



BBC

Index of cultural inflation

25 August 2015

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Mediatique is working with the BBC to provide analysis of inflation trends for the BBC Licence Fee against a basket of comparable goods and services and related Value for Money calculations

- The Licence Fee (LF) remains the core funding mechanism for the BBC, and is set by the Government
- The last LF settlement, agreed in October 2010, saw the LF frozen at £145.50 for six years through to 2017 – as a result, the last price change in the LF occurred in April 2010 when the LF was increased from £142.50 to the frozen rate of £145.50
- The freezing of the LF has occurred at a time of variable pricing trends across the economy, including changes to the pricing models and rates of services that serve as a direct cohort to those provided by the BBC
- As the BBC approaches the expiry of its current Charter and licence fee settlement, the level at which the LF has been and will be set is an important focal point
- Mediatique is working with the BBC to analyse comparative pricing trends across a range of goods and services in order to test two hypotheses:
 1. That other cultural/leisure/communications/media services costs have risen (in some cases well above the level of inflation), while the LF has stayed flat; and
 2. The Value for Money, or VFM (cost per relevant unit) of the LF has risen while the VFM for other services has stayed the same or decreased

Our approach to price comparisons is multi-layered, allowing us to compare the LF to a range of product categories...

- We have analysed a range of economic and product information in order to make direct comparisons of price changes since 2010
- Our approach includes a mixture of macro-economic and micro-economic data (including relevant data compiled by the Office for National Statistics, or ONS), structured in three main areas as we outline opposite
- We have ensured throughout that the data selected and analysed can be tracked robustly over time, on a like-for-like basis – e.g., the exercise can be repeated in future and generate outcomes that are directly comparable/relevant
- This document presents the main comparative outcomes over the model period, and we have also supplied the BBC with a full Excel data set of all pricing outcomes and comparisons

Structure of our analysis

Macro price comparisons (ONS divisions)

Micro price comparisons (Mediatique basket of goods/services)

Micro VFM comparisons (selected goods/services from Mediatique basket)

We have developed our approach in line with some key principles...

Key considerations in scoping our analysis

Comparator goods and services must share common characteristics

- In order for comparisons with the LF to be credible, we have chosen goods and services that share the following characteristics:
 - Linked to leisure time/expenditure
 - Very or relatively widely consumed but discretionary in nature
 - Informed by robust and accepted sources

Comparisons are based on a five-year period

- We have sought to compare pricing trends over a five-year period; as 2015 figures are not yet available, we have compared prices from 2009-2014 (we have ignored 2009 in our VFM analysis, since this year marked a change in BARB's survey methodology)
- All pricing information is based on retail prices, including VAT (where relevant)

Changes in quality and quantity of services have been noted

- The quality and quantity of products and services can contribute to price changes over time – this is particularly the case in cultural and communications markets where producers can raise prices in line with extending the breadth and depth of individual products and services (e.g., wider access to content, increased data limits)
- This is also the case for the LF, where the BBC provides more services in 2015 (e.g., extended catch-up window on iPlayer, more HD channels) than in 2010
- We have sought to make clear where such changes have occurred for specific product categories

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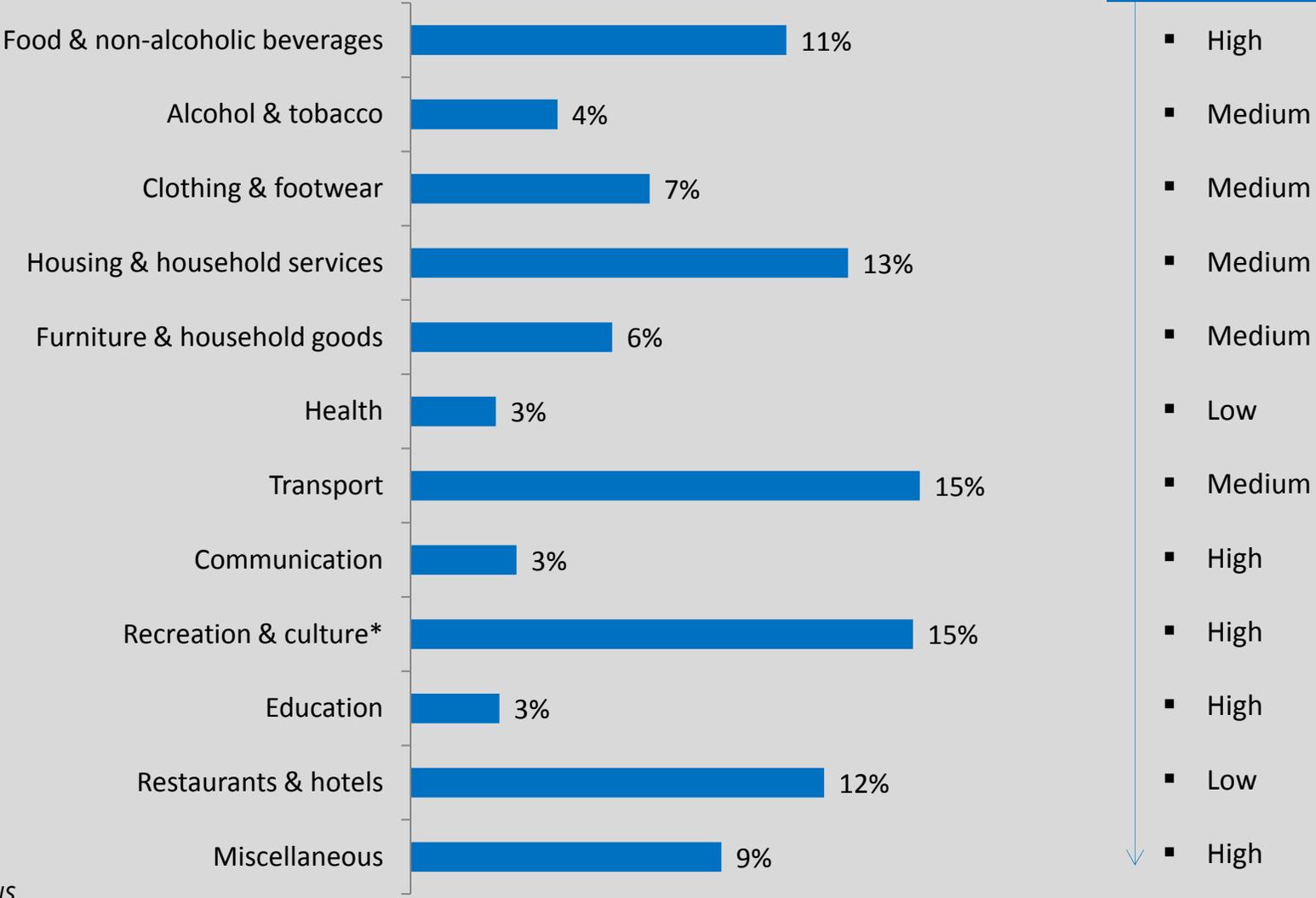
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We have taken ONS macro data for the whole economy as the starting point of our analysis...

Allocation of items to CPI divisions (CPI weight, %)

Observed variation in price changes (2010-14)



*Includes Licence Fee

Source: ONS

...and we have selected a range of detailed indices for direct comparison to the LF...

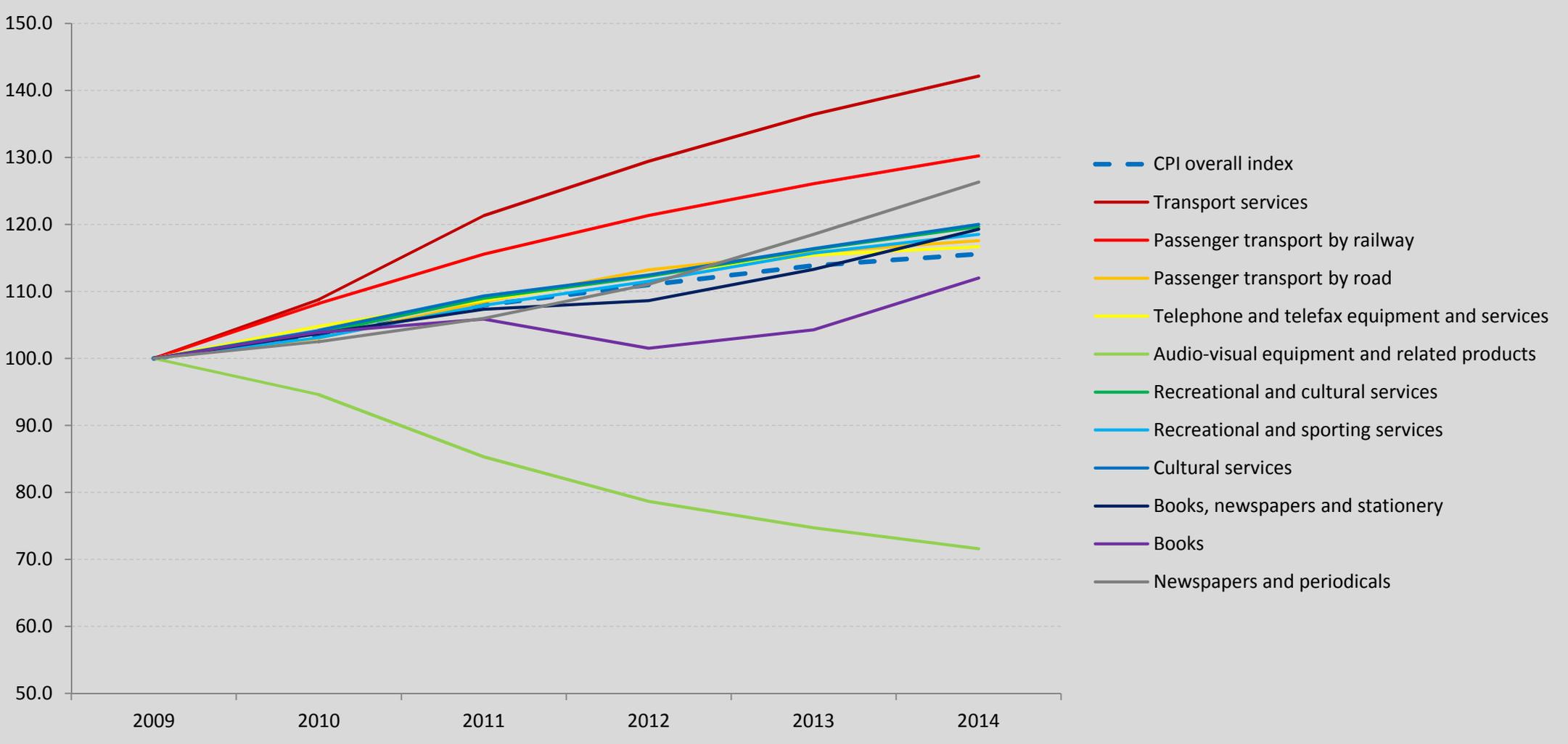
Relevant CPI divisions (and representative items)

- **CPI overall index**
- **Transport services** (passenger transport by railway, road, air, water)
 - **Passenger transport by railway** (UK rail fare, Euro Tunnel fares, London transport fares)
 - **Passenger transport by road** (bus fares, coach fares, minicab fares, taxi fares)
- **Telephone and telefax equipment and services** (handsets, fixed line and mobile charges, internet subscription, bundles)
- **Audi-visual equipment and related products** (DVD player, TV sets, digital TV receiver, DAB radio, cameras, PCs, tablets, CDs, DVDs, music downloads)
- **Recreational and cultural services**
 - **Recreational and sporting services** (leisure evening classes, exercise classes, gym membership, football match admissions, games console online subscriptions)
 - **Cultural services** (DVD rental, SVOD services, digital TV subscriptions, TV licence, digital photo processing, music streaming subscriptions, cinema/theatre/music/other cultural admissions)
- **Books, newspapers and stationery**
 - **Books** (all categories of fiction and non-fiction paperbacks, hardbacks and eBooks)
 - **Newspapers and periodicals** (national dailies, regional titles, Sunday newspapers, periodicals)

Source: ONS

Trend lines in ONS cost categories demonstrate inflationary trends in all relevant categories except audio-visual equipment...

ONS CPI detailed indices, annual average (2009-2014)*



* 2009=100; categories are those listed on the previous slide – includes all goods and services, not just “representative items”
 Source: Mediatique, ONS

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We have developed our own basket of goods and services to track comparative changes in prices on a more granular basis...

- While the CPI detailed indices provide a useful comparison of price trends across broad sectors of the consumer economy, a more granular analysis of the price of specific goods and services (that are comparable to or substitutable with the LF) is crucial to building comprehensible comparisons at the level of individual BBC services, as well as providing the basis for VFM assessments
- For the purposes of this analysis, it is necessary to include items that can be (1) linked to leisure time/expenditure, (2) are widely consumed but discretionary in nature, and (3) the consumption of which can be informed by robust and accepted data sources
- Using the above criteria as guidance, we have identified a number of utilities, goods, and services, which fall into five categories (along with our rationale for each category outlined opposite)*

Product categories included in the Mediatique basket

Transportation

- Transportation is a discretionary expense for virtually all consumers, who make cost/benefit decisions relating to substitutable alternatives that may directly or indirectly have an impact on leisure time

Communications services

- Telephony and broadband services, at near universal adoption levels, demand consumer time and attention and enable access to social, news, and entertainment services

Subscription video services

- Subscription video services from pay-TV and SVOD providers are the services most directly substitutable with BBC television channels in terms of traditional consumption practices and viewing behaviour

Other cultural and recreational services

- Other cultural and recreational services consumed out of the home, such as cinema, live music and sporting events, theatre and tourism, compete with video for the consumer's time and discretionary income

Physical media

- Similarly, physical media represent a traditional alternative to live, streamed, or on-demand media and entertainment services

*Note that these categories are not the same as in the CPI-ONS (although obviously price data associated with these categories are tracked within the CPI)

We have selected specific goods and services in markets that share similar characteristics with the LF, informed by a range of reliable sources

For additional information on how these sources were compiled, refer to the source notes in the Appendix

