m	-

- (1) Upstream Input costs: A) the-numbers.com B) OFCOM C) ASHE D) ASHE E) ASHE;
- (2) Downstream Rental Payments, allocated over lifetime of individual assets, adjusted for additional capital revenues. Data unavailable for this report;
- (3) Downstream Rental Payments: D) Based on aggregates: PPL/PRS/MCPS/ VPL/BPI/ Live performance. Indicative only, accurate estimation requires a full longitudinal analysis as in (2);
- (4) Proportion of downstream revenues. Estimates for Books and Music are based on ONS method with new estimates for components;
- (5) Approximation derived from aggregate industry output. Presented for information. Not suitable to use in estimating GFCF. A)ABI, alternative available from UKFC presented in Annex B) ABI D) ABI;
- (6) Official ONS estimate: A) input costs B) input costs adj. for market power in private sector broadcasting C)proportion of revenues D) proportion of revenues E) no official estimate.

Note to table: All data are nominal and refer to 2007. In cases where we have more than one dataset for that method we choose what we consider to be the superior source. Green highlighted cells in rows (1) and (2) indicate the preferred method for final estimates. Patterned green cells in rows (1) and (3) indicate the second-best approach where data for the preferred method were unavailable. Orange highlighted cells in row (6) contain official data as recorded in the National Accounts.

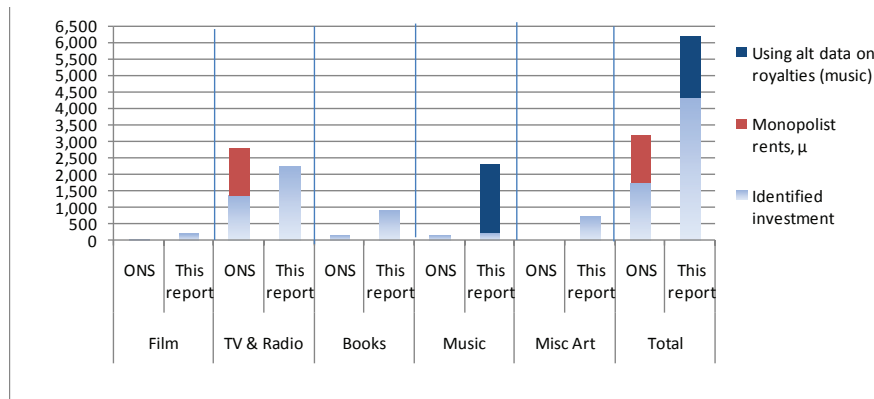
The second row of Table 1 highlights our preferred method for Books, Music, and Miscellaneous Art., We had hoped to estimate the value of investment as the discounted sum of royalties earned over the life of individual assets. This was not possible in the time available. The estimate of £1,721m for Music (2007) in row 3 is a cross-sectional sum of royalties that accrue to musical assets of all vintages, including estimates of revenues earned from recordings and live performances. Under certain conditions this could be used as a proxy for annual investment; however, the necessary assumptions to infer this relationship are unrealistic for Music. So we use a more conservative estimate of £209m in Row 1. We accept that this is likely an under-estimate and expect a more accurate measure to lie somewhere in between the two figures.

We are unable to present a similar figure based on revenues for Books. Although we have some limited data on royalty rates for authors, we have little data on those that flow to publishers who also have ownership rights to original publications.

From the array of methods and estimates summarised in Table 1, we make our final estimate for each asset, and explain our reasoning, whether it be conceptual or practical. Chart 1 compares our new investment estimates with those produced by the ONS (2008) for the five asset categories. This also gives us a new aggregate for investment in artistic originals by these creative industries. Overall investment in 2008 was £4.3bn, exceeding official estimates of £3.2bn.³ We estimate TV & Radio at £2.2bn, lower than the official estimate of £2.8bn, but we estimate Film, Books, Music and Miscellaneous Art to all be higher than official estimates. When using our alternative measure for music, we reach an aggregate figure of £6.2bn. We would expect this figure to increase if we were able to estimate the value of originals Books and Miscellaneous Art based on royalties and revenues.

3 Figures are approximations.

Chart 1: Investment in Artistic Originals, 2008, Current Prices (£m)



Source: ONS estimates are from the National Accounts. For this report, sources are: i) Film, the-numbers.com, UK Film, Council, British Film Institute; ii) TV & Radio, OFCOM; iii) Books, ASHE; iv) Music, ASHE, Alternative estimate, 'PRS for music'; v) Misc Art, ASHE

Note to figure: All data are nominal and are for 2007. Light blue bars show our final estimate and are compared to investment as measured by ONS and recorded in the National Accounts. The latter are effected by an assumed mark-up for monopoly power in private sector broadcasting, highlighted with the stacked purple contribution for 'ONS TV & Radio' and 'ONS Total'. For music we have an alternative estimate based on royalties generated by UK music originals, shown by the dark blue stack for 'This Report, Music' and 'This Report, Total'.

