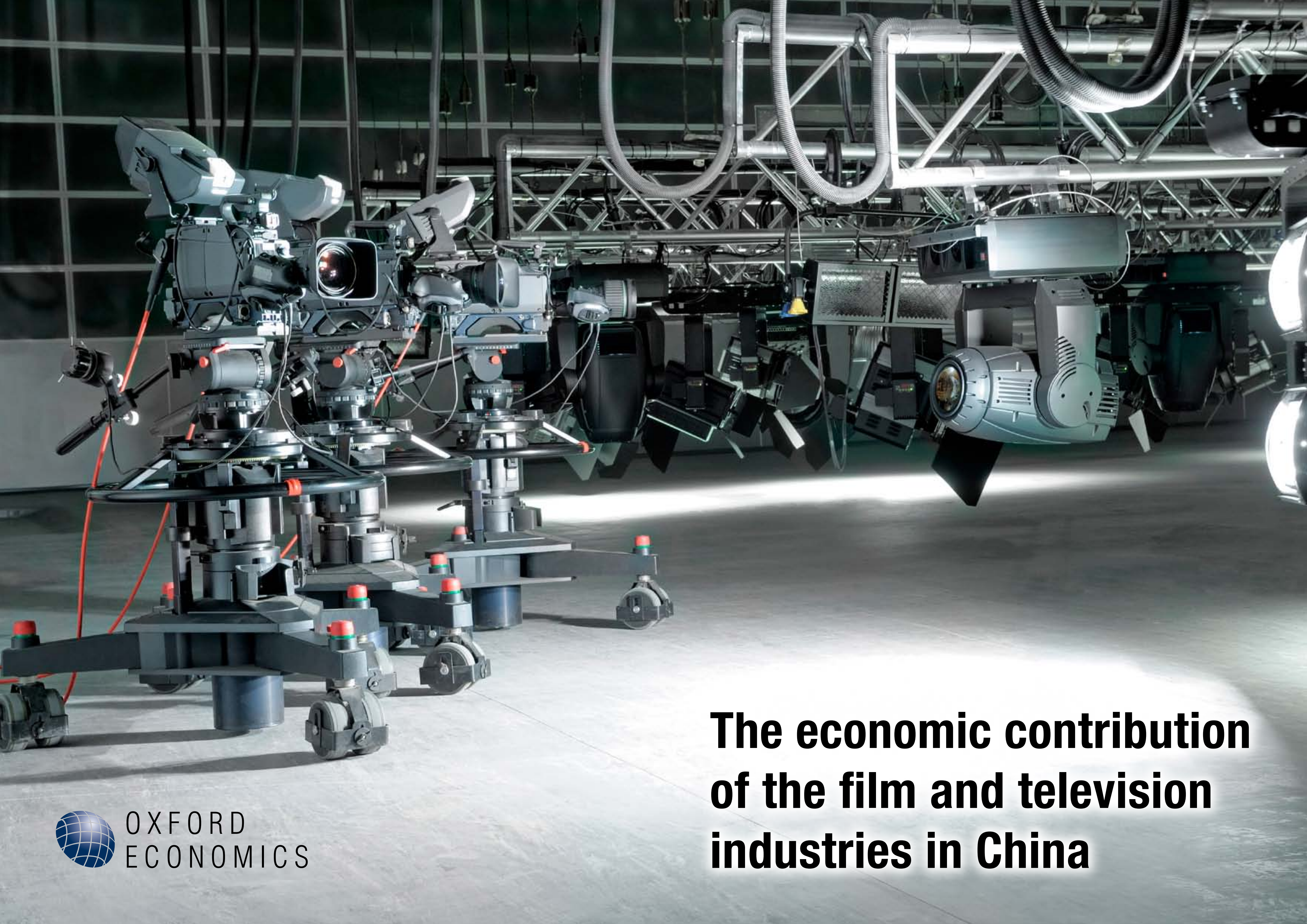

The economic contribution of the film and television industries in China

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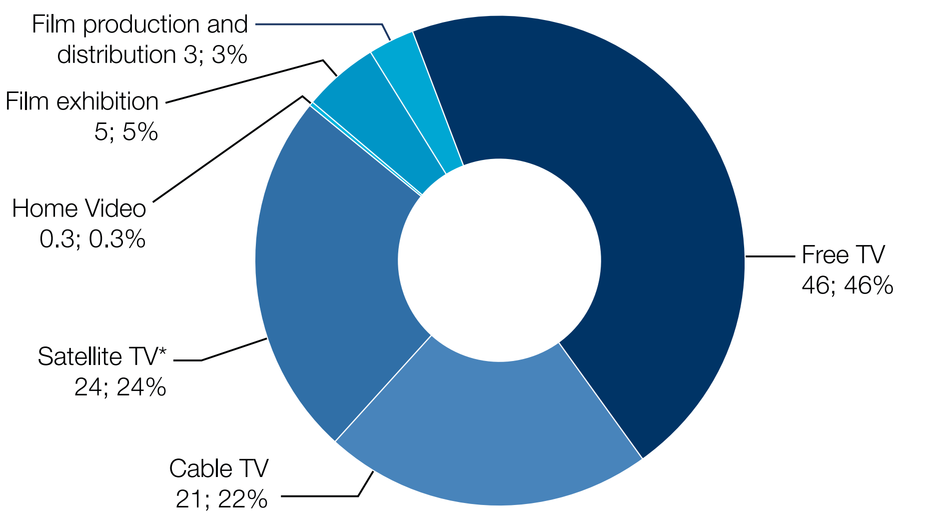
Contents

1 Key findings

The film and television sectors make a significant direct contribution to the Chinese economy…

- The film and television industries are estimated to have **directly** contributed **100 billion yuan** to the Chinese economy in GDP[1] in 2011[2]. We estimate that they also directly supported **909,000 jobs** and generated just over **22 billion yuan** in tax revenues (employees' Income Tax, Business Tax, Enterprise Tax and VAT).