Category	Indicative metrics	Source(s)
Transportation	Average cost of running a petrol car 100 miles (average of purchase price categories, unweighted)	<i>The Automobile Association</i>
	Average national rail fare index (all distances, weighted by earnings)	<i>Office of Rail and Road</i>
	Average price of all peak and off-peak Oyster single ride journeys (all distances, unweighted)	<i>TFL</i>
Communications services	Average cost of a line rental (Sky, Virgin, BT, TalkTalk, Plusnet, AOL, EE)	<i>Ofcom, providers' websites, broadbandchoices.co.uk</i>
	Average lowest-cost fixed broadband (Sky, Virgin Media, BT, TalkTalk, Plusnet, AOL, EE)*	<i>Ofcom, providers' websites</i>
Subscription video services	Price of Sky Variety Bundle with Sky Movies & Sky Sports (monthly)	<i>Ofcom, Sky</i>
	Price of Virgin TV L package (monthly)	<i>Ofcom, Virgin</i>
	Price of Netflix, Amazon Instant Video, and Now TV (monthly)	<i>Ofcom, providers' websites</i>
Other cultural and recreational services	Average price of a cinema ticket	<i>The Cinema Exhibitors' Association</i>
	Average price of a ticket to a theatre performance across all of London	<i>Society of London Theatre</i>
	Cheapest average season ticket in the Premier League	<i>Sporting Intelligence, BBC, The Guardian</i>
	Average adult admission charges (all attractions)†	<i>VisitEngland</i>
	Price of a ticket to Glastonbury music festival‡	<i>Glastonbury Festivals</i>
Physical media	Average retail price of a printed book**	<i>Nielsen Bookscan</i>
	Average cover price of a daily national newspaper (weighted by circulation)	<i>Company data, press coverage</i>
	Average retail price of a boxed console/PC video game	<i>GfK Chart-Track</i>
	Average retail price of a music album (including digital, weighted by sales)	<i>British Phonographic Industry</i>
	Average retail price of a DVD or similar (incl. DVD, Blu-ray, HD-DVD, UMD, VHS, weighted by sales)	<i>British Video Association</i>

*Data excludes the cost of a line rental; †VisitEngland tracks admission charges for gardens, historic houses/castles, leisure/theme parks, museums/art galleries, steam/heritage railways, visitor/heritage centres, wildlife attractions/zoos, workplaces, and places of worship; ‡Glastonbury is the largest annual music festival in the UK (attended by around 175,000 people);

**We have included only sales of physical, printed copies in our price of books (eBook data unavailable due to cost of an ongoing client relationship with Nielsen)

We have compared the (nominal) prices of comparable goods and services between 2009-2014; note that VAT was raised to 20% from 17.5% in January 2011, leading to a one-off effect

Price (£)	2009	2010	2011	2012	2013	2014
ONS CPI overall index	100.00	103.30	107.95	110.97	113.86	115.56
BBC Licence Fee (annual)*	142.50	145.50	145.50	145.50	145.50	145.50
Average national rail fare index (any distance)	133.50	134.40	142.50	151.30	157.70	161.90
Average price of all peak and off-peak Oyster single ride journeys (any distance)	2.26	2.44	2.55	2.70	2.83	2.85
Average cost of running a petrol car 100 miles (for all purchase prices)	20.87	24.17	27.45	27.59	28.99	23.38
Average cost of a monthly line rental (Sky, Virgin, BT, TalkTalk, Plusnet, AOL, EE)	11.30	12.14	13.09	14.23	14.92	15.62
Average cost of the cheapest monthly fixed broadband subscription	10.10	9.57	9.40	8.99	9.63	10.08
Sky Variety Bundle with Movies & Sports (monthly)*	48.50	51.00	53.00	55.50	57.00	61.00
Virgin TV L with TiVo (monthly)*	16.75	16.75	18.00	20.00	21.50	22.75
Average price of Netflix, Amazon Prime Instant Video, and Now TV (monthly)**	-	-	-	5.66	5.66	6.66
Average price of a cinema ticket	5.44	5.95	6.06	6.37	6.53	6.72
Average price of a ticket to a theatre performance in London†	35.40	36.20	37.97	37.86	40.14	-
Average adult admission charge - All attractions†	6.31	6.72	7.46	7.05	7.30	-
Average price of the cheapest season ticket in the Premier League‡	-	454.15	483.03	496.80	508.35	526.30
Price of a ticket to Glastonbury music festival	175.0	185.0	195.0	event not held	205.0	210.0
Average retail price of a boxed video game (Console and PC)	22.69	24.32	25.63	26.45	29.43	31.40
Average retail price of a printed book	6.44	7.51	7.59	7.49	7.70	7.74
Average cover price of a daily national newspaper (weighted by circulation)	0.53	0.56	0.57	0.62	0.64	0.69
Average retail price of a music album (including digital)†	7.65	7.32	7.02	7.27	7.36	-
Average retail price of a DVD or similar (Blu-ray, HD-DVD, UMD, DVD, VHS)	8.90	9.36	8.89	8.63	8.87	8.84

**We compare cost-per-day in the Value For Money section of this report; for reference, the Licence Fee currently costs 40p a day or just over £12 a month; **SVOD services launched in the UK in 2012; †VisitEngland, SOLT, and BPI data for 2014 to be published later in 2015; ‡Premier League season ticket data unavailable before 2010*

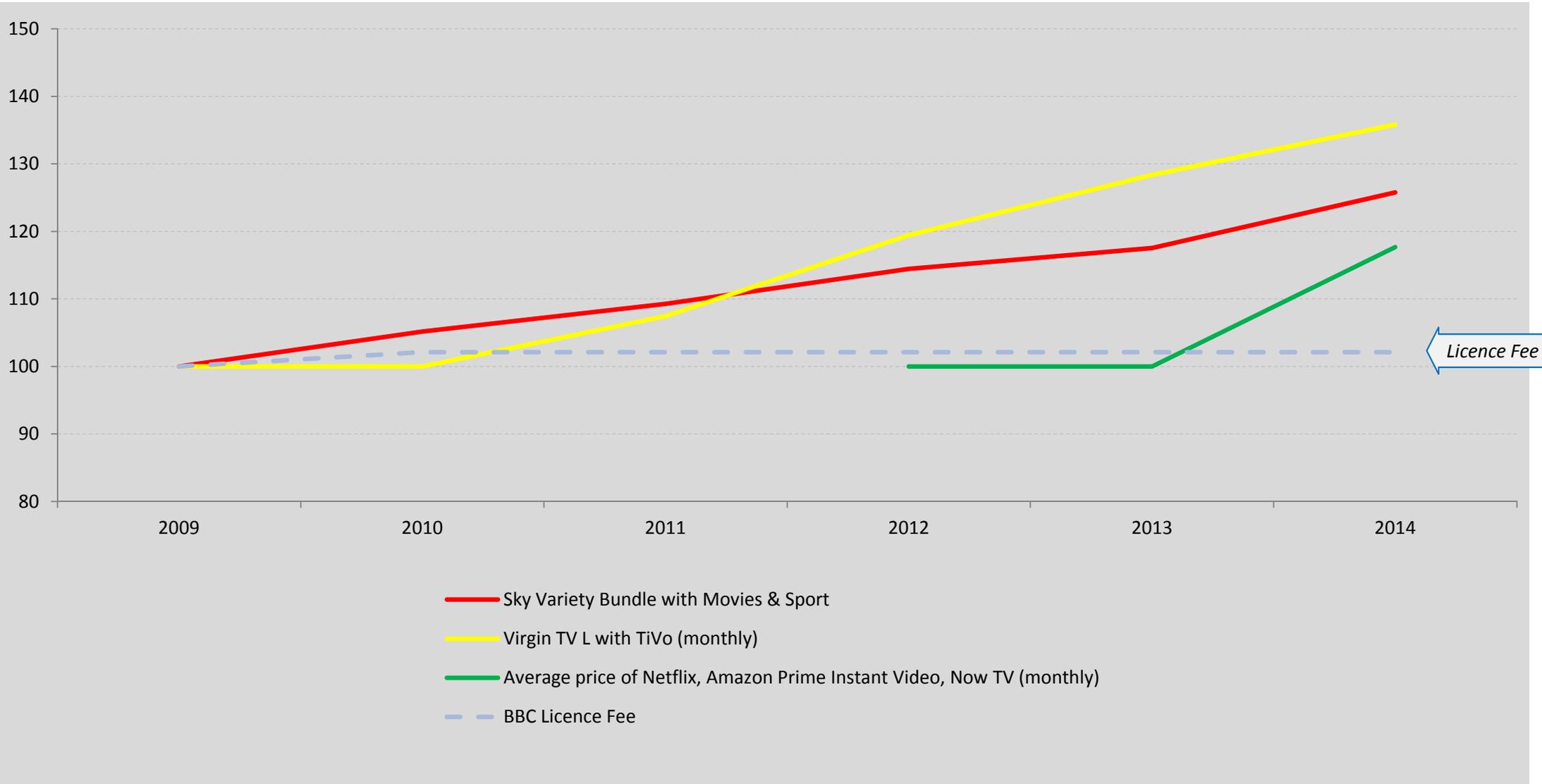
We have also indexed price changes in these goods and services to 2009, to directly compare price changes since that year

Index 2009=100	2009	2010	2011	2012	2013	2014
ONS CPI overall index	100.0	103.3	107.9	111.0	113.9	115.6
BBC Licence Fee (annual)*	100.0	102.1	102.1	102.1	102.1	102.1
Average national rail fare index (any distance)	100.0	100.7	106.7	113.3	118.1	121.3
Average price of all peak and off-peak Oyster single ride journeys (any distance)	100.0	108.0	113.0	119.6	125.3	126.0
Average cost of running a petrol car 100 miles (for all purchase prices)	100.0	115.8	131.5	132.2	138.9	112.0
Average cost of a monthly line rental (Sky, Virgin, BT, TalkTalk, Plusnet, AOL, EE)	100.0	107.4	115.8	125.9	132.0	138.2
Average cost of the cheapest monthly fixed broadband subscription	100.0	94.8	93.1	89.0	95.4	99.9
Sky Variety Bundle with Movies & Sports (monthly)*	100.0	105.2	109.3	114.4	117.5	125.8
Virgin TV L with TiVo (monthly)*	100.0	100.0	107.5	119.4	128.4	135.8
Average price of Netflix, Amazon Prime Instant Video, and Now TV (monthly)**	-	-	-	100.0	100.0	117.7
Average price of a cinema ticket	100.0	109.4	111.4	117.1	120.0	123.5
Average price of a ticket to a theatre performance in London†	100.0	102.3	107.3	106.9	113.4	-
Average adult admission charge - All attractions†	100.0	106.6	118.3	111.8	115.8	-
Average price of the cheapest season ticket in the Premier League‡	-	100.0	106.4	109.4	111.9	115.9
Price of a ticket to Glastonbury music festival	100.0	105.7	111.4	event not held	117.1	120.0
Average retail price of a boxed video game (Console and PC)	100.0	107.2	113.0	116.6	129.7	138.4
Average retail price of a printed book	100.0	116.6	117.9	116.3	119.6	120.2
Average cover price of a daily national newspaper (weighted by circulation)	100.0	104.5	106.3	116.0	120.3	128.5
Average retail price of a music album (including digital)†	100.0	95.7	91.8	95.0	96.2	-
Average retail price of a DVD or similar (Blu-ray, HD-DVD, UMD, DVD, VHS)	100.0	105.2	99.9	97.0	99.7	99.3

*We compare cost-per-day in the Value For Money section of this report; for reference, the Licence Fee currently costs 40p a day or just over £12 a month; **SVOD services launched in the UK in 2012; †VisitEngland, SOLT, and BPI data for 2014 to be published later in 2015; ‡Premier League season ticket data unavailable before 2010

The LF has stayed flat compared to pay-TV and SVOD services which are the most substitutable with the BBC...

Indices of all comparable goods and services (2009-2014)*

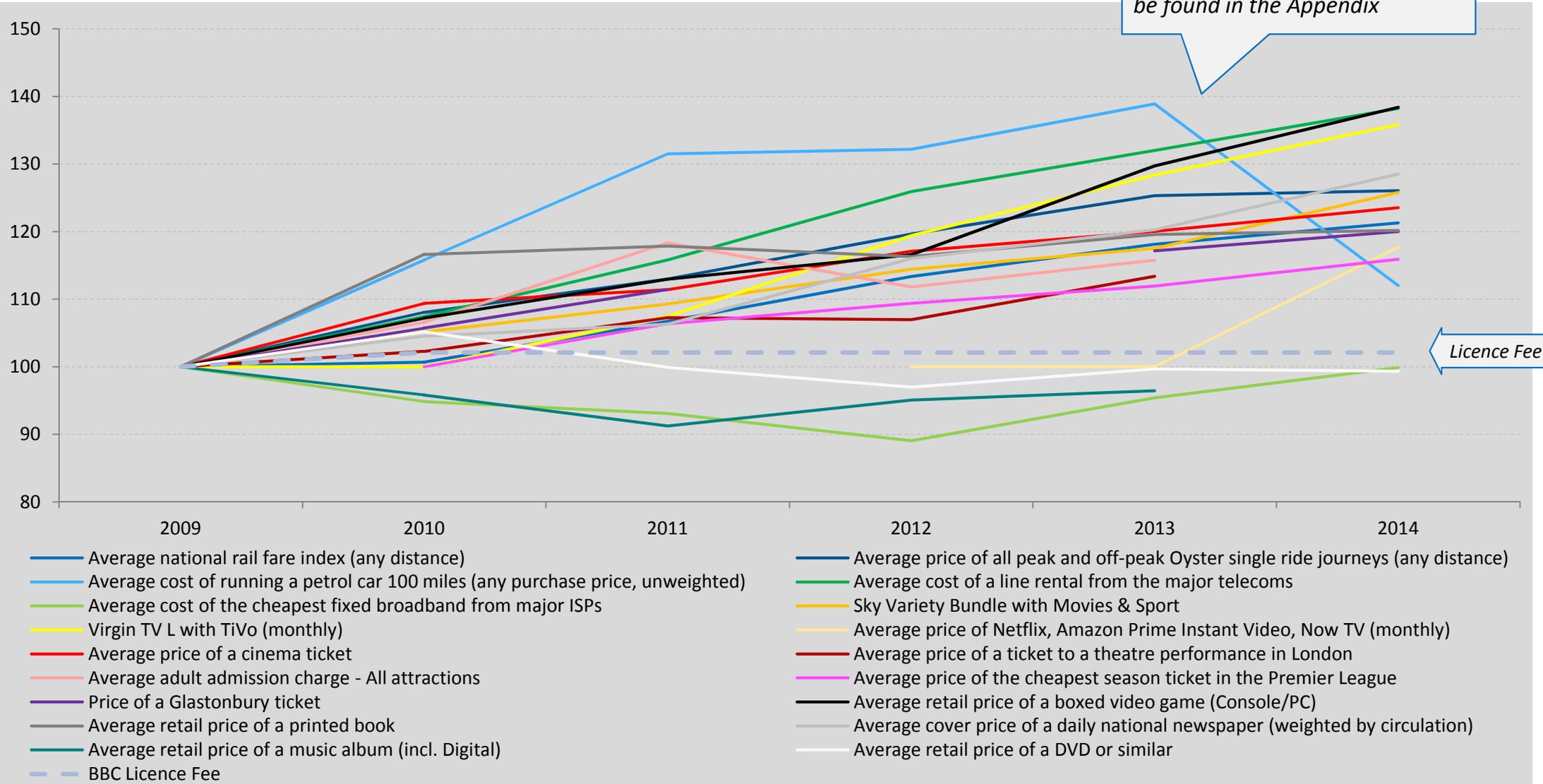


* 2009=100. Source: Mediatique; note that we exclude telephony and broadband costs in the case of Sky and Virgin customers taking a bundle

The general trend across all goods and services is a gradual increase in prices since 2009, with CDs, home video, and basic broadband the only exceptions...