Chart 1 shows that, for most asset categories, our estimates of GFCF are higher than those in the National Accounts (except TV & Radio, where the comparison is not on a like-for-like basis). Measures of investment can include additional rents earned by monopoly owners of intellectual property rights (IPRs) if revenues are used in the estimation. Our interpretation of the ONS method is that it estimates a factor which allows for those additional rents, whereas we make no such allowance. The result is that private sector investment is multiplied by a factor of around four in recent years.

To estimate the UK capital stock of artistic originals we need to define suitable price indices and depreciation rates. For prices, we discuss a variety of options but settle on an implied output deflator. For depreciation, we draw on the ground-breaking work of Soloveichik (2010) of the US Bureau of Economic Analysis (BEA), using the reasonable assumption that US and UK originals depreciate at similar rates. We bring these data together and present estimates of the UK stocks compared with those implied by the National Accounts. The result is an upward revision of the real value of the UK stock of around £3.5bn, even when estimates for 'Miscellaneous Artwork' are excluded.

Introduction

This report is part of a broader project aimed at measuring investment in intangible or knowledge assets, and the contribution of knowledge to growth. In recent years, there has been a great deal of interest in the value of the 'creative sector' and creative industries. We aim to contribute to this discussion using the framework laid out in Haskel et al (2009), specifically in this report to industries that invest in long-lasting artistic assets formally protected by copyright.

The standard approach taken in measuring the creative sector is to select industries from the Standard Industrial Classification (SIC) that are considered 'creative', collate measures of output, and then present 'creative output' as a share of total output. Examples include analyses by the Department of Culture, Media and Sport (DCMS, 2010), a report by the World Intellectual Property Organisation (WIPO, 2003), and an ONS analysis based on the Input-Output tables (Mahajan, 2006). However, there are problems with this approach.

First, there is considerable debate on which industries should be considered 'creative'. These industries and sub-industries are discussed in more detail in the WIPO report (WIPO, 2003), which introduces definitions such as 'core', 'interdependent', 'partial', and 'non-dedicated support' according to the extent and way in which industry activity (as defined by the SIC) is based on copyright. For example, the publishing industry primarily exists for the purpose of producing and distributing copyrighted literary works, and is therefore considered a 'core' industry. 'Interdependent' industries are those whose function is to facilitate the production or distribution of originals. Sticking with our literary example, this could include the manufacture or distribution of e-book readers or paper. 'Partial' industries are those where activity is related to protected works, such as the manufacture of merchandise for a literary brand like Harry Potter. 'Non-dedicated support' covers the remaining industries in which a portion of activity facilitates the production or distribution of protected works, including the wholesale or retail industries.

Second, measuring the economic size of the creative industries is inadequate for measuring creative activity or the input of creative workers, as it takes no account of creative activity in other industries. For instance, if we consider investment in design, data for 2006 show that around half of investment in design was undertaken within firms outside the design industry. A simple measure of output for the design industry could therefore miss as much as half the total activity. Such an approach also measures considerable non-creative output, including expenditure on administrative or financial staff or equipment. Importantly, such an approach may lead to double-counting, since the output measure can include investments in tangible or intangible assets already counted elsewhere.

Therefore, rather than seeking to define what is and what is not creative output, and what industries should be considered part of the creative sector, this paper sets out a framework to identify and measure investment in long-lived assets formally protected by copyright,

and the associated capital stock. We then use those data in a growth-accounting analysis to estimate the contribution of copyrighted assets to UK market sector growth. The results are presented in the accompanying report, 'The Role of Intellectual Property Rights in the UK Market Sector' (Goodridge and Haskel, 2011). They represent an improvement to the underlying data and outputs of the broader intangibles framework summarised in Haskel et al (2009) for the UK and Corrado, Hulten and Sichel (2006) for the US.

1.1 Defining the components of the UK National Accounts

Since investment in Artistic Originals is one of the few categories of intangible investment already recorded in the National Accounts, we also re-evaluate official estimates using our conceptual framework, comparing data from the National Accounts with our own estimates. Data for investment, and its underlying components, are discussed in Section 6. For simplicity, we define these here.

1) Film

For Film, the ONS rely on input costs. Its data is based on the funds provided by production companies and funding partners, including Channel 4. The data can be found in the Channel 4 Annual Report(s). For example, funding of £39m is recorded for 2009 (Channel 4, 2009. p71). Recent ONS estimates are forecasts based on data for previous years. Hereafter, these data shall be referred to as 'measured UK investment in Film Originals' or similar.