Chart 1.1: Direct GDP in the Chinese film and television industries, 2011 (billions of yuan and percentage split)



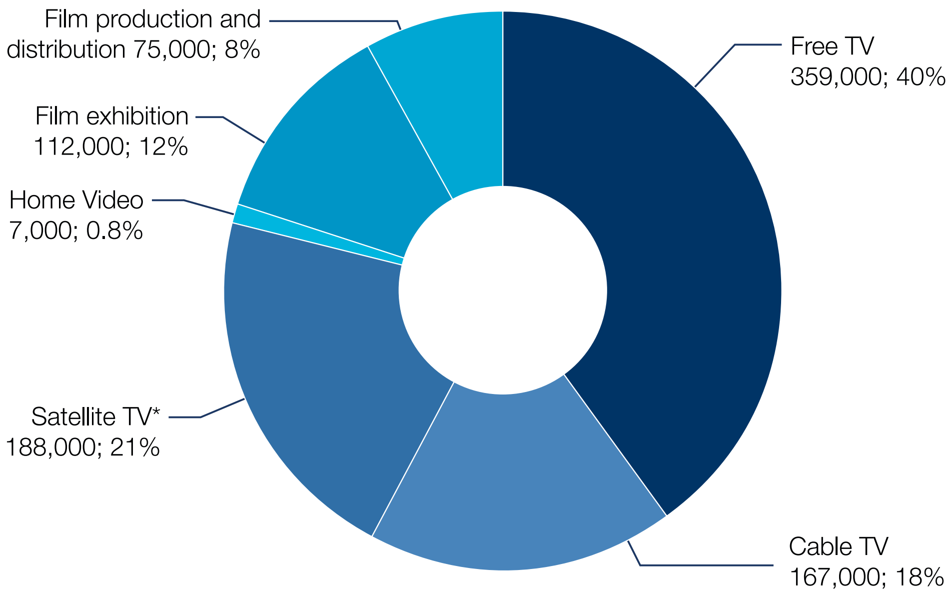
Total: 100 billion Yuan

Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding
*GDP from contracts with satellite operators to install/upgrade facilities and introduce satellite services

1 Throughout this report measures of GDP reflect GDP at "basic prices" (also known as gross value added or GVA), rather than the "market price" measure usually given headline status in official statistics. See Chapter 8 for more details.

2 2011 was the latest year for which data was available from key official sources including the "Blue Book of China's Radio, Film and Television (2012)" and "The Research Report on Chinese Film Industry" (2012)".

Chart 1.2: Direct employment in the Chinese film and television industries, 2011 (persons employed and percentage split)



Total: 909,000 people employed

Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding
*Employment from contracts with satellite operators to install/upgrade facilities and introduce satellite services

- Overall, the film and television sector accounted for an estimated 0.2% of national GDP in 2011. The sector's contribution of 100 billion yuan is around 43% larger than the postal industry. Film and television's contribution to Chinese GDP is just over a third the size of each of the computer manufacturing and telecommunications equipment industries.
- In terms of employment the film and television industries accounted for 0.1% of all jobs in the country, while 0.2% of all government revenues were directly delivered by the sector.

Table 1.1: Comparison of industry GDP in 2011

Industry	GDP (billions Yuan)	% of national GDP
Postal industry	70	0.1%
Film and Television	**100**	**0.2%**
Telecommunications equipment	292	0.6%
Computer manufacturing	384	0.8%

Source: National Bureau of Statistics of China; Oxford Economics estimates

… and lend additional support to the economy through multiplier effects …

- Moreover, the film and television industries also support economic activity and jobs across the wider Chinese economy in a number of ways through "multiplier" effects. Purchases by the film and television industries from their suppliers in other sectors within China generated an additional 'indirect' contribution to GDP of 112 billion yuan in 2011, supported a further 2.4 million jobs and generated an extra 23.2 billion yuan of tax revenues.

Taking into account 'multiplier' effects, the Chinese film and television industries contributed 272 billion yuan in GDP to the national economy in 2011…

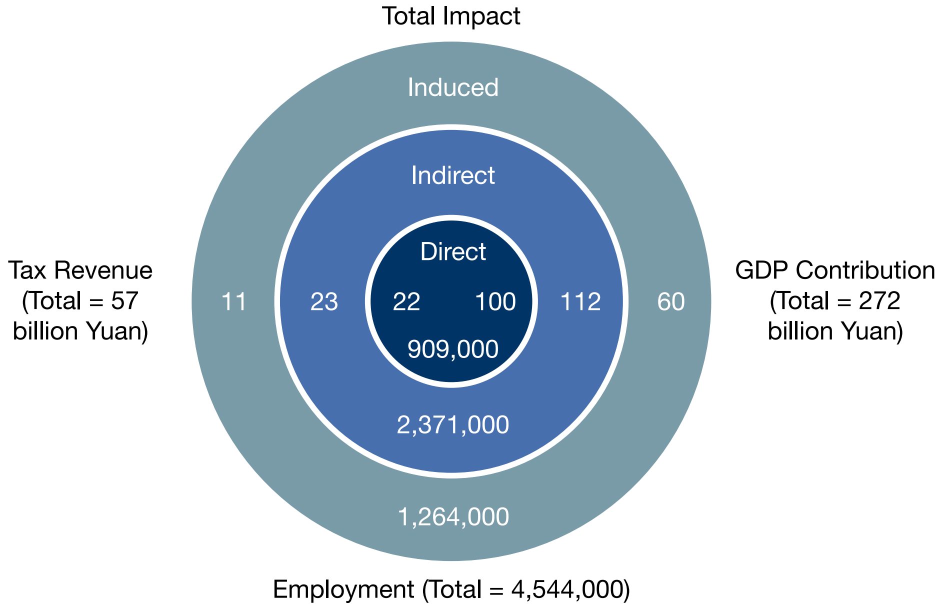
- Furthermore, those employed either directly or indirectly by the film and television industries spend their income on goods and services. This is estimated to have generated a further 60 billion yuan of GDP in 2011 through the so-called 'induced' economic multiplier. This was sufficient to support almost 1.3 million more jobs and to have yielded an additional 11.5 billion yuan in Chinese tax revenue.

… making the total economic contribution larger.

- Taking the direct, indirect and induced contributions together we estimate that the film and television industries' total contribution to GDP in 2011 was in the region **of 272 billion yuan** (0.6% of economy GDP). In addition, it supported **4.5 million jobs** (0.6% of national employment) and generated total tax revenues of **57 billion yuan** (0.5% of total revenues).