Indices of all comparable goods and services (2009-2014)*

A closer look at price changes for individual goods and services can be found in the Appendix

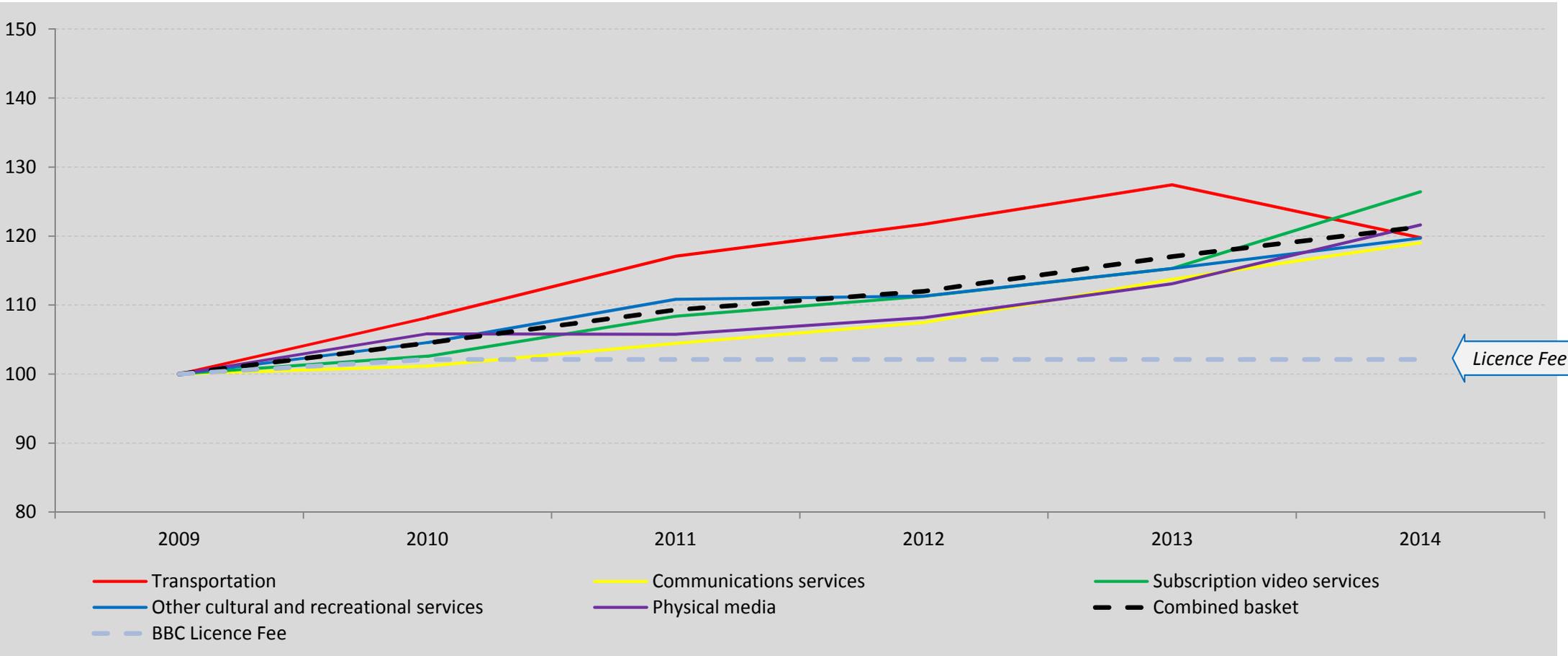


Licence Fee

* 2009=100. Source: Mediatique

A combined basket of goods and services (an average of price changes among the five categories) experienced a 21% increase, while the Licence Fee increased by only 2%...

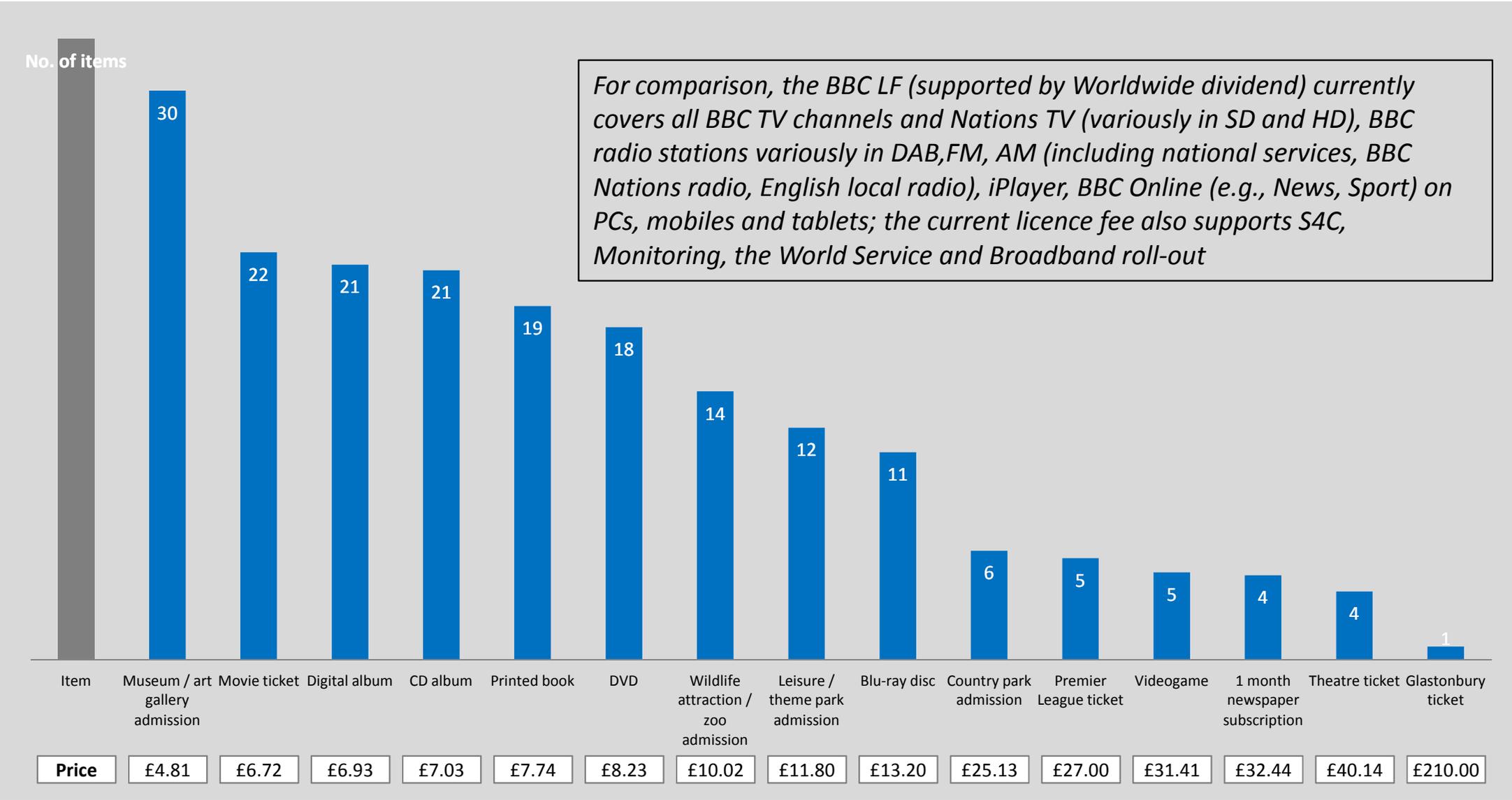
Indices of goods and services categories (2009-2014)*



* 2009=100; Index values for each category are calculated as the average of all item indices in the category (weighted equally) each year; for example, the price change in the transportation index is the average price change across each of the rail, tube, and petrol car indices; the "Combined Basket" is an average of all five category indices (weighted equally); ideally, it may be appropriate to weight individual items or categories proportionate to their consumer impact (in terms of time, attention, or spending); however, this weighting is not publicly available; the BBC Licence Fee increased from £142.50 to £145.50 in 2010, with no changes thereafter. Note that the five categories used here make up c33% of the ONS CPI, with "communications" weighted at 3% and "leisure and culture" and "transportation" each at 15%.

The Licence Fee, with its breadth of TV, radio, and news content, compares favourably to the cost of one-off items such as tickets and physical media at retail prices

Number of items that can be purchased for the same price as the Licence Fee



*1 month newspaper subscription is the average monthly cost of a 7 day print subscription among the top 10 daily national newspapers (i.e., not the cost of 30 individual newspapers purchased at the cover price); The cost of a Premier League ticket is the average cost of a single match-day ticket

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The list of services for which BBC services could substitute is by definition long; however, truly persuasive value-for-money calculations are more limited

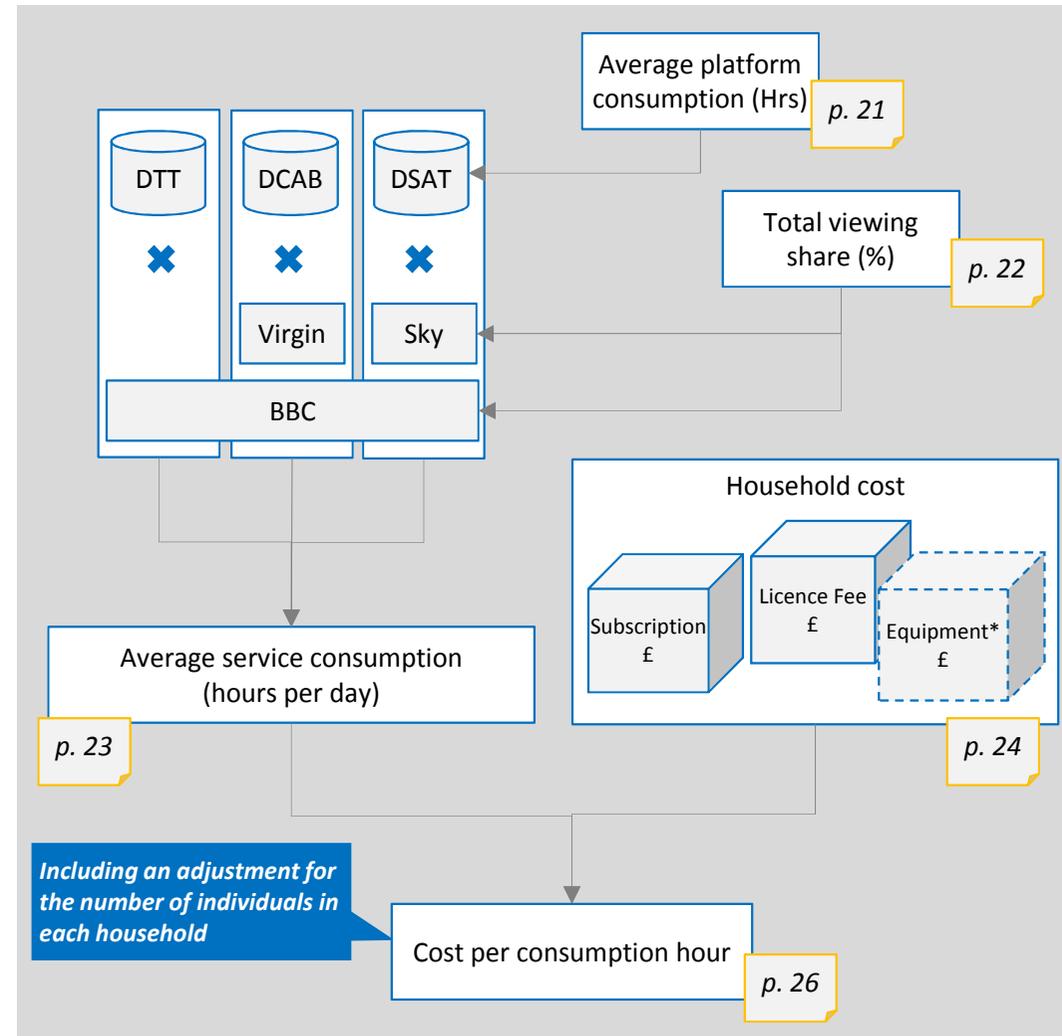
Determination of appropriate services for a VfM comparison

- The only persuasive VFM comparison can be between substitutable goods and services where reliable data on time spent and cost of access is readily available and where the relationship can be quantified – any qualitative analysis is beyond our scope
- For example, time spent reading a physical or digital book is difficult to compare with time watching scheduled TV, given both the differences in individual consumption times per unit (book or digital download) and lack of data on overall time spent reading compared to costs of digital and physical books
- Equally, attempting to compare watching a match in the stadium against watching a BBC programme is likewise fraught, given lack of reliable time spent data (aside from match duration) and the full costs (e.g., ticket, transport)
- We also considered substitutability between, for example, a radio concert and attendance at a concert hall; again, the experiences are considerably different and reliable data to capture both an access cost and a time spent engagement metric are unavailable
- We started with a long list of cultural products and services, including football matches, concerts, jukebox services, books
- We considered whether there was data on both sides of the equation: the cost of access and versus the time spent
- We also asked whether the services appeared substitutable for BBC goods and services on any commonsensical basis; for this analysis, we have only included truly substitutable video services (A/V in the home) – although we provide “all hours” comparisons of BBC consumption across radio and online (where the data includes, by definition, out of home – e.g., radio listening in cars)
- As a result, the two key reference points for substitutable services, for which data is robustly and readily available, are both in-home video propositions – SVOD (for which Netflix is our proxy) and pay TV (using Sky and Virgin TV)
- Viewing is based on share of viewing to relevant channels behind a pay wall and consumption data on SVOD from multiple sources (including GfK for the BBC); revenues are based on our own ARPU calculations for pay TV and published subscription rates for SVOD

In order to compare the relative Value For Money of the BBC Licence Fee and other substitutable video services, we have developed a metric to reflect cost and consumption time...