2) Television and Radio

For TV & Radio the ONS rely again on input costs, focusing on the production costs of long-lived programmes incurred by public service broadcasters - the BBC, ITV, Channel 4 and S4C. The data can be sourced from their individual Annual Reports. ONS data for the most recent years are forecasts based on previous data. In more detail:

BBC

Estimates of investment are costs-based, and include components for original productions both made and purchased by the BBC, each adjusted for depreciation, as recorded in the BBC Annual Report(s). Specifically:

ONS Investment =

'Value of new programmes for future sale' –

'Amortisation of programmes for future sale' +

'Value of programme acquisitions' +

'Change in value of acquired programmes'

We believe there to be problem with the definitions used here, with the series for "value of new programmes *for future sale*" not representative of in-house investment in all new programmes. After all, many BBC productions are for its own use rather than future sale.

Channel 4

Estimates of investments are costs-based, and made up of components recorded in the Channel 4 Annual Report(s). Costs are adjusted so they only reflect the production of long-lived assets, excluding short-lived productions like Channel 4 News Specifically:

ONS Investment =

(Total Costs of Drama Programmes)*{1 – (Total Hours broadcast/Purchased Hours broadcast)} + Change in value of stocks/inventories

The method only considers investment in drama rather than investment in all types of programme. Second, it explicitly excludes investments in commissioned programmes produced by the independent sector. Yet Channel 4 now outsources or commissions almost all of its long-lived productions, meaning that all stock hours are purchased and Channel 4 now has no in-house drama. This may be a legacy if Channel 4 produced in-house programmes when this method was first introduced

ITV

Although the estimates for ITV are again based on costs, there is a significant conceptual difference in the methodology compared to other broadcasters. Each original programme or series is a unique asset from which the owner derives monopoly power. To account for this, our interpretation of the ONS method is that they adjust costs using a factor which attempts to estimate the revenues earned from this additional market power. Specifically:

ONS Investment =

{(Costs of ITV programmes) – (Costs of networked & ITN programmes/2)} *

(100/Advertising Revenue as a % of Total Revenue)

Data for each of these components are available from the ITV Annual Report(s).

S4C

Estimates for S4C are also based on production costs. Specifically:

ONS Investment =

(Cost per hour of drama programmes * Hours of drama broadcast) +

(Cost per hour of education programmes * Hours of education broadcast) +

(Cost per hour of music and arts programmes * Hours of music and arts broadcast)

The method is reasonable but the coverage is narrow, and appears to exclude a number of relevant genres, including children's programming. Historically this has made up a large part of S4C output, including originals that were later re-worked into English translations.⁴ Furthermore, the final estimate appears low in the context of the channels funding (approximately £100m p.a.).

Hereafter, the aggregate for these data shall be referred to as 'measured UK investment in TV & Radio Originals' or similar. Data for ITV will be referred to as 'investment in private sector broadcasting', whilst data for the BBC, Channel 4 and S4C will be referred to as 'investment by public broadcasting corporations', or similar.

3) Books

Estimates for Books are based on estimates of the annual capital income generated by the UK stock of original literature. Assuming certain conditions, this equates to annual investment. Specifically:

ONS Investment = UK Sales * 0.075

We assume that the factor of 0.075 is an estimated royalty rate for authors. We cannot be sure of the source of data for UK Sales. We believe it to have originated from the Publishers Association, but sales data has been forecast in recent years. A more accurate factor would account for the profits earned by publishers, with the ownership share depending on the specific right. A preferred sales measure would be based on the sales of copies of UK assets, rather than UK sales of assets owned worldwide.

⁴ Prominent examples include 'SuperTed' and 'Fireman Sam', which could make a considerable difference to final estimates, particularly if an allowance is made for commercial exploitation via a mark-up, μ .

4) Music

Estimates for Music, or recording originals, are produced on the same conceptual basis as Books:

$$\text{ONS Investment} = \text{UK Sales} * 0.095$$

We assume that the factor of 0.095 is an estimated royalty rate for artists. We believe the sales data originated from the British Phonographic Industry (BPI) but data have been forecast in recent years. A more accurate factor should account for the profits earned by other music rights owners including songwriters, artists, record labels and publishers, with the ownership share depending on the specific right. A preferred sales measure would be based on the sales of UK recordings, rather than UK sales of copies of assets owned worldwide.

5) Miscellaneous Artwork

At present the UK National Accounts include no estimates for any other form of artistic assets including photography/images, choreographed routines, theatrical productions, fine art or greeting card designs. We produce some preliminary estimates for some these assets, which we refer to as 'Miscellaneous Art'.