…supporting 4.5 million jobs and generating 57 billion yuan in taxes.

Figure 1.1: Total contribution to Chinese GDP, tax and employment, 2011



Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding

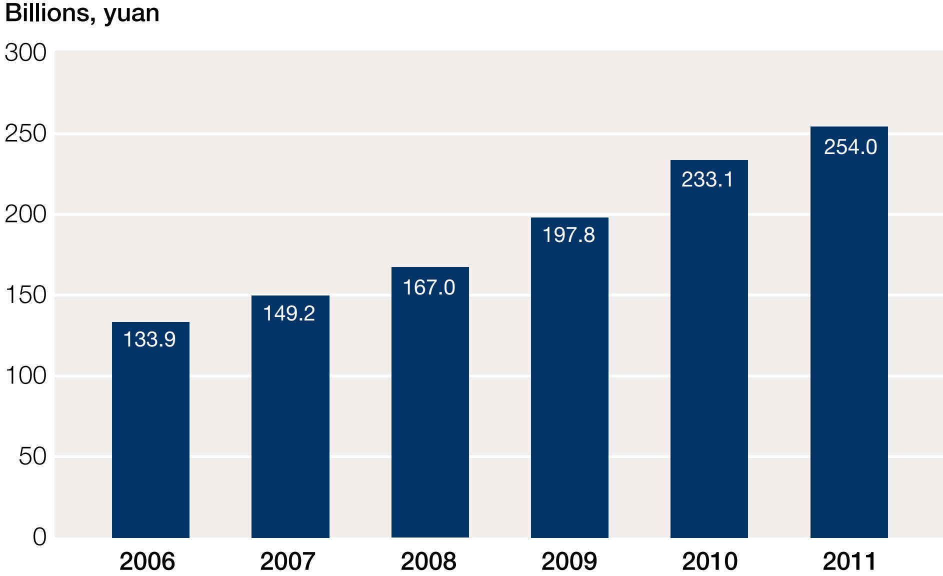
The industry creates high productivity jobs…

- Each person employed in the film and television sector generated, on average, 111,000 yuan of GDP – around 78% higher than the economy-wide average of 62,000 yuan per worker in 2011. High productivity is reflected in employees' average earnings, which at 35,100 yuan a year are around 37% higher than the average across the whole economy (25,700 yuan).

…and has enjoyed strong growth since 2006…

- Historical revenue data from official sources indicate that the film and television sector has expanded significantly in recent years. Film box office revenues increased five-fold from 2006-2011 to reach 13.1 billion yuan in 2011. Even after accounting for economy-wide inflation, real box office receipts grew by more than three-and-a-half times over this period.
- Figures released by the State Administration of Radio, Film and TV showed growth continued to be strong in 2012, with box office receipts totalling 17.1 billion yuan, 31% higher than in 2011. This meant China had overtaken Japan to be the second-largest theatrical market in the world after the USA.
- Meanwhile, combined television and radio revenues grew by almost two-and-a-half times from 2006-2011 (non-inflation adjusted). We estimate this represents an 85% increase in real (inflation-adjusted) revenues for the TV industry over the period.

Chart 1.3: Film box office and television revenues, inflation-adjusted (2011 prices)[3]



Source: Blue Book of China's Radio, Film and Television (2012), Oxford Economics estimates

Table 1.2: Overview of the economic contribution of the Chinese film and television industries in 2011

Metric	Gross Output (billion yuan)		GDP in basic prices (billion yuan)		Employment ('000s jobs)		Earnings (billion yuan)		Tax (billion yuan)	
Type of impact	**Direct**	**Total**	**Direct**	**Total**	**Direct**	**Total**	**Direct**	**Total**	**Direct**	**Total**
Free TV	121.2	353.2	46.2	125.2	359	2,030	14.1	57.0	10.1	26.0
Cable TV	56.4	164.3	21.5	58.2	167	944	6.6	26.5	4.7	12.1
Satellite TV*	63.3	184.5	24.1	65.4	188	1,060	7.4	29.8	5.3	13.6
Home video	1.1	2.8	0.3	0.9	7	20	0.3	0.6	0.2	0.3
Film Exhibition	13.1	38.2	5.0	13.5	112	293	2.1	6.8	1.0	2.8
Film Production & Distribution	8.8	25.7	3.4	9.1	75	197	1.4	4.6	0.7	1.9
Total	**264**	**769**	**100**	**272**	**909**	**4,544**	**31.9**	**125.3**	**22.0**	**56.7**

Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding *Impact from contracts with satellite operators to install/upgrade facilities and introduce satellite services in coming years

3 TV industry revenues for 2006-9 were estimated by assuming the proportion of TV revenue within the total TV and radio industry was the same as in 2010.

- Chart 1.3 summarises estimated inflation-adjusted box office and television revenues (i.e., gross output) from 2006 to 2011. Inflation-adjusted revenues (measured in 2011 prices) increased by 90% over the period, from 133.9 billion yuan in 2006 to 254 billion yuan in 2011.

…with huge potential for future growth…

- The dramatic growth in box office receipts and TV revenue represents a huge surge in the demand for film and TV entertainment in China. The factors underpinning the recent increase - the world's largest population, strong economic growth and rising incomes – should continue to drive the sector in the future.

…while export earnings are also significant.

- The sector earned an estimated 2.3 billion yuan in export receipts in 2011, or 0.2% of whole economy service exports. Of this, 90% was generated by the film industry, with the remaining 10% due to activities in the television industry. (Note that export revenues are included within GDP and are therefore captured in the estimates of the economic contribution of the film and television industries.)

2 How we arrived at these figures

This report has been commissioned by MPA-China and the China Film Distribution and Exhibition Association (CFDEA).

The starting point for measuring the economic contribution of the film and television industries lies in the official statistics reported in the "Blue Book of China's Radio, Film and Television" (BBCRFT) and "The Research Report on Chinese Film Industries" (RRCHI). The most recent versions of these reports were published in 2012 and provide statistics relating to the 2011 calendar year. Consequently 2011 is the year that we focus on in this study.

2.1 Direct economic contribution

The GDP, employment and tax contributions due to the activities of businesses in the film and television industries themselves are referred to as the **direct contributions**.