- For this section, we have developed a quantitative approach to assessing VFM based on the average consumption time that different substitutable services offer
- We compared pay TV and SVOD services as per our discussion on the previous page
- In practice, restrictions on leisure time and competition with other leisure activities limit the amount of video content that can be consumed by a single person
- Therefore, *average consumption time* is our metric for evaluating usage levels between video services (with time being the limited resource)
- We then compared cost per unit of time and relative value for money between services of varying price (using pay TV ARPU, SVOD subscription costs and the Licence Fee as price indicators)
- We summarise opposite the conversion from total platform consumption time to cost-per-hour of service consumed, using channel viewing shares from BARB

Calculation of cost per consumption hour (+ page reference)

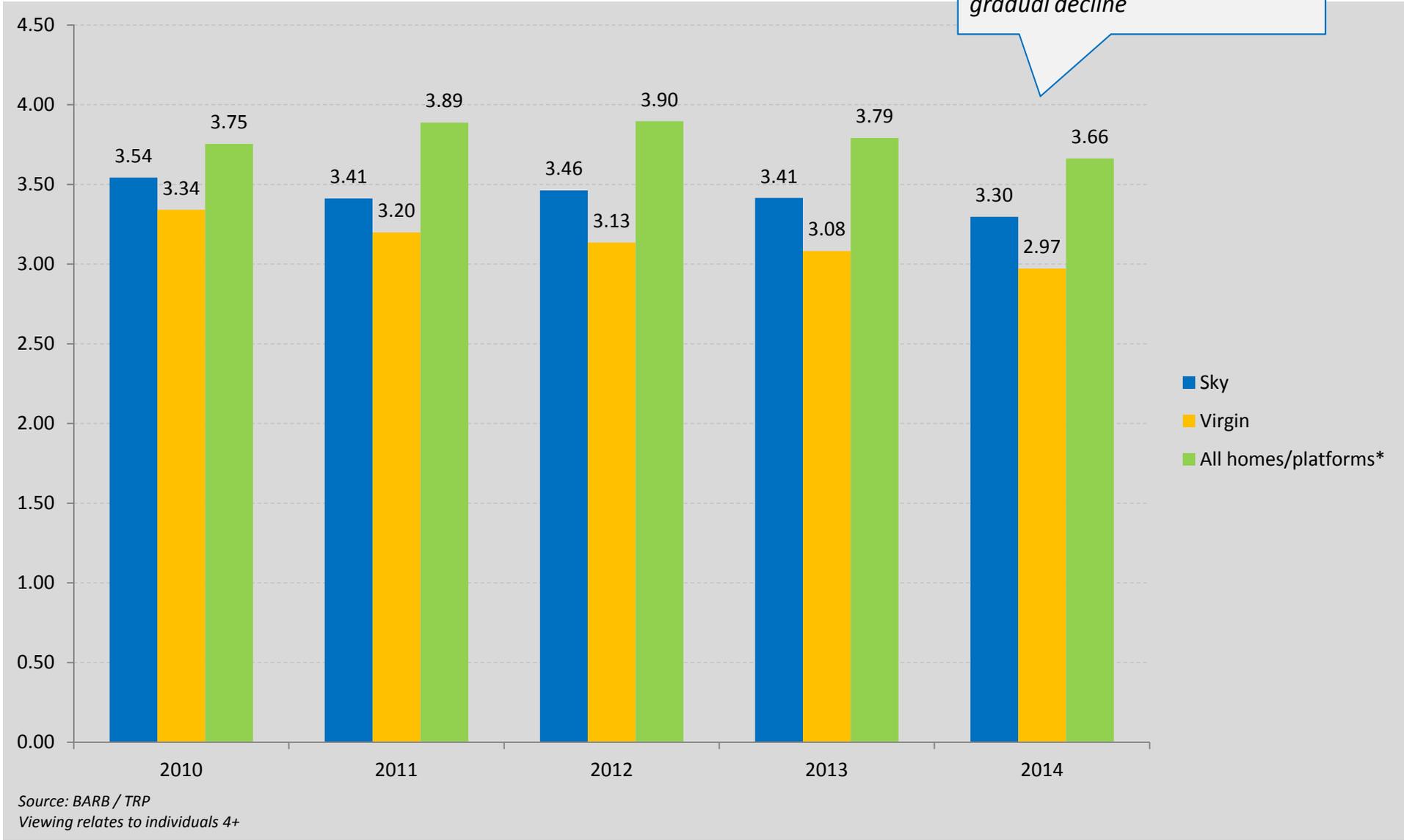


*We have not included the cost of equipment in our cost per consumption hour calculation, however we have included a comparison of the incremental effect of different substitutable video services in the Appendix

We analysed the average number of television hours consumed by viewers on each relevant platform...

Average hours of TV viewed per day, by platform* (2010-2014)

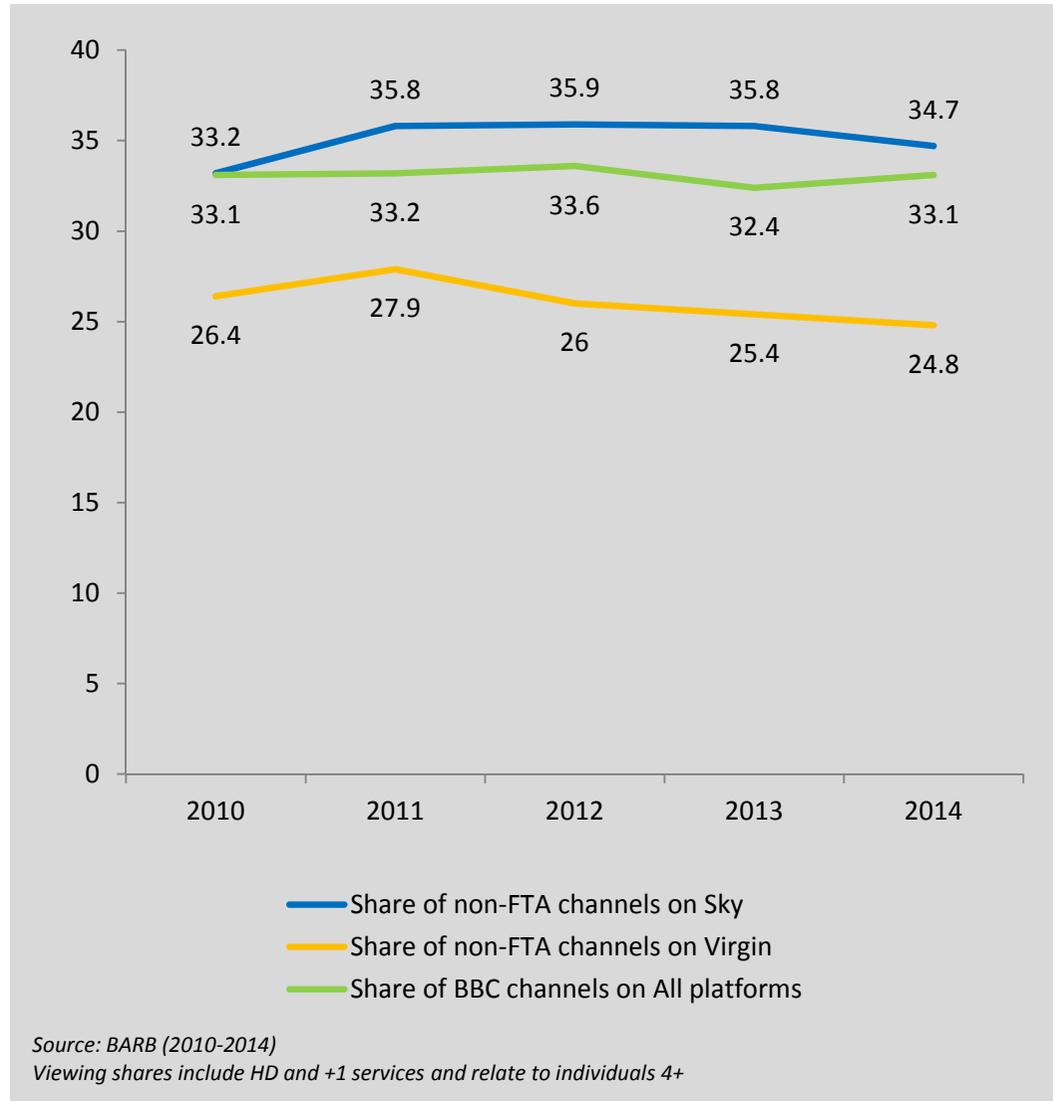
Average total TV viewing peaked in 2012, and is now in a period of gradual decline



We then calculated the proportion of viewing attributable to the video service using the total viewing share of all channels available (excluding Free-to-Air channels)...

- In order to compare the average consumption time of services across different platforms, we had to identify the amount of viewing that is provided via the relevant service (i.e., channel viewing on the relevant pay platform less viewing on that platform of those channels also available on free-to-air platforms)
- We assumed that the channels available through each service claim a proportion of total viewing equivalent to their viewing shares published by BARB (which vary by platform)
- The total viewing share of each service is therefore the sum of all viewing shares of all channels available through the service, excluding the viewing of channels that are also available for free on other platforms such as Freesat and Freeview (see chart opposite). In 2014, for example:
 - The BBC portfolio of channels received 33.1% of viewing across all platforms
 - Pay channels on Virgin received 24.8% of viewing on Virgin
 - Pay channels on Sky received 34.7% of viewing on Sky satellite

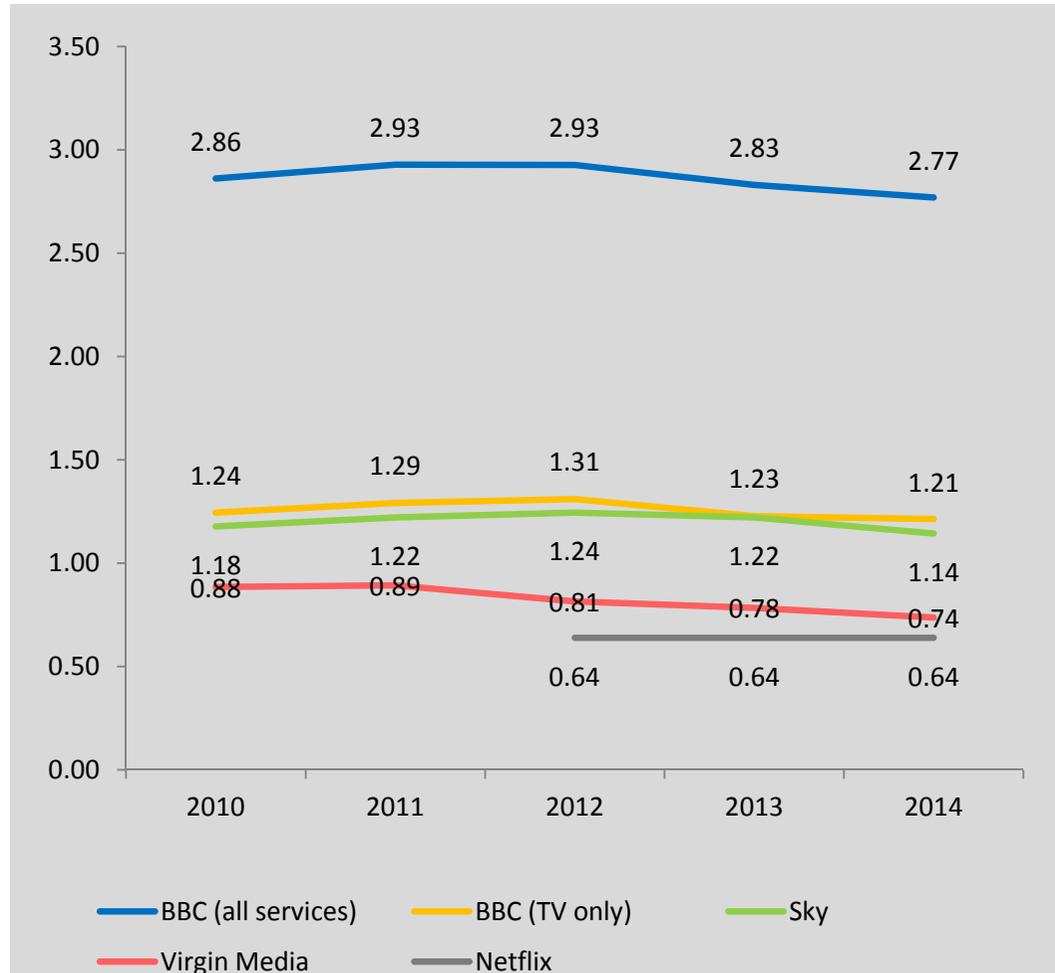
Total viewing share of channels in each service, by platform



Average consumption of the service is therefore the product of average platform consumption time for each year and the total full year viewing share of all available non-FTA channels...

- BBC's average consumption hours are based on average TV viewing in all homes, across all platforms, while Sky and Virgin are based on consumption of non-FTA channels on Sky and Virgin respectively. In 2014, for example:
 - The average daily consumption of BBC portfolio channels is 33.1% of 3.66 total hours across all platforms, or 1.21 hours (1 hour 13 minutes)
 - The average daily consumption of Virgin pay is 24.8% of 2.97 hours total Virgin hours, or 0.74 hours (44 minutes)
 - The average daily consumption of Sky pay channels is 34.7% of 3.3 total Sky satellite hours, or 1.41 hours (1 hour 25 minutes)
- Netflix consumption time is based on survey data, confirmed by Nielsen and GfK, that estimates the amount of time spent watching video on Netflix by users of the service to be about 38 minutes per day
- BBC (all services) includes radio and online consumption, based on RAJAR and CMI data (a breakdown of total BBC consumption can be found in the Appendix)

Average consumption of services, hrs per day (2010-2014)



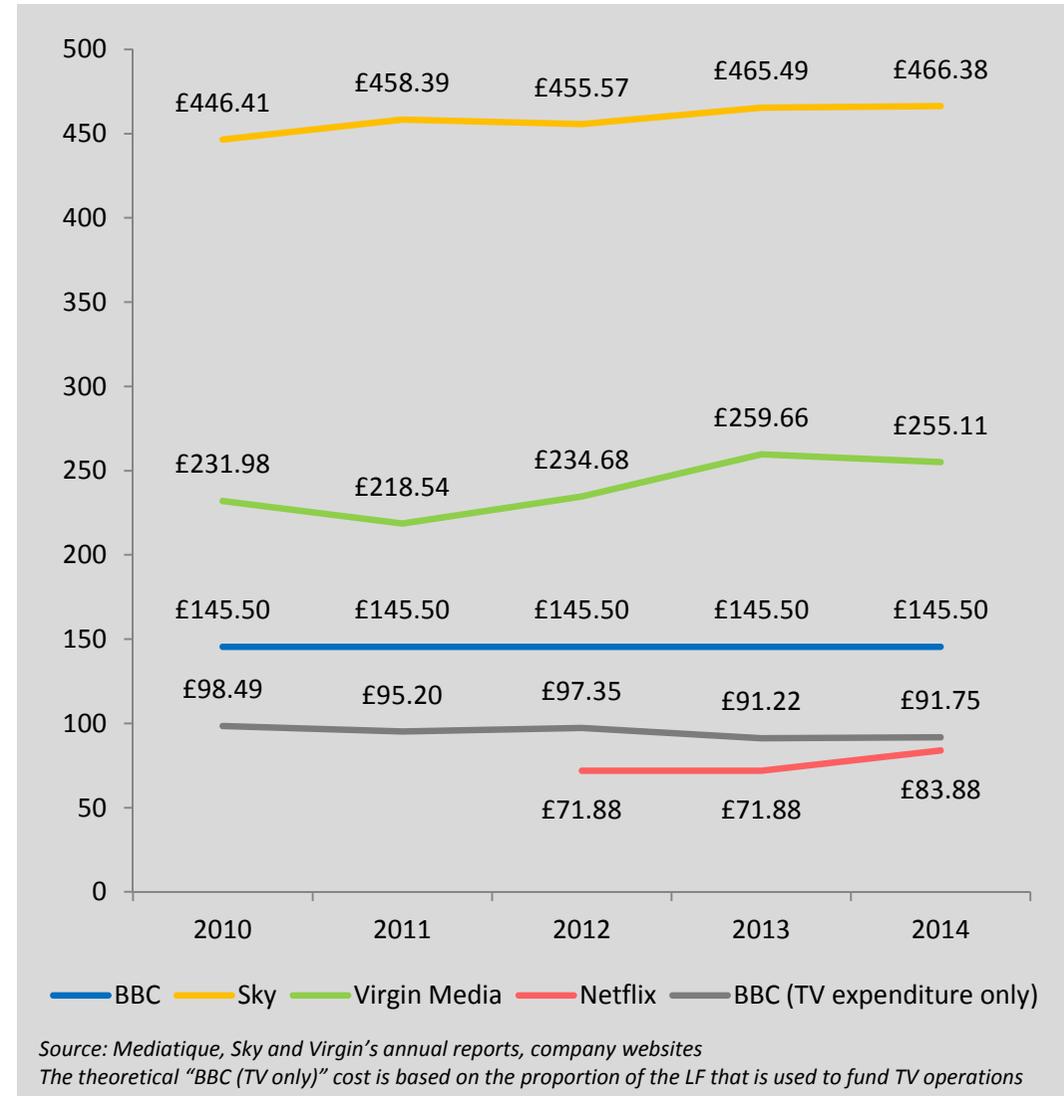
Source: Mediatique

BBC (all services) includes consumption of BBC portfolio channels, iPlayer, radio, and online, whereas BBC (TV only) only includes viewing of the portfolio channels

We then looked at the average household cost of each service, and adjusted consumption to account for the number of individuals in each home...