Background: Copyrighted assets or ‘Artistic Originals’ in the SNA

Investment in copyrighted assets is one of the few categories of intangible investment included in the System of National Accounts (SNA), formally referred to as ‘Entertainment, Literary and Artistic Originals’ since the 1993 SNA revision.

The European System of Accounts⁵ (ESA) states that valuation of originals ought to be based on market transactions, production costs or the discounted value of future receipts. Data on transactions are rare, since originals are often created in-house. Receipts are in the form of licence fees,⁶ paid to the owner of the asset and recorded as service transactions. Sale of the full asset rights is treated as negative and positive fixed capital formation for the seller and purchaser respectively. In practice, production costs or discounted future revenues tend to be used when estimating investment.

To get an idea of current estimates, Table 2 compares official estimates of gross fixed capital formation (GFCF) in artistic originals as a percentage of Gross National Product (GNP) for European Economic Area (EEA) countries in 1995 and 2001. UK estimates are the highest of those in these European countries. US data for 2002, based on estimates outlined in Soloveichik (2010), are included for comparison. The disparity suggests there may be some undercapitalisation in European countries including the UK.

5 ESA refers to the formalisation of SNA recommendations into EU legislative requirements.

6 SNA 2008 has introduced additional changes to reflect the measurement of i) licences to re-produce and ii) licences to use. This distinction is discussed in greater detail later.

**Table 2: Originals as a percentage of GNP
(1995 & 2001)**

% of GNP	1995	2001
Austria	0.09	0.09
Belgium	0.05	0.03
Denmark	0.12	0.12
Germany	0.16	0.18
Spain	0.1	0.07
Finland	0.19	0.19
France	0.09	0.09
Ireland	0.17	0.11
Italy	0.07	0.1
Luxembourg	0.01	0.01
Netherlands	0.04	0.03
Portugal	0.17	0.22
UK	0.21	0.22
% of GDP		2002
US	-	0.62

Note to Table: Data for European countries taken from report produced by Eurostat GNI Committee., First meeting, 5-6th November 2003: 'Report of the Task Force on Entertainment, Literary and Artistic Originals'. Since artistic originals are not currently capitalised in the US Accounts, US data are developmental BEA estimates (Soloveichik, 2010). Additionally they are presented as a % of GDP rather than GNP, and refer to 2002 rather than 2001.

We know from Table 2 that US estimates are considerably higher as a share of GDP than those for the UK or other EEA countries. Table 3 directly compares UK and US estimates (Soloveichik, 2010), by category. Since only four of the five assets covered by the US Bureau of Economic Analysis are currently capitalised in the UK, column 3 excludes 'miscellaneous artwork' from the US data, and re-calculates the total, so the data can be compared with the UK on a like-for-like basis. .

Table 3: Investment in Artistic Originals, % breakdown (2002)

	US (\$bn) (Soloveichik)	UK (£bn)	US (\$bn) approx, using UK breakdown
Total	\$65.1bn	£2.14bn	\$60.1bn
% of GDP	0.62%	0.20%	0.57%
Asset			
(1) Movies	\$9.8bn	£0.02bn	\$9.8bn
% of Artistic Originals	15.10%	0.94%	16.31%
% of GDP	0.09%	0.002%	0.09%
(2) Music	\$7.6bn	£0.13bn	\$7.6bn
% of Artistic Originals	11.70%	6.07%	12.65%
% of GDP	0.11%	0.012%	0.07%
(3) Books	\$7.1bn	£0.21bn	\$7.1bn
% of Artistic Originals	10.90%	9.81%	11.81%
% of GDP	0.07%	0.020%	0.07%
(4) TV	\$35.6bn	£1.78bn	\$35.6bn
% of Artistic Originals	54.70%	83.17%	59.24%
% of GDP	0.34%	0.165%	0.34%
(5) Misc	\$5bn	-	-
% of Artistic Originals	7.70%	-	-
% of GDP	0.05%	-	-

Note to table: Artistic Originals not currently capitalised in the US. Therefore, as a % of GDP, the above data are not quite on a like-for-like basis. For Column 3, implied US GDP has been adjusted to account for the differing coverage of originals i.e. since miscellaneous artwork is not capitalised in the UK, \$5bn is subtracted from the US aggregates, and the percentages are re-calculated accordingly.

Inspection of investment in each category as a percentage of GDP reveals that UK data for Film, Books and Music are considerably lower than US estimates and suggests potential “missing” investment in the UK data, though the vast size of the US film and music industries will also affect any comparison.

To summarise, the US data provide an interesting comparison with the UK. Official UK estimates are considerably lower than those for the US on both an absolute and relative basis. In particular the UK seems to record very little investment in Film relative to the US. This could reflect the central role of Hollywood in both the funding and production of motion pictures, mis-measurement of UK asset production, or both.



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