Direct gross output (i.e., revenue) for film and television is based on figures reported in BBCRFT and RRCHI. Television employment is also based on figures reported in BBCRFT. We combine this data with other official economic data at the appropriate level of industrial detail to obtain estimates of the direct GDP, employment, taxation and earnings for film and television industries. For example GDP estimates utilise the relationship between gross output and GDP for the "Radio, TV, film and video" sector from official Input-Output tables. For further details of the methodology please see Chapter 8.

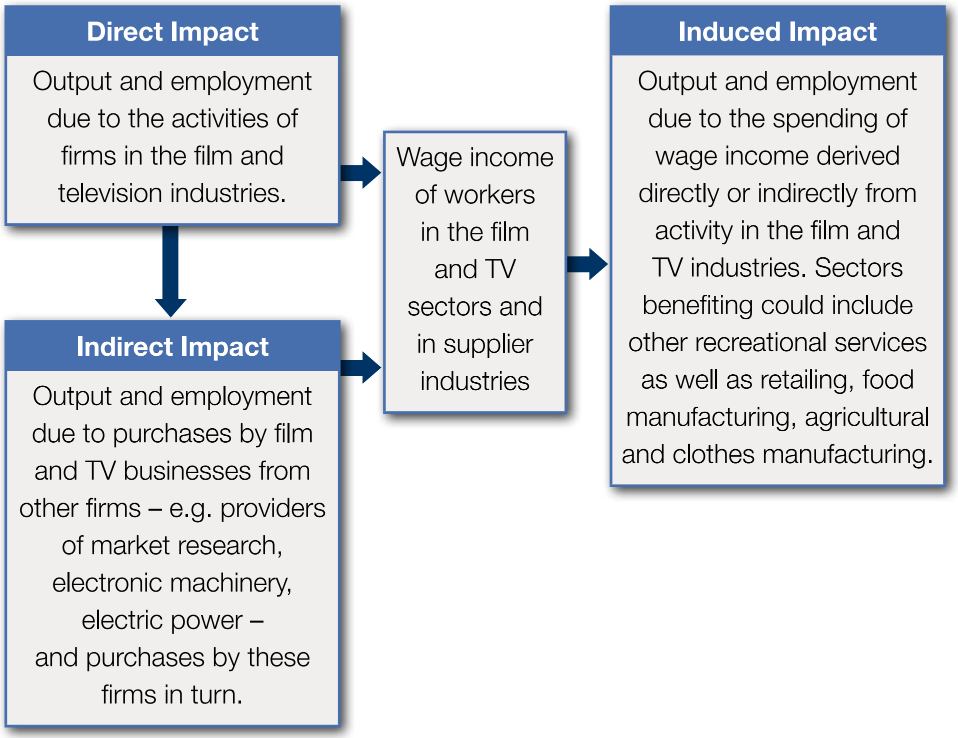
2.2 Additional economic contributions

To assess the **total economic contribution** of the film and television industries on the Chinese economy we need to take into account two further channels of economic contribution:

- **Indirect contributions**, which relate to the output and jobs supported in the Chinese supply-chain, due to purchases by Chinese film and television companies of goods and services from other firms located in the country; purchases by these suppliers in turn, and so on throughout the supply-chain.
- **Induced contributions**, which are the Chinese output and jobs supported by workers in the film and television industries and employees in the supply chain, spending their earnings on various goods and services in the economy (i.e., consumer spending effects).

  The contribution of these two "multiplier" effects is quantified from the official 2007 China Input-Output tables (the latest tables available), which provide data on the pattern of purchases for industry sectors and households in the economy. For further details please see Chapter 8.

Figure 2.1: The channels of economic contribution



3 Film industry

In this chapter we set out the economic contributions of the film industry in more detail. We look at two subsectors - the production & distribution sector and the exhibition sector. For each we assess their contribution to GDP, taxes and employment, and the size of the direct, indirect and induced effects. The economic contribution of the home video industry is also analysed.

3.1 Film production and distribution

By "film production" we mean the physical process of producing a film, e.g., the filming of scenes at a studio or the editing and revision of the final content. Key supplier sectors to film production include fashion and make-up, hi-tech equipment manufacturing and the utilities sector.

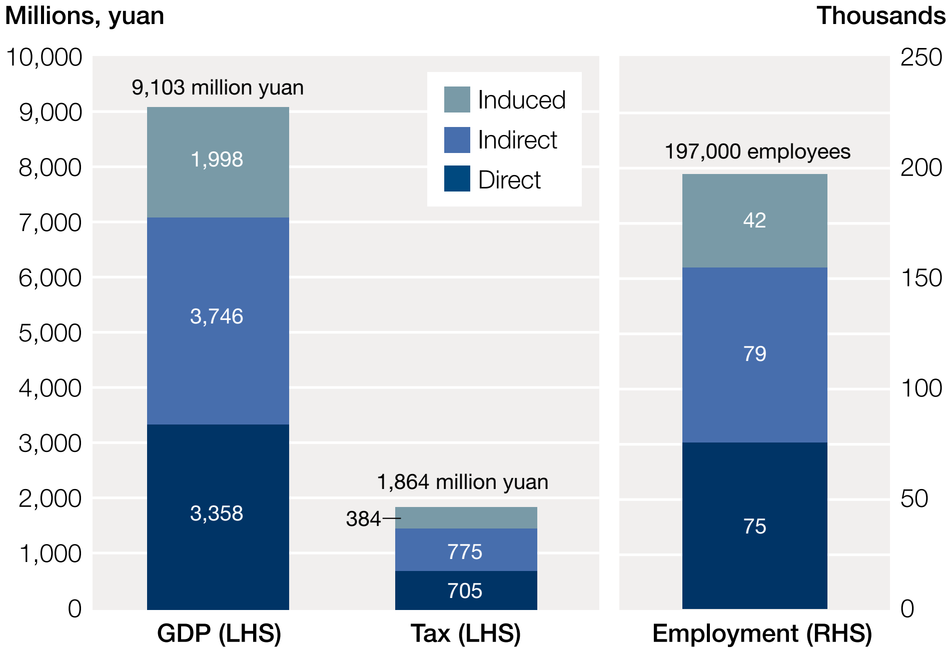
On the other hand, the 'film distribution' sector involves the launching and sustaining of films in the market place, with firms responsible for the logistical task of shipping film prints around the world and building audience awareness and interest through PR and marketing campaigns. Key supplier sectors include business services (particularly advertising and PR) and transport services.