- To determine the average subscription cost for a Sky TV household, we took ARPU published by Sky each year, removed non-TV subscribers, and subtracted all non-TV revenue (such as telephony and broadband)*
- The average household cost of a Virgin Media TV subscription is total subscription TV revenue divided by the number of television subscribers (this data is published annually in Virgin's financial reports from 2011**)
 - For both Sky and Virgin, this adjusts for the incidence of "bundling" of services typifying both subscriber sets
- The average BBC household cost is the cost of the LF (or where indicated the proportion of the LF spent on TV—an explanation of this calculation is included in the Appendix); the average Netflix household cost is the cost of a basic subscription with HD and multi-user support
- Since subscription video services are shared in the household, we also increased consumption to account for the number of individuals (this is provided overleaf)

Household cost per year***, £ (2010-2014)



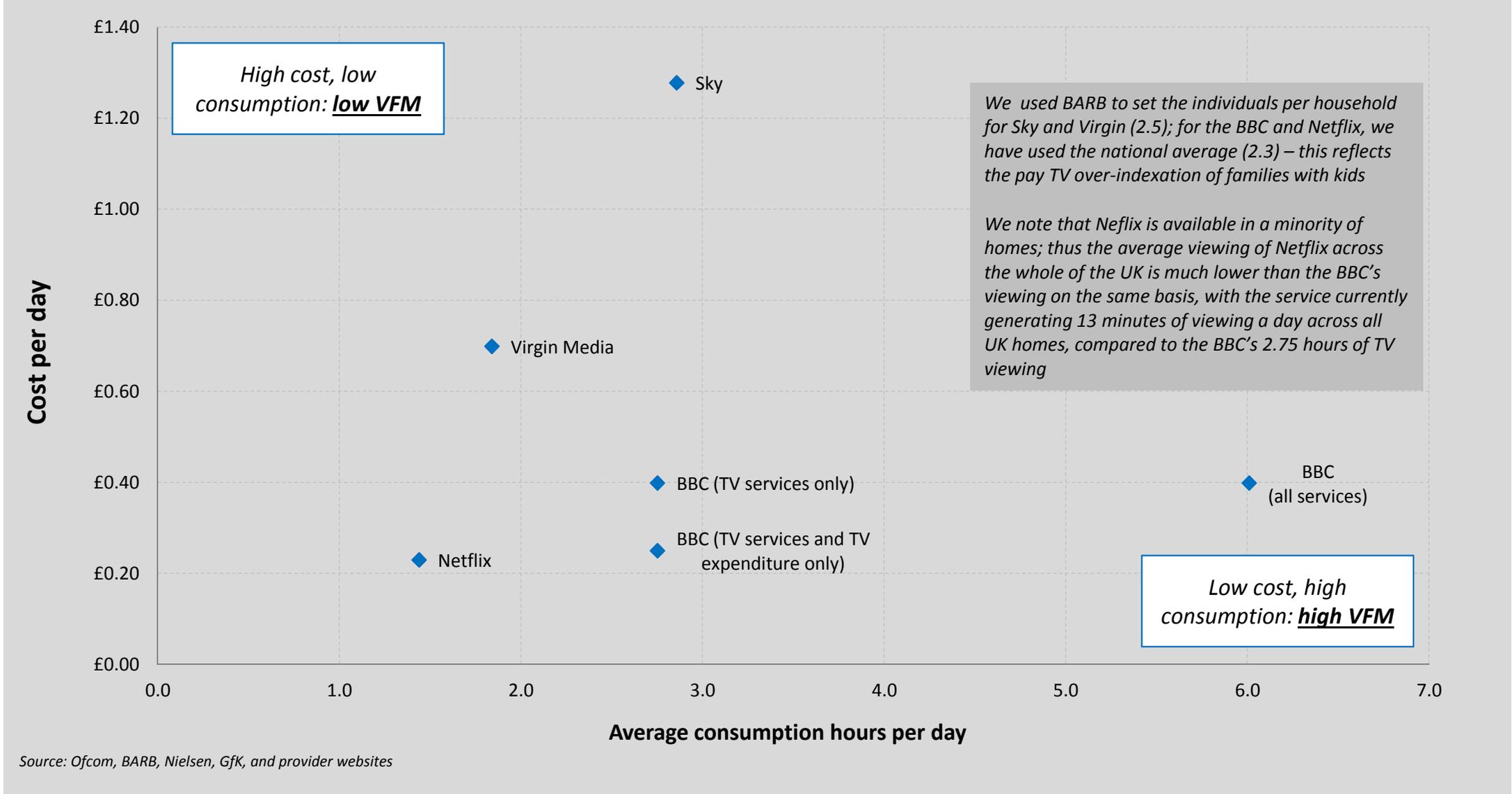
*For the homes that have broadband, we subtracted £7.50 per month plus the cost of the line rental; for homes with telephony we subtracted only the cost of a line rental

**Data not provided for 2010; we imputed the pay TV revenue for this year based on observed constant percentage of total cable revenue associated with pay TV

***As the licence fee has been frozen virtually for the entire period, we have not had to calendarise to account for the difference between financial and calendar years.

Generally, we expect the cost of a service to increase with average consumption time (although this is not a perfect relationship)...

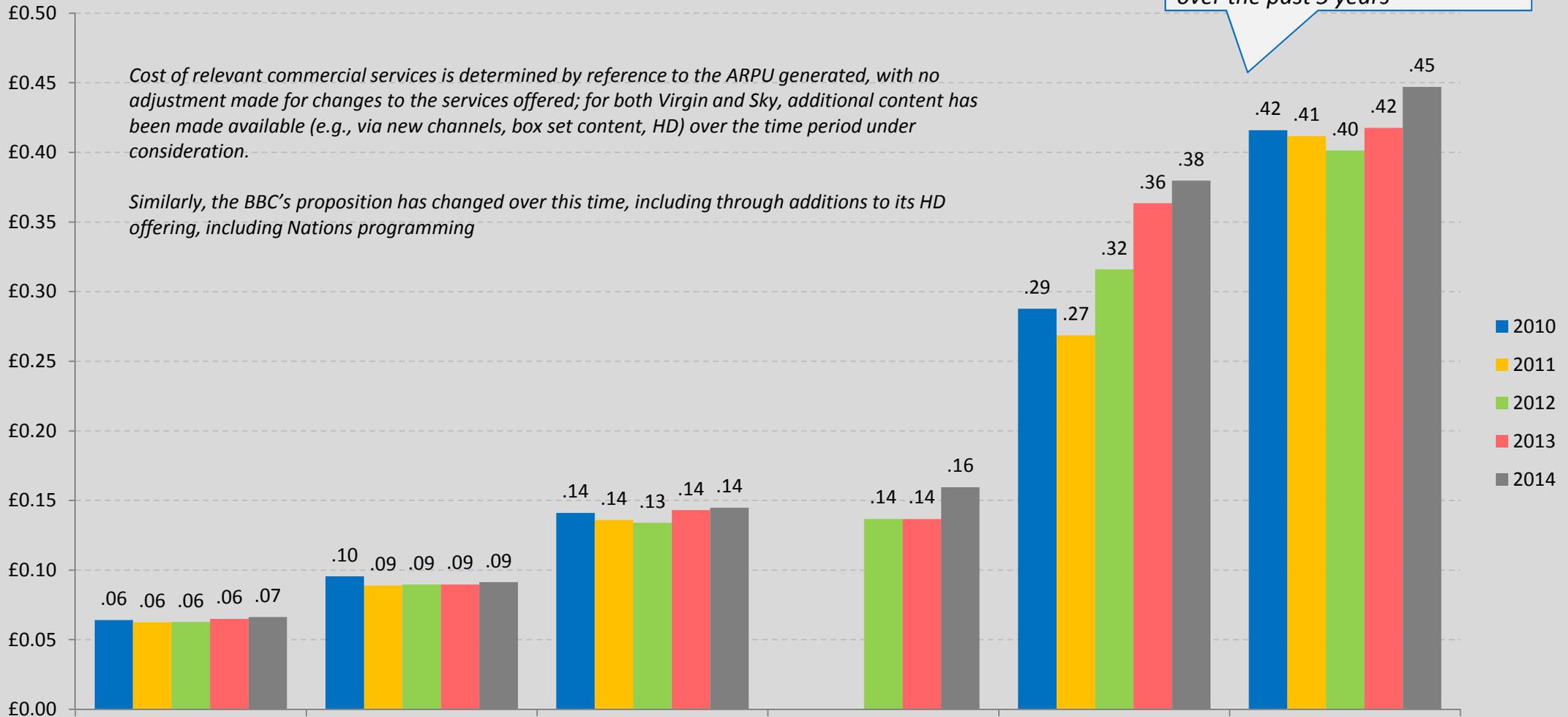
Household cost and average consumption hours per day



Comparing cost per hour of content consumed over the period of tracked prices provides the most accurate assessment of VFM...

Household cost per hour of content consumed (2010-2014)

While the BBC's cost per hour has stayed roughly the same, Virgin, Sky, and Netflix have all increased over the past 5 years



Cost of relevant commercial services is determined by reference to the ARPU generated, with no adjustment made for changes to the services offered; for both Virgin and Sky, additional content has been made available (e.g., via new channels, box set content, HD) over the time period under consideration.

Similarly, the BBC's proposition has changed over this time, including through additions to its HD offering, including Nations programming

Source: Mediatique, Ofcom, BARB, Nielsen, GfK, and provider websites

Note that we have used the same total viewing shares (FY 2014) for each year, although the specific channels included in each package and their respective viewing shares continue to change over time

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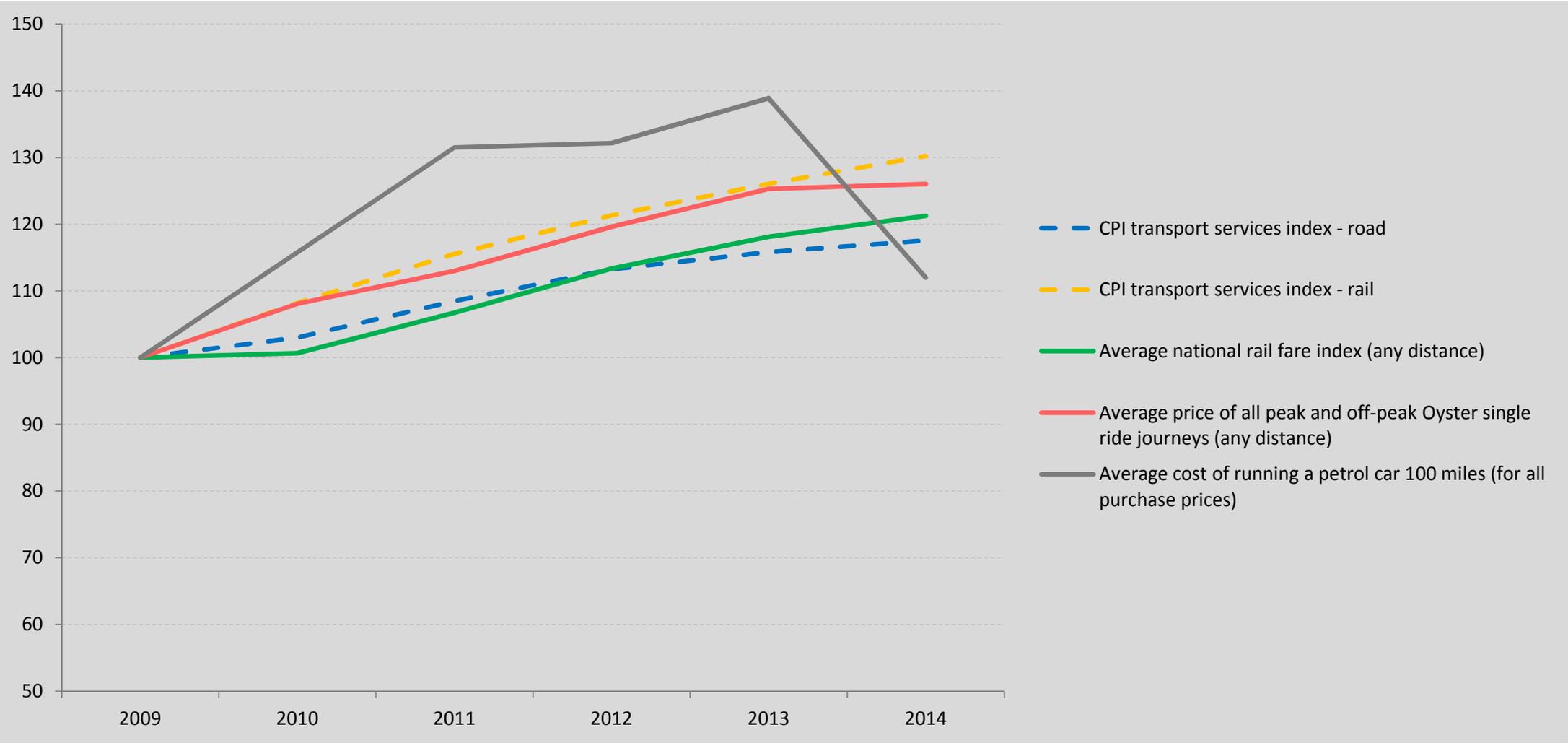
The LF has been frozen during a time of consistent inflation among comparable goods and services – this has confirmed the comparative value for money of the BBC's services