Film production and distribution revenues also include those generated from sales of movies to television.

In China there is significant integration of film production and distribution, with much activity undertaken by firms involved in both activities, e.g., China Film Group. We therefore treat these two activities/industries as a single entity.

We estimate that in 2011 film production and distribution was worth some 3.4 billion yuan in GDP and directly responsible for 75,000 jobs. Moreover, this activity helped to generate over 700 million yuan in tax revenue. Taking into account indirect and induced effects these figures rise to 9.1 billion yuan in GDP, 197,000 jobs and raising close to 1.9 billion yuan for the Chinese government in tax receipts.

Chart 3.1: Economic contribution of film production and distribution in 2011



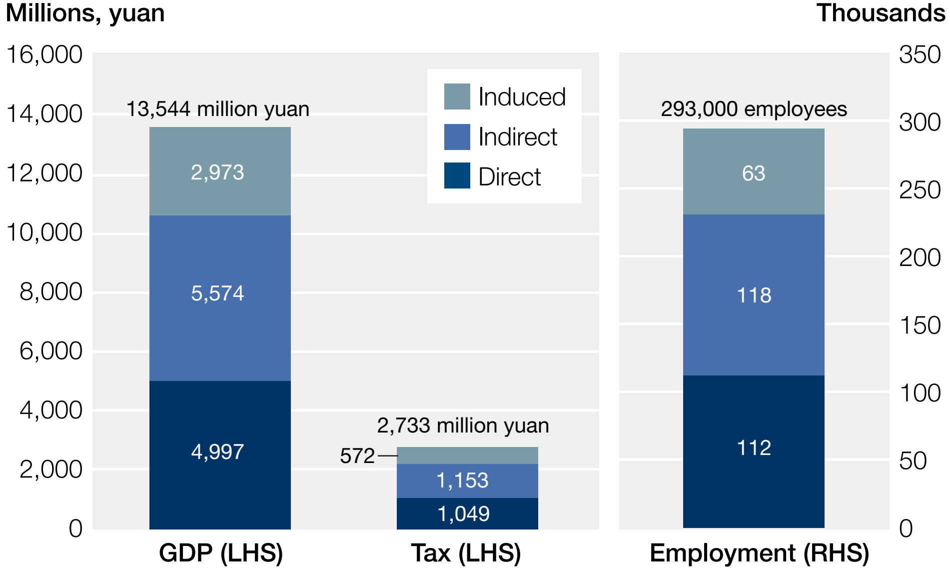
Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding

3.2 Exhibition of films

Film exhibition is the process of screening films to the public, most commonly at a cinema. Exhibition is a bigger contributor to Chinese GDP and employment than production and distribution. Key supplier sectors include food and beverage wholesalers and maintenance services.

We estimate that the GDP contribution of film exhibition was nearly 5 billion yuan in 2011, supporting some 112,000 jobs. This activity helped to generate 1 billion yuan in tax revenue. Taking into account indirect and induced effects these figures increase to 13.5 billion yuan in GDP and 293,000 jobs, and raising 2.8 billion yuan for the Chinese government in tax receipts.

Chart 3.2: Economic contribution of film exhibition in 2011



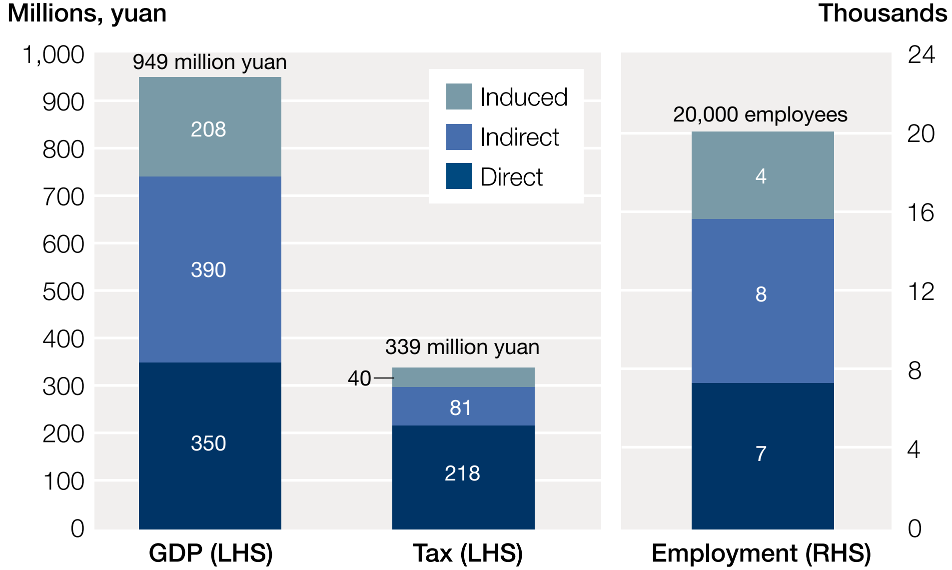
Source: Oxford Economics estimates   Note: figures may not add up to totals due to rounding

Exhibition is a bigger contributor to Chinese GDP and employment than production and distribution combined.

3.3 Home video

This sector comprises the retail and rental of DVDs, VCDs and Blu-ray Discs, but excludes hardware such as DVD players. The sector directly contributed an estimated 350 million yuan in GDP for the Chinese economy in 2011, with associated employment of 7,000 jobs and tax revenues of 218 million yuan. Accounting for indirect and induced contributions, the sector's GDP contribution goes up to 949 million yuan, supporting 20,000 jobs and generating 339 million in tax receipts.