- The last LF settlement, agreed in October 2010, saw the LF frozen at £145.50 for six years through to 2017 – as a result, the last price change in the LF occurred in April 2010 when the LF was increased from £142.50 to the frozen rate of £145.50
- The freezing of the LF has occurred at a time of general price increases in the UK, including sharp increases in the prices of services that serve as a direct cohort to those provided by the BBC
- For the UK as a whole, the CPI general index registered price rises of 15% between 2009 and 2014. Among specific CPI divisions, the prices of transport services have increased by 42%, cultural services (including TV subscriptions) by 20% and telephony by 17%; the only directly relevant division to have fallen is audio-visual equipment which has seen prices fall by 28%
- We compared the prices of a bespoke basket of goods and services to track changes in prices on a more granular basis. We compared specific goods and services among transportation, communications services, subscription video services, other cultural and recreational services, and physical media – all of which share similar characteristics with the LF
- The prices of comparable products increased in the range of 10-40% between 2009-2014 – this compares with the LF, whose price increased by 2% over the same period (we exclude the outliers of fixed broadband subscriptions and retail prices of physical media – music albums, video discs/media)
- To compare the value for money of the LF and other substitutable goods and services, we looked at average consumption time (as a discrete and comparable indication of consumer value). On the basis of cost per hour of content consumed, the BBC's TV channels stayed flat between 2010 and 2014 at 14p, while Virgin and Sky both increased: Sky was up by 7% from 42p to 45p, and Virgin rose by 31%, from 29p to 38p

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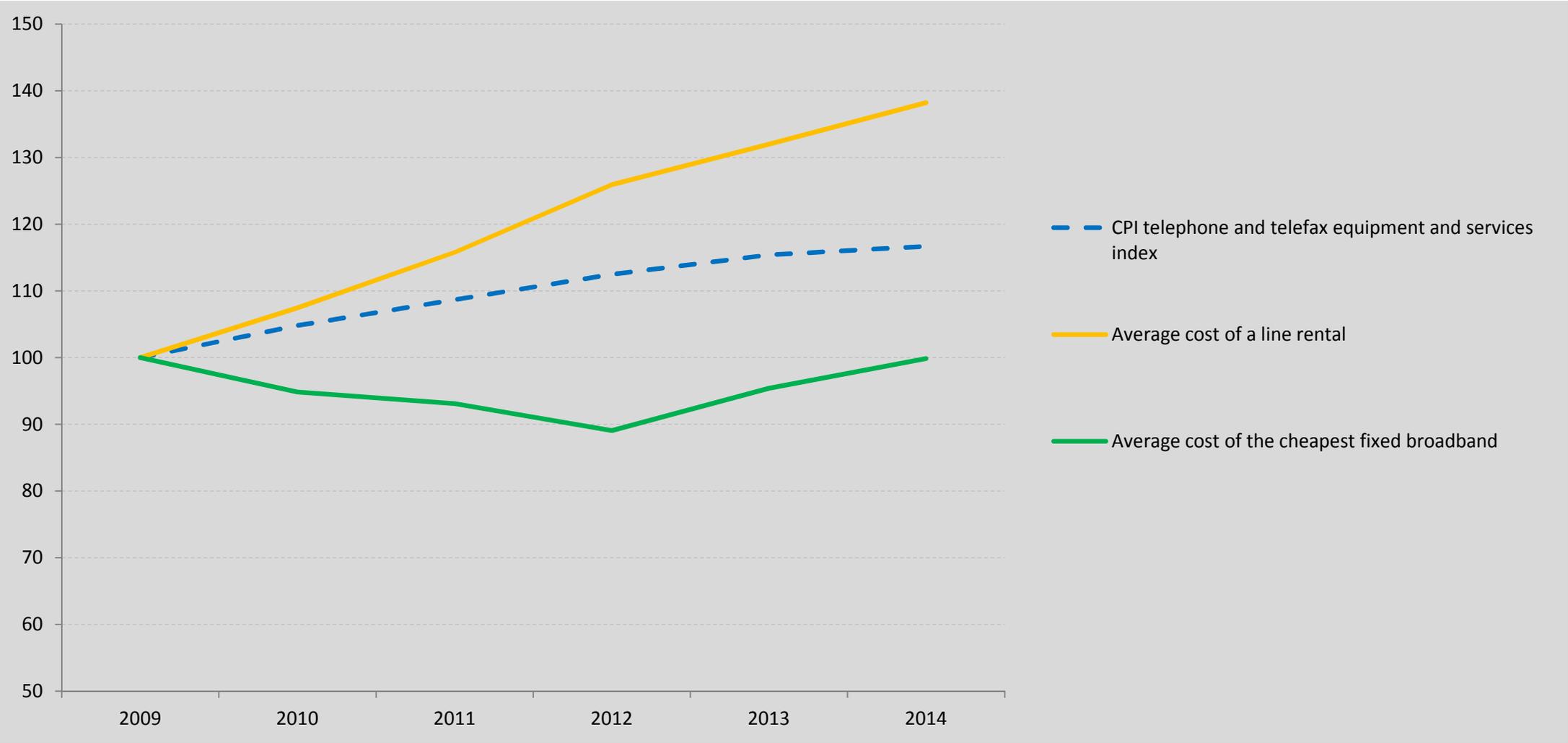
Comparable goods and services - Transportation

Transportation (nominal prices, 2009-2014)



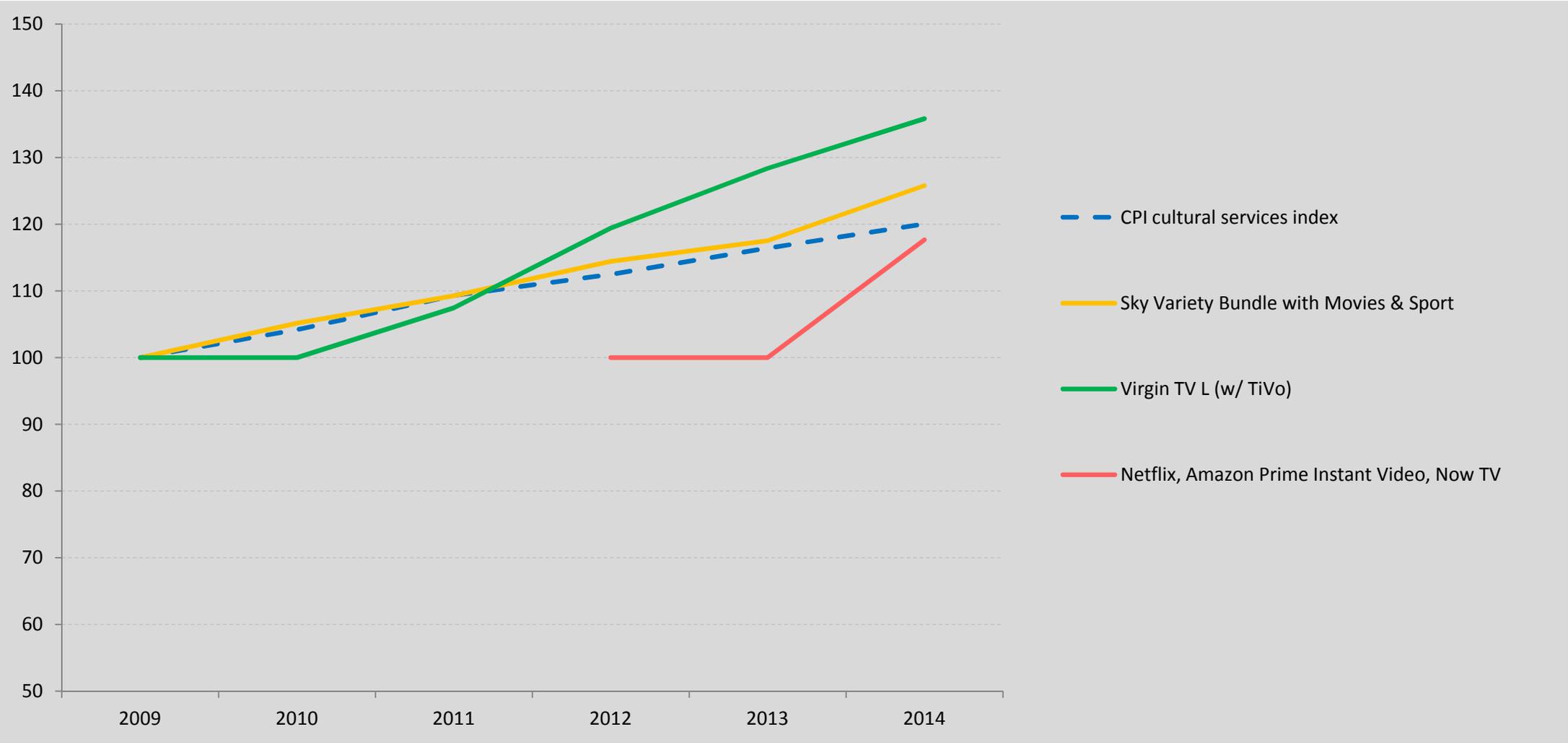
* 2009=100

Communication services (nominal prices, 2009-2014)



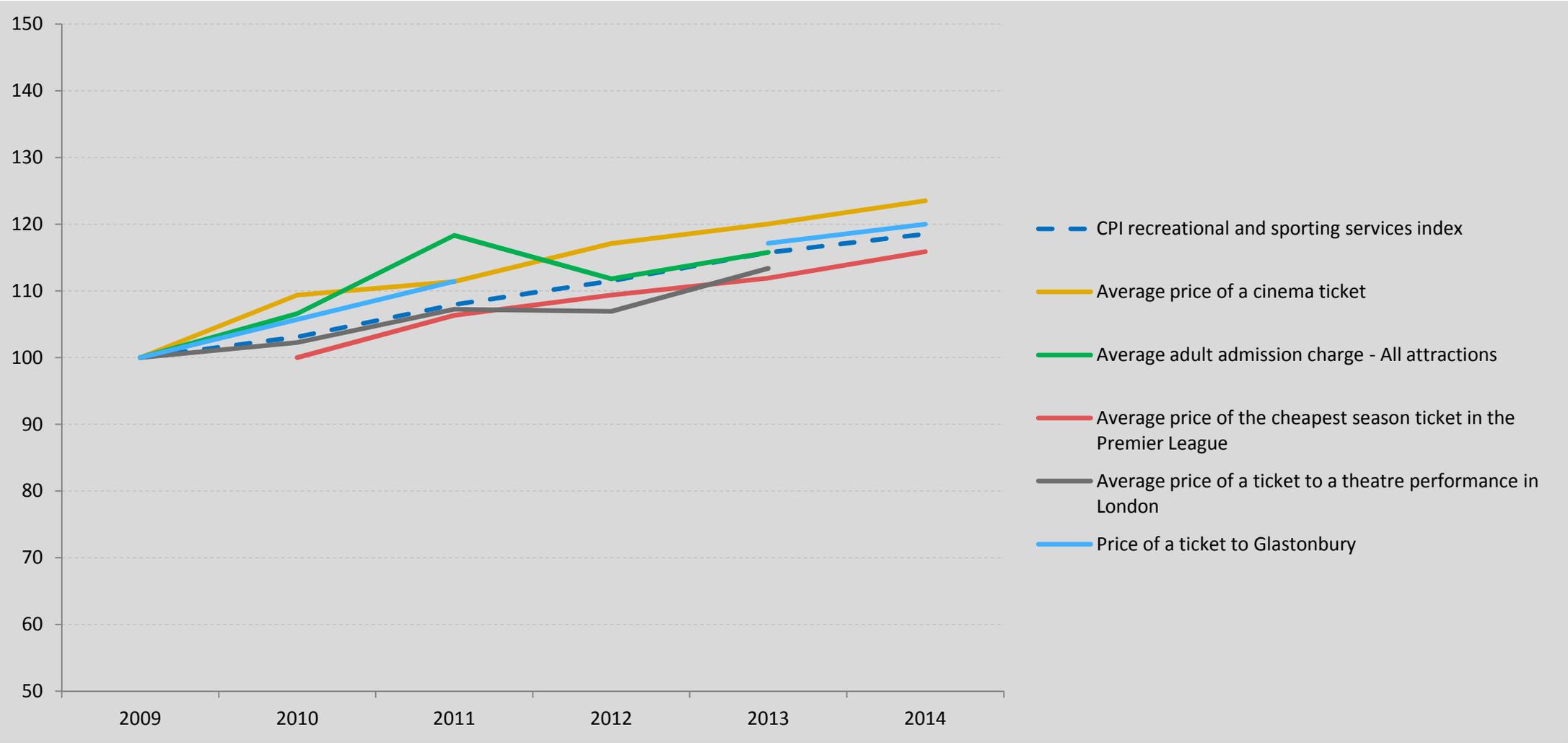
* 2009=100

Video subscription services (nominal prices, 2009-2014)



* 2009=100

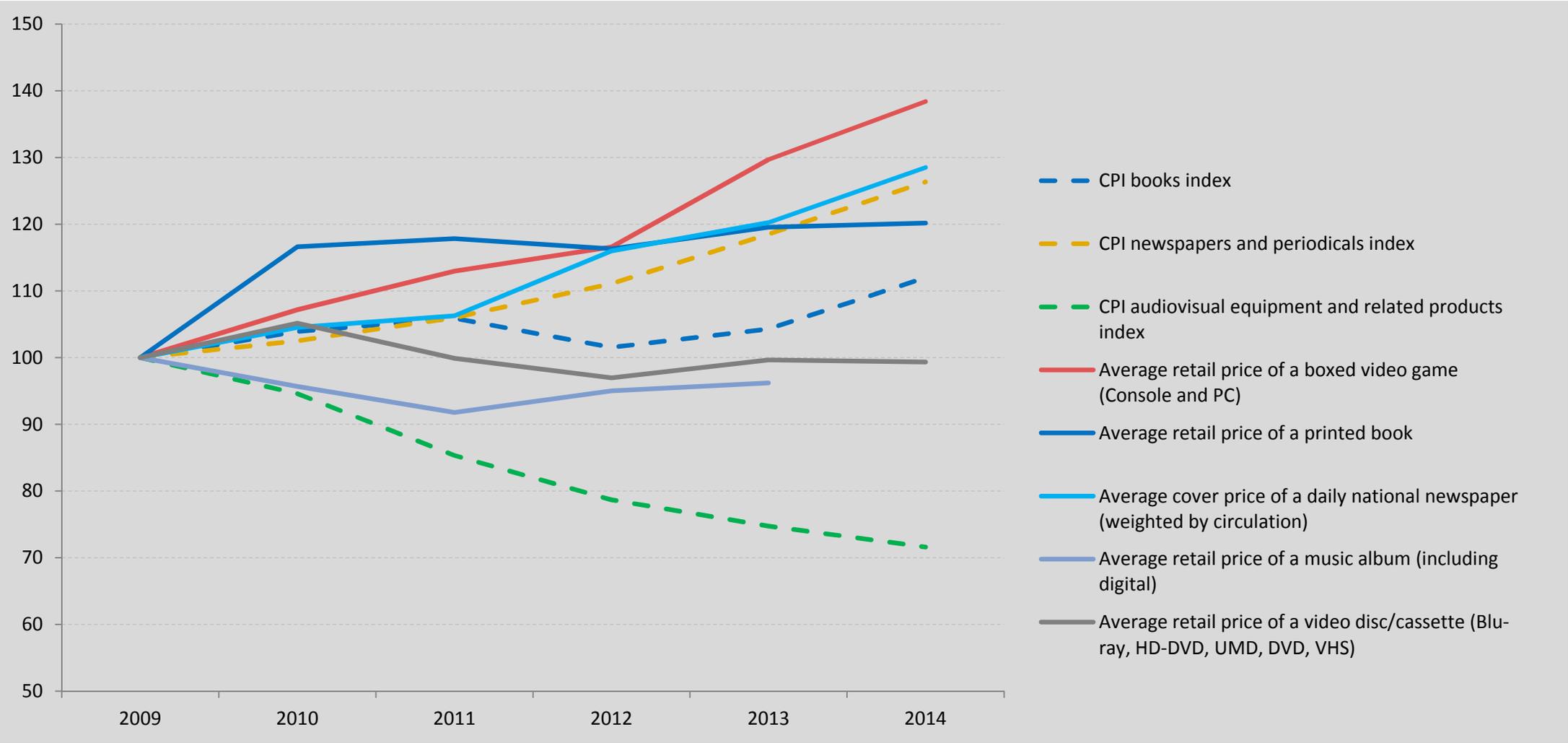
Other cultural and recreational services (nominal prices, 2009-2014)