Chart 3.3: Economic contribution of the home video market in 2011



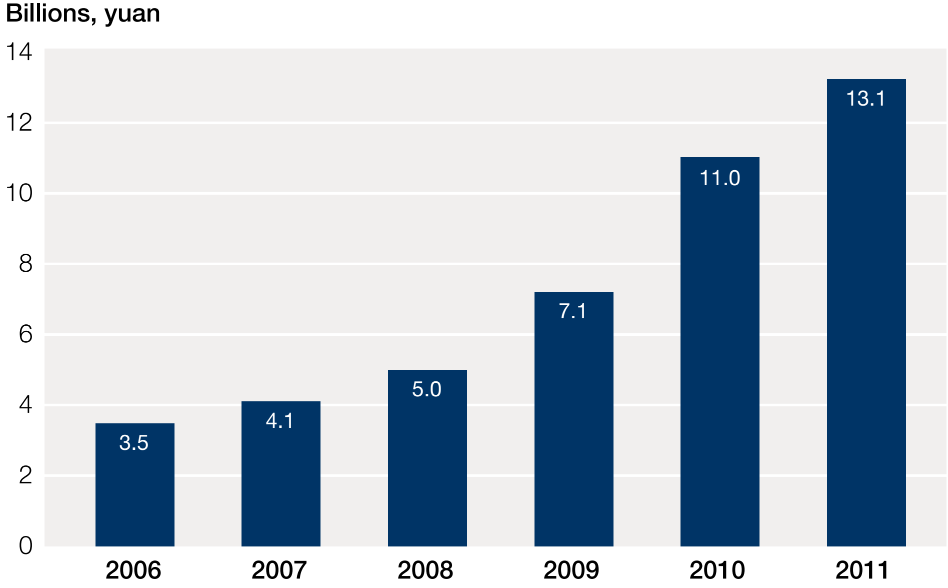
Source: Oxford Economics estimates   Note: figures may not add up to totals due to rounding

3.4 Trends over time

Box office revenues in China have grown tremendously in recent years. Total box office revenues grew by 29% in 2011 to reach 13.1 billion yuan and have increased five-fold since 2006. Chart 3.4 shows that even accounting for inflation, box office revenues have grown by more than three-and-a-half times between 2006 and 2011, from 3.5 billion yuan in 2006 to 13.1 billion by 2011 (both figures in 2011 prices). Figures released recently by the State Administration of Radio, Film and TV show growth continued to be strong in 2012, with box office receipts totalling 17.1

billion yuan, 31% higher than in 2011. This meant China had overtaken Japan to be the second-largest theatrical market in the world after the USA. The importance of the China film industry to the global film industry and the Chinese economy has therefore risen considerably in recent years.

Chart 3.4: Film box office revenues, inflation-adjusted (2011 prices)



Source: Blue Book of China's Radio, Film and Television (2012), Oxford Economics estimates

China's film industry has experienced tremendous growth in recent years. Total box office revenues … increased by five times from 2006–2011.

Co-productions form a key part of the box office in China. 74 films were approved as co-productions in 2011 by the China Film Co-Production Corporation, up from 63 films in 2010[4]. From 2000-2010 the vast majority of co-productions have been with Hong Kong, accounting for 70% of all co-productions[5]. This was followed by China-US co-productions (10%) and China-Taiwan co-productions (8%). Growth of co-productions is likely to continue, and in particular collaborations with the US are an increasing focus for production companies on both sides.

3.5 Cinema development and potential impacts

Box office growth has occurred alongside an increase in the construction of cinema screens across the country and with it the number of multiplex screens. Official data shows there were around 9,300 cinema screens in China in 2011, 48% more than the previous year and nearly five times the number in 2003[6].

New facilities such as multiplexes may, in theory, produce spillover effects across their local communities by making local areas more desirable places to live - driving property prices and local growth. While the basic concept behind "locational amenities" driving property price growth is well established (hedonic pricing), little research on the specific impacts of cinemas on property pricing appears to have been undertaken either in Western countries or China.

Nonetheless, some authors have pointed to a similar effect - that cinemas (and/or other entertainment facilities) embedded within retail malls in other countries may have increased the desirability of such malls and, in turn, raised mall rental prices.

For example, Christiansen et.al. (1999) developed a "mall entertainment index" (EI) based on a number of attributes (including the presence of movie theatres). They found a relationship between the EI and mall productivity indicators such as sales per square foot and average lease rates[7].

Likewise, a study of Malaysian malls found retail owners and tenants rating "leisure facilities" (i.e., cinema theatres and children's playgrounds) as one of the more attractive mall attributes, with the authors suggesting that attractive attributes could have a significant influence on rental prices[8].

4 Source: Ent Group

5 Source: Ent Group

6 Source: Blue Book of China's Radio, Film and Television (2012).

7 Christiansen, T., Comer, L., Feinberg, R., Rinne, H., "The effects of mall entertainment value on mall profitability" (1999) , Journal of Shopping Centre Research, Vol. 6, Is.2.

8 Salleh, K., and Ruddock, L., "The development of a hedonic price model of retail property facilities design" in Hughes, W. (Ed) 15th Annual ARCOM Conference 15-17 September 1999, Liverpool, John Moores University, Association of Researchers in Construction Management Vol. 1 337-44.

More specific research on cinema impacts was conducted by Ooi and Sim (2007). The authors specifically focussed on the impact of a “Cineplex” (i.e., multiplexes) in nine Singapore shopping centres using a survey of 1,283 shoppers. The authors found that 72% of interviewees felt the presence of a Cineplex would entice them to visit a shopping centre more often. Although the presence of a Cineplex does not directly increase spending in malls, it was found to do so indirectly by increasing the time patrons spent in shopping centres, which in turn is positively related to mall spending levels[9].

While no equivalent research appears to have been undertaken in China, the above research may be relevant to the future development of the Chinese film exhibition sector. It suggests that cinema facilities may act as an “anchor tenant” within malls, generating spillover effects and potentially increasing the overall value of the mall itself through higher rents/revenues.

3.6 Home entertainment development

The home entertainment industry in China (as measured by retail and rental of physical media, i.e., DVDs, Blu-ray discs and VCDs) contributes a relatively small amount to total film and television activity compared with other countries. Retail sales and rental of DVDs, Blu-ray and VCDs made up around 0.4% of direct revenue in the Chinese film and television industry in 2011. This is against, for example, estimates of 13.2% in Australia[10], 12.4% in the UK[11], 4.8% in Japan[12] and 7.6% in New Zealand[13]. Thus, there is significant scope for growth in home entertainment if it can move towards realising its potential. As an illustration, if the home video industry in China contributed as much to film and TV direct revenue as in Australia (13.2%), then this would be an extra 39 billion yuan in gross output (revenue), leading to an additional 12.7 billion yuan in GDP for the Chinese economy. Including indirect and induced effects the boost to the national economy could be as much as 34 billion yuan.