* 2009=100

Comparable goods and services - Physical media

Physical media (nominal prices, 2009-2014)



* 2009=100

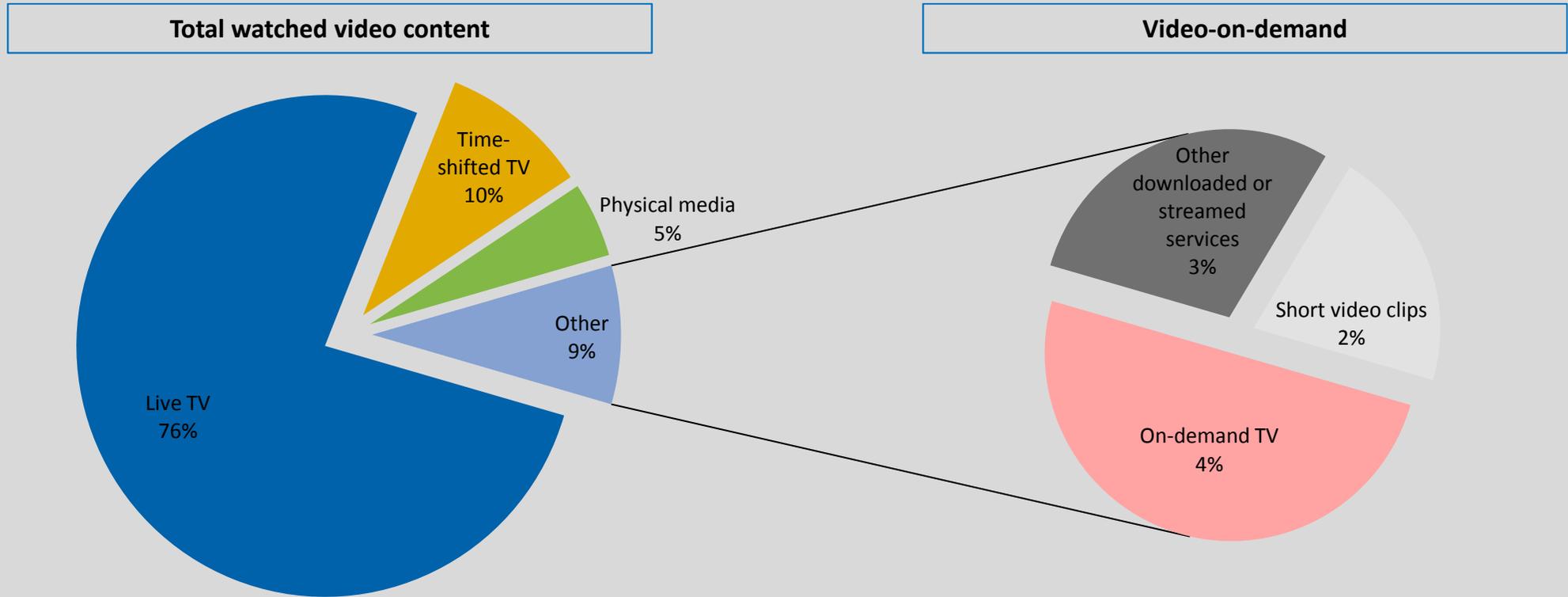
Price index source notes

Source	Notes
The Automobile Association	Car running costs are published annually on the motoring advice section of the AA's website (http://www.theaa.com/motoring_advice/running_costs/)
Office of Rail and Road	The ORR publishes its Annual Statistical Release on Rail Finance via the NRT Data Portal (http://orr.gov.uk/statistics/published-stats/statistical-releases)
TFL	Current fares for the Tube, DLR and London Overground are listed on the TFL's website (http://www.tfl.gov.uk/fares-and-payments/fares); Historical data are available upon request via the Freedom of Information Act (http://www.tfl.gov.uk/corporate/transparency/)
Ofcom, providers' websites, broadbandchoices.co.uk	Line rental costs are listed on each provider's website as well as through various price comparison websites (http://www.broadbandchoices.co.uk/home-phone) Ofcom publishes lowest cost broadband options from the major UK service providers in its Communications Market Report (http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/?a=0)
The Cinema Exhibitors' Association	IHS Screen Digest's CAA/EDI Rentrak data on average ticket prices are published via the CEA's website (http://www.cinemauk.org.uk/facts-and-figures/uk-cinema-industry-economics/average-uk-ticket-prices-2000-2014)
Society of London Theatre	SOLT publishes data on ticket prices in its annual Box Office Report (http://www.solt.co.uk/publications)
Sporting Intelligence	Sporting Intelligence's reports on Premier League ticket prices are searchable on the website (http://www.sportingintelligence.com/?s=ticket+prices&x=0&y=0)
VisitEngland	The Annual Survey of Visits to Visitor Attractions are published annually via the VisitEngland website (http://www.visitengland.com/biz/resources/insights-and-statistics/research-topics/attractions-research/annual-survey-visits-visitor-attractions)
Glastonbury Festivals	Glastonbury ticket prices are reported annually through various press and listed on the event's website (http://www.glastonburyfestivals.co.uk/information/tickets/)
Nielsen Bookscan	Headline data are published through various press sources such as The Guardian (http://www.theguardian.com/books/2015/jan/13/sales-printed-books-fell-150m--five-years); Subscription required for full access to the data and use of analytical tools (http://www.nielsenbookscan.co.uk/controller.php?page=48)
GfK Chart-Track	Headline data are regularly published via MCVUK (http://www.mcvuk.com/news/read/uk-game-prices-at-an-all-time-high/0126795); Subscription required for full access to the database (http://www.chart-track.co.uk/)
British Phonographic Industry	Publishes retail sales data in its annual Yearbook Series (http://www.bpi.co.uk/products/102-bpi-yearbook-series.aspx)
British Video Association	Publishes retail sales data in its annual Yearbook Series (http://www.bva.org.uk/yearbook/)

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Live, recorded, and on-demand viewing claim different shares of the media mix (and of consumer leisure time more generally)

Share of daily watched video content among UK adults (2013)



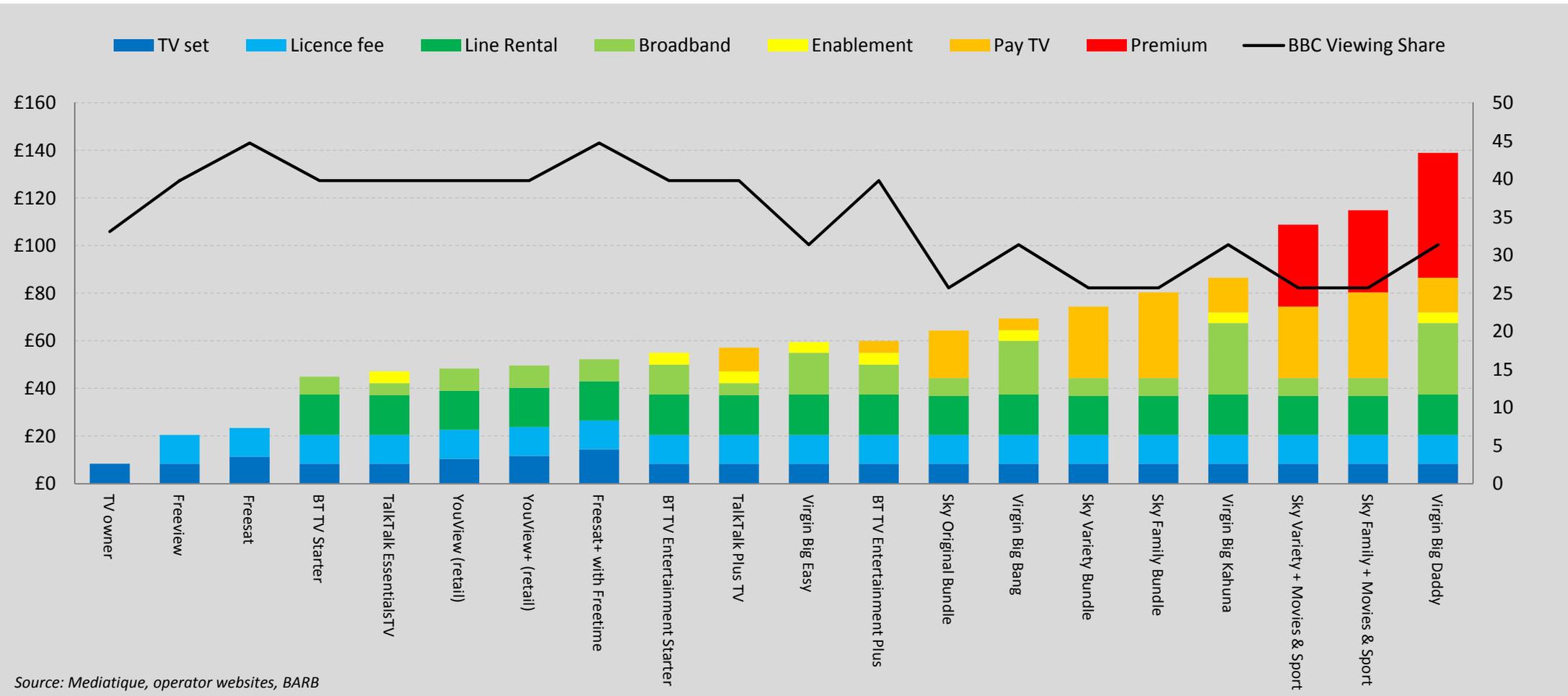
Source: Mediatique, Ofcom

Physical media includes DVDs and Blu-ray; "Other downloaded or streamed services" includes SVOD or EST –for example, Netflix or Amazon Instant Video

- The current picture of video consumption in the UK reflects the interplay of connectivity, device technology, consumer behaviour and commercial strategies (content owners, distributors, new entrants)
- Increasing enablement has increased the share of non-linear viewing to between 20-30% of viewing hours, reflecting growth in PVR penetration and the availability of on-demand content (notably from the major broadcasters which have launched their own VOD players)
- Nevertheless, the lion's share of video consumption remains via live TV channels (viewed on a scheduled basis on TV screens). We do expect, however, an increasing proportion of TV viewing to take place on a time-shifted and on-demand basis – reaching 25% of total hours by the end of 2018 in the UK

The cost structure of bundled TV and broadband services illustrates the high price of subscription pay TV and premium channels over the Licence Fee

Cost structure of TV services, per month (2015)



Source: Mediatique, operator websites, BARB

*Equipment costs as follows: Freesat HD digital boxes £50 and Freesat+ HD with Freetime boxes £199; Satellite dish and installation £90; YouView £99.99 retail, YouView+ £159.99; HD TV set £400; all equipment amortised over 4 years; Prices exclude promotional deals and activation fees; "Enablement" refers to the cost of kit enabling catch-up and on-demand services implicitly included in many pay-TV subscriptions (e.g. TiVo included in Virgin Media packages, and YouView boxes included in BT TV and TalkTalk packages); Additional content beyond the free-to-view channels constitutes "Pay TV"; while "Premium" refers to the breadth of content and functionality offered in the highest pay tier (normally incorporating movies and sport)

**NOTE: BBC Viewing Share is the average total viewing share of all BBC portfolio channels in all homes on the platform of the service offered (not an average of all households taking that specific service)

To calculate the consumption of all BBC services (including radio and online), we isolated the consumption of BBC Radio and BBC Online services since 2012

- We used RAJAR and CMI consumption data along with population data from the ONS 2011 Census to calculate the average total weekly consumption across all of the BBC’s services
- The table opposite shows the average hours of BBC radio and BBC online content consumed per day for all individuals 10+ and 16+, respectively. To account for sampling differences (i.e., the minimum age of individuals surveyed), the figures are then converted into total household averages using the ONS population data
- The total average consumption of all BBC services is the sum of the average radio hours per household, average online hours per household, and the average TV hours per household (based on BARB viewing data) calculated in the previous section on Value For Money

BBC Radio Consumption	2010	2011	2012	2013	2014
Radio hours per day per individual 10+ (RAJAR)	10:32	10:39	10:22	10:06	09:50
Individuals 10+ per household (ONS)	2.108	2.108	2.108	2.108	2.108
Radio hours per household	22:13	22:27	21:51	21:18	20:44
BBC Online Consumption					
Online hours per day per individual 16+ (CMI)	00:47	00:49	00:57	01:07	01:04
Individuals 16+ per household (ONS)	1.94	1.94	1.94	1.94	1.94
Online hours per household	01:31	01:35	01:51	02:10	02:04

To calculate the proportion of the BBC Licence Fee spent solely on TV services, we looked at the total expenditure on all BBC TV services as detailed in the BBC annual report

- To compare the BBC to other substitutable TV services (which do not have additional non-TV services included in the subscription cost) we isolated the proportion of the LF attributable directly to BBC television services
- To calculate the proportion each year, we looked at total TV expenditure as reported in the BBC annual report. *(NOTE: we have converted fiscal year figures for 2009-2015 into calendar year figures in order to be consistent in our comparison of costs)*
- We then applied the percentage to the LF over the period to find the cost attributable to TV services only
 - TV accounted for 67% of total expenditure on BBC services in 2009 (equivalent to £96.71 of the £142.50)
 - In 2014, this percentage fell to 61%, or £91.75 of the £145.50
- This calculation is outlined in tabular form opposite

Revenue (£000s)	2009	2010	2011	2012	2013	2014	2015*
TV expenditure (FY)	2,336	2,351	2,372	2,335	2,472	2,276	2,380
TV expenditure (CY)	2,347	2,367	2,344	2,438	2,325	2,354	-
LF revenue (FY)	3,494	3,447	3,513	3,606	3,656	3,726	3,735
LF revenue (CY)	3,459	3,497	3,583	3,644	3,709	3,733	-
TV expenditure as % of LF revenue	67%	68%	68%	65%	68%	61%	-
Proportion of LF spent on TV	£96.71	£98.49	£95.20	£97.35	£91.22	£91.75	-

*Note that the figures are calendarised using figures provided in the BBC Annual Report.