With the current position of the home entertainment market in China and the continuing development of internet-based delivery platforms it is likely home entertainment growth in China will be driven by services such as IPTV (Internet Protocol Television) and Video on Demand (VOD). Video on Demand allows viewers/subscribers to select and watch from a library of films and television programmes on-demand. It is likely that services will expand the home market significantly beyond its current size, especially if the market can close the gap to its potential size as part of the transition.

China had 372 million households in 2011[14]. In addition there were 156 million fixed broadband subscriptions[15], the highest of any country in the world. However, measured on a per capita basis it still lags significantly behind more advanced economies. There were an estimated 11.6 fixed broadband subscriptions per 100 inhabitants in China in 2011, compared with, for example, 27.4 in Japan, 36.9 in South Korea and 32.7 for the UK. Clearly there is a massive potential for growth in IPTV and VOD services.

As of the second quarter of 2012 China already had the largest number IPTV subscribers in the world at just over 16 million[16]. However the potential for growth in IPTV services is enormous when one considers there are an estimated 203 million subscribers of more traditional cable television services[17]. A recent study expects IPTV subscriber growth to be an average of 29% per year from 2012-2014. In particular the VoD market was expected to grow by 110% per annum from 2008-2014, driving the IPTV market to be worth US$2.16 billion by 2014 (14 billion yuan in 2011 exchange rates)[18].

It is therefore likely that China will “leapfrog” the physical home entertainment media stage experienced in many Western countries and that the future will instead see an increased focus on digital delivery systems. In addition the possibilities for home entertainment market growth will be enhanced if the industry can take advantage of the movement towards digital delivery to realise its potential.

9 Ooi, J., Sim, L., “The magnetism of suburban shopping centres: do size and Cineplex matter ?”, (2007), *Journal of Property Investment & Finance*, Vol. 25, Is. 2.
10 Economic Contribution of the Film and Television Industry (2010 update), Access Economics (2011).
11 Estimate based on data from the Office for National Statistics (ONS) in the UK and the BFI Statistical Yearbook 2012.
12 Economic Contribution of Japanese Film and Television Industry, Mitsubishi Research Institute, Inc. (2012).
13 Economic contribution of the New Zealand film and television industry, PricewaterhouseCoopers (2012).
14 China Statistical Yearbook 2012.
15 International Telecommunication Union.
16 Source: Point Topic.
17 Source: Blue Book of China’s Radio, Film and Television (2012).
18 Chinese IPTV, Market Analysis, RNCOS (2011)

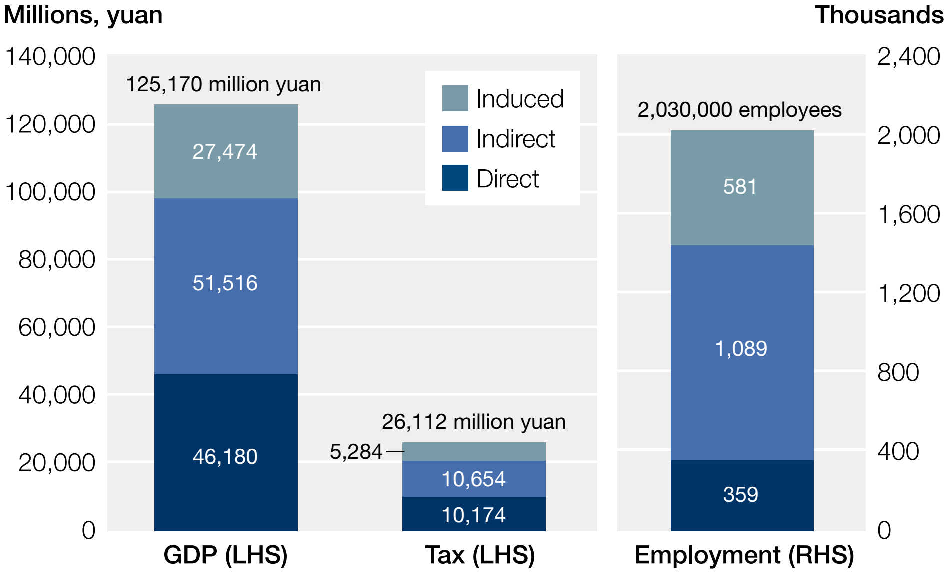
4 Television industry

4.1 Free-to-air television

Free-to-air television broadcasting involves the production and distribution of TV content on free-to-air channels, i.e., those which do not require a channel subscription fee. In China this market is dominated by the state broadcaster CCTV (Chinese Central Television). Key suppliers include the audiovisual equipment manufacturing sector and independent TV production companies.

Chart 4.1: Economic contribution of free-to-air TV in 2011

We estimate that Free-to-air TV directly contributed just over 46 billion yuan in GDP to the Chinese economy in 2011, directly supporting around 359,000 jobs and generating 10.2 billion yuan in tax revenue. Including indirect and induced effects the industry contributed just over 125 billion yuan in GDP, supported around 2 million jobs and raised 26 billion yuan for the Chinese government in tax receipts.



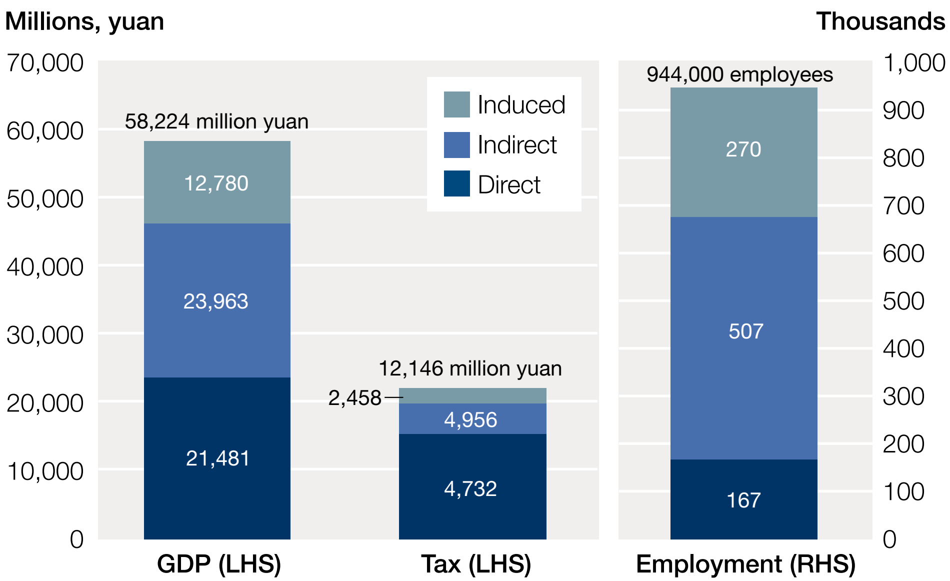
Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding

4.2 Cable TV

There are an estimated 203 million cable TV subscribers in China[19], who receive a mix of free-to-air and pay TV channels.

We estimate that cable TV activity, including the production and distribution of content and cable subscription services, directly contributed 21.5 billion yuan in GDP for the Chinese economy in 2011, supported 167,000 jobs and generated 4.7 billion yuan in tax revenue. Taking into account indirect and induced effects the GDP contribution rises to 58.2 billion yuan, which supported 944,000 jobs and delivered 12 billion yuan for the Chinese government in tax receipts.

Chart 4.2: Economic contribution of cable TV in 2011



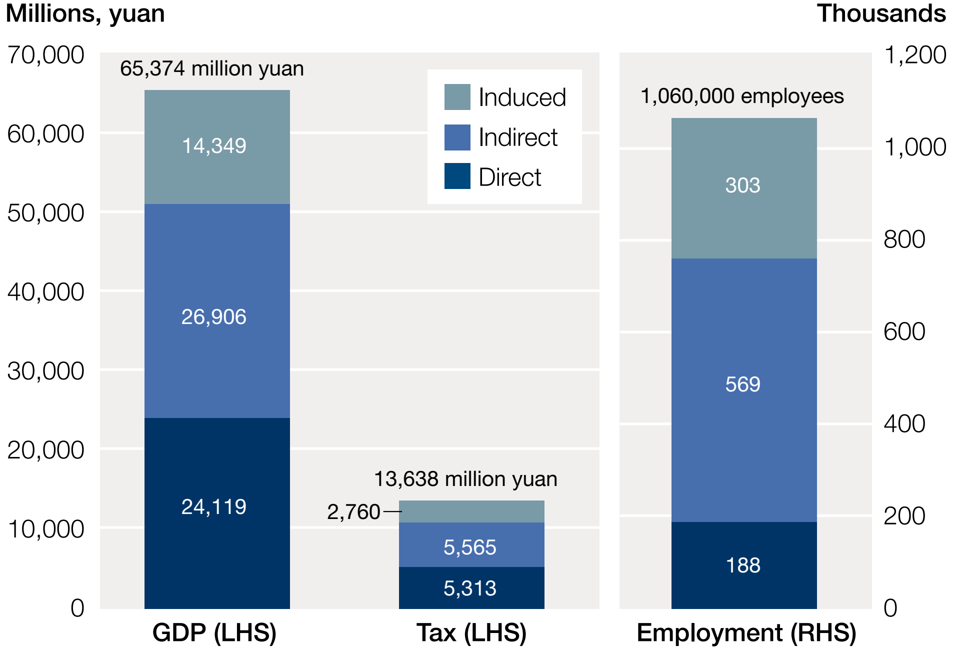
Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding

19 Source: Blue Book of China's Radio, Film and Television (2012).

4.3 Satellite TV

This sector consists of satellite-related revenue associated with income from the upgrading/installation of facilities[20]. We estimate that such activities were directly worth 24.1 billion yuan in GDP in 2011, directly created 188,000 jobs and generated 5.3 billion yuan of government tax revenue. Once indirect and induced effects are included the sector contributed 65.4 billion yuan to national GDP, around 1.1 million jobs and delivered 13.6 billion yuan in tax receipts.

Chart 4.3: Economic contribution of Satellite TV in 2011

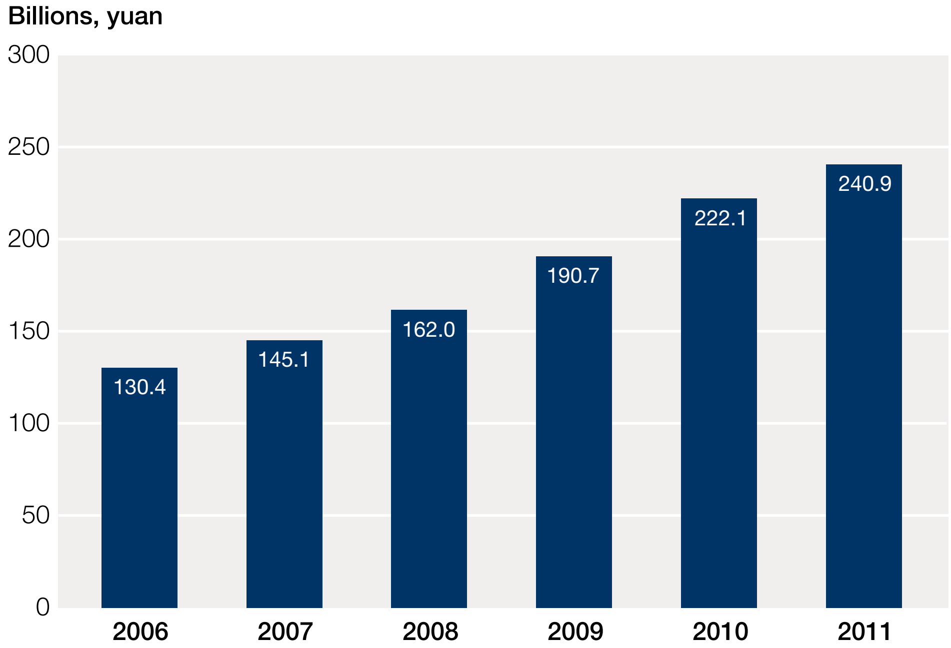


Source: Oxford Economics estimates