We have devised a methodology for comparing the proportion of the BBC's licence fee allocated to TV with the advertising and sponsorship generated by cohort broadcasters

While not a core element of our modelling, we look here at the "cost" to viewers of nominally "free" TV from commercially funded broadcasters, on the basis that the amount spent by advertisers is recovered via the sale of goods and services and therefore "paid" by consumers; we then compare this to the BBC's TV "cost" (adjusted for viewing share)

- We have done a preliminary calculation of the ratio between linear advertising and sponsorship revenues on the one hand and viewing share on the other at ITV, Channel 4 and Five, using the latest BARB data*
 - For ITV's advertising/sponsorship revenues (2014), we have excluded online (e.g. ITV Player), and B2B revenues from "broadcast" income
 - For C4, we use "corporation" revenues (2014) excluding digital and adjusted for commission generated from selling third-party airtime
 - Channel 5 data is not publicly available on a stand-alone basis, so figures here are estimates**
 - The comparable figure for the BBC is £2,350m, the amount of licence fee income linked to TV
- We then calculated the ratio between share of viewing and share of relevant revenues in the UK market***, concluding that BBC is more cost effective than its main cohorts ITV and Channel 4

	TV revenue (£m)	Percentage of total relevant revenue (incl. LF)	Viewing share (%)	Ratio of revenue to viewing
BBC	2,354	39.9%	33.0%	1.21
ITV	1,762*	29.9%	22.0%	1.36
Channel 4	839**	14.2%	10.5%	1.36
Channel 5	360	6.1%	5.9%	1.04

*Includes £2,023m of ITV plc revenues, £90.4m of STV revenues and £36.6m of UTV revenues, but excludes £153m of Online, Pay and Interactive, £71m of SDN revenues and £170m of "other commercial"

**For Channel 4, digital and "other" revenues are £69m; we have also made a £30m adjustment for the sales commission on £200m of estimated revenue from affiliate arrangements with BT Sport, UKTV, etc.

(£m)	Revenue per % viewing share	Notional BBC TV-only license fee at cohort revenues per % viewing share
BBC	71.3	2,354
ITV	80.1	2,643
Channel 4	79.9	2,637
Channel 5	61.0	2,014

*BARB calendar year 2014 – in each case, we have used "family" share, including +1s and HD; ** We used the latest figures available prior to the sale of Channel 5 in 2014; ***We assume total NAR in the market in 2014 is £3,541m (including sponsorship and in-house commission)

We have also developed a means of determining the consumption of Sky On Demand services not included in BARB household viewing; taking this into account would improve Sky's VFM

In the main report, we use viewing share of linear channels available as a result of paying for a subscription to calculate VFM (which includes all time-shifted viewing within 7 days of broadcast); in fact, on demand viewing in Sky homes is possible through its movies and Box Sets and is not counted in BARB – counting this would improve Sky's VFM

- Our methodology for determining the consumption of Sky On Demand content is based on Sky's reported "Viewing Events" figures, annualised for the full calendar year 2014
- We assume that one third of all Viewing Events are attributed to catch-up (and we remove it here)*
- We ascribe all the rest of the on-demand viewing to Sky's side of the value bargain – i.e., all box set viewing (1/3) and all on-demand movie viewing (1/3)
- We assume that all box set viewing is to Sky's account, even content from ITV and BBCWW, as only Sky homes behind a pay wall are enabled to use the box sets for "free" (as opposed to catch up)
- Box set requests are assumed to have a runtime of 40 minutes and on demand movies of 90 minutes, and that the average size of the audience is 1.358 individuals**
- The average Sky household consumes 102 hours of Movies and Box Set content

	Box Sets	Movies
Total Viewing Events in 2014***	303m	303m
Hours per request	0.67	1.50
Total hours	202m	455m
Average size of audience**	1.4	1.4
Total viewed hours	304m	683m
Households with relevant Sky service	7.0m	5.5m
Avg. hours per household with service	43.4	124.1
Total Sky Households	9.7m	9.7m
Avg. hours across all Sky households	31.3	70.4

**Virtually all viewing in the catch-up window via PVRs is captured in BARB's consolidated data, which covers viewing via the TV set in the seven days after broadcast – by which time all but a very long tail of older viewing has occurred; catch-up via tablets, PCs and mobile is not captured in BARB's so-called "gold standard"*

***This is a weighted average based on ratios from BBC iPlayer audience research: TV and console (via TV) accounts for 54% of viewing with an average audience of 1.5 individuals, PC/Tablet accounts for 44% at 1.2 individuals, and mobile accounts for 2% with 1 individual*

****Taken from Sky's Unaudited results for the nine months ended 31 March 2015*

Further research: Forecasting and scenario testing of price, delivery and consumption changes, and the impact on relative VFM...

We have considered how the VFM analysis might be extended to include a 10-year forecast of the BBC LF and the key substitutable services from pay-TV and SVOD players...

- VFM calculations would be subject to considerable uncertainty over a 10-year period, including via changes in dynamics affecting price, delivery, consumption and regulation as summarised in the table opposite
- We have considered how these components might change over time according to some basic scenarios to predict a range of outcomes on price, take-up and usage such that the commercial side of any VFM analysis can be proposed over the medium term (subject to caveats about more recent new entrants and their still-evolving dynamics, as well as those that have yet to make an appearance)
- Predicting VFM developments becomes more difficult when it comes to the BBC side of the equation; however, a scenarios approach – with price and consumption ranges for each good and service (including the BBC on a fixed basis over ten years), and indicative outcomes for VFM in each case – could be instructive
- We consider these possible scenarios overleaf...

Components of VFM	Questions for scenario testing
Price	<ul style="list-style-type: none"> ▪ How will the prices of media goods and services change over time? Do past trends (in pay-TV ARPU, SVOD retail prices, etc) confirm inflationary bias over time? (We certainly think we can make some predictions here for the pay TV bundlers if not the recent entrants) ▪ What will happen to input prices over time (talent, technology, etc)? is there scope for efficiencies among key providers? ▪ What competitive pressures will materialise over time (further new entry, easier switching among providers)? Will these lead to price restraint?
Delivery	How will the delivery of goods and services change over time (more bundled provision, increased scope of services, greater convergence or more fragmentation, pay as you go)?
Consumption	How will consumption of media goods and services change over time – i.e., how might consumer preferences (for content, bundling, willingness to pay, search/navigation) evolve and with what impact on over all consumption, including of linear/non-linear, SFC versus long-form narrative, etc.?
Regulation	What will be the regulatory framework in place (particularly around access to premium and other pay TV content and its role in encouraging switching/migration by consumers)?

Assuming the LF remains subject to current dynamics throughout the next ten years, scenarios across the BBC and commercial substitutes can be posited

Fixing the BBC's "price" on the basis of the five-year agreement in place (2017-21) and rolling this forward to 2026 would permit us to subject the total market (commercial plus BBC) to three key scenarios – at trend, below trend and above trend as described here...

- For the BBC, we can, for example, start with a set of assumptions that would be true in all scenarios:
 - 1) The cost of over-75s, phased to 2020, subject to assumptions informed by ONS and pension/actuarial forecasts to determine numbers of recipients of free licences
 - 2) Removal of the requirement to fund the remaining broadband scheme (£150m over an agreed period)
 - 3) Extension of the licence fee to apply to *solus* iPlayer use ("modernisation")
 - 4) No further top-slicing within the 10 year period
 - 5) Year-on-year inflation adjustment to the licence fee for five years – then roll over on same basis for this exercise...
 - 6) No change on decriminalisation (as per the Perry Report)
- For the combination of the commercial sector and the BBC, we can posit scenarios that vary from a central trend line, as described by a strict read-across from a five-year review:
 - 1) For example, we can take the trailing five-year trend in "price" for commercial substitutes (Sky, Virgin, Netflix) and extend this out for 10 years – we then posit an under- and over-trend line scenario for price, reflecting changes to the components listed on the previous slide
 - 2) We can do similar sensitivities for delivery and consumption
 - 3) The regulatory environment would be more challenging to predict: one might posit a "status quo" context, a "de-regulatory" option and a "re-regulatory" option with specific impacts on each of the remaining components (price, delivery, consumption)

Glossary of terms (1)

“AM”	Amplitude modulation – a method of delivering radio signals to receiving equipment, associated with standard (“SD”) or lower fidelity services*
“Amazon Instant”	The branded on-demand service from electronic retailer Amazon, offering film and TV programmes
“AOL”	An Internet Service Provider (“ISP”) offering a broadband service and portal (owned by “Talk Talk”)
“ARPU”	Average Revenues per Unit or User – the average subscription fees paid by subscribing households to pay-TV platform operators or other network service providers such as “ISPs”
“BARB”	Broadcasters’ Audience Research Board – the ratings agency for UK television funded by commercial operators and the BBC
“Blu-ray”	Standard for high-definition (“HD”) “DVD”, requiring compatible devices
“BT”	Legacy telecommunications provider in the UK, now offering broadband and TV
“Bundling”	The generic name for the offer of multiple services to a single household by a single supplier – typically, a triple play of TV, telephone and broadband or a quad play of these services plus mobile
“Catch-up”	Common name for on-demand service providing ability to watch previously broadcast programmes
“CD”	Compact Disc – a storage device for recorded music, in replacement of a vinyl record
“Charter”	The framework governing the BBC status and operation as a public-service entity
“CMI”	Cross-media Insight Survey – a regular survey conducted by research firm GfK on behalf of the BBC, permitting the measurement of audiences across multiple platforms
“Console”	Device typically associated with gaming – such as PlayStation or Xbox
“CPI”	Consumer Price Index – tracking metric for inflation in the UK
“DAB”	Digital Audio Broadcasting – the standard for digital radio in the UK, adopted by the BBC and others

**Note that words within quotation marks (“”) in the definitions are further defined in the glossary under their own entry.*

Glossary of terms (2)

“DCAB”	Digital Cable – the digital cable network operated in the UK as “Virgin”, delivering broadband, telephony and television via a fixed-line network of fibre optic (or coaxial) cable
“DSAT”	Digital Satellite – the current platform for the delivery of TV channels and other services via satellite; the two main operators are “Sky” and “Freesat”
“DTT”	Digital terrestrial TV – the over-the-air platform using terrestrial spectrum to distribution channels available to any default TV tuner or set-top box (marketed as “Freeview”)
“DVD”	Digital Versatile Disc – a storage device of audio-visual content such as films and TV programmes
“Ebook”	Electronic book, or a publication made available and consumed in digital form
“EE”	Trade name for the mobile and broadband operator owned by France Telecom and Deutsche Telekom
“FM”	Frequency modulation – a method of delivering radio signals to receiving equipment, associated with high definition (“HD”) or higher fidelity services
“Freesat”	The UK platform of channels available via satellite with no subscriber payment
“Freetime”	The on-demand service supplied to compatible Freesat receiving devices
“Freeview”	The UK platform of channels available over terrestrial spectrum with no subscriber payment
“FTA”	Free to air – characteristic applied to channels available for free over the air with no requirement for a pay-TV subscription
“HD”	High Definition – channel available at superior picture quality requiring additional bandwidth
“IP”	Internet Protocol – the foundational standard for the delivery of files over the internet
“iPlayer”	The on-demand service operated by the BBC incorporating TV and radio, including catch-up
“iPTVs”	TV sets (or smart TVs) that can receive content via a fixed or mobile internet connection
“ISP”	Internet Service Provider – the commercial supplier of broadband services to households and businesses

Glossary of terms (3)

“LF”	Licence Fee – the payment by an owner of a TV set that is used to watch broadcast TV (or by any viewer of an online broadcast watched at the same time as it is broadcast on traditional platforms)
“Netflix”	A US-based SVOD platform available in UK on “iPTVs”, tablets, mobiles and “PCs”
“Now TV”	A stand-alone online and “STB”-based pay TV service owned by “Sky”, delivered “OTT”
“ONS”	Office of National Statistics – the agency responsible for compiling and measuring data used to determine the “CPI” and other metrics; also provides the UK census
“OTT”	Over the Top – the deliver via “IP” to a TV or “STB” via the internet rather than through the broadcast or closed network of a platform provider
“Oyster”	The pre-loadable payment card used on the London Underground, Overground and buses
“PC”	Personal computer – the generic name for any computer with a central processing unit of its own
“Plusnet”	A budget “ISP” owned by BT
“PSB”	Public Service Broadcasting – the formal term applied to holders of broadcast licences (or, in the case of the BBC, subject to Charter terms) as providers of public-service broadcasting
“RAJAR”	Radio Joint Audience Research – the ratings agency that gathers and publishes data on radio listening in the UK, funded by the commercial operators and the BBC
“S4C”	Welsh-language PSB whose public funding comes via the “LF”
“SD”	Standard Definition – the default standard for the broadcast of TV channels
“Sky”	The pay-TV satellite firm in the UK/Ireland, Germany, Austria and Italy, controlled by 21 st Century Fox
“STB”	Set-top Box – receiving equipment connected to a TV screen to provide additional channels and services
“SVOD”	Subscription Video on Demand – video service available on demand permitting viewing at a time of the consumer’s own choosing for which a separate (typically monthly) payment must be made
“Talk Talk”	The broadband, telephone and TV provider formerly owned by Carphone Warehouse

Glossary of terms (4)

“TiVo”	The “IP”-enabled interactive TV platform offered to customers of “Virgin”
“TRP”	TRP Research – a UK-based analytics company specialising in monitoring media consumption
“UMD”	Universal media device – a standard for storing and playing audio and visual content developed by Sony
“VAT”	Value-Added Tax – the tax applied to the trade of most goods and services in the UK, with the rate set at 20% for most taxable categories
“VFM”	Value for Money – a measure of the value that consumers ascribe/derive to or from the their consumption of a given good or service compared to its cost; typically measured in the context of publicly funded goods and services
“VHS”	Video Home System – standard for video cassette tape and devices, replaced by DVDs
“Virgin”	Virgin Media – company supplying TV and communications services in the UK over its own largely digital cable network, owned by US company Liberty Global
“VOD”	Video on Demand – video on demand – the delivery of content on a non-scheduled basis to users at a time and via a device of their choosing
“YouView”	An IP-enabled “DTT” hybrid set-top box featuring both broadcast and non-linear (catch-up) TV content, owned by the BBC, other “PSB” broadcasters and others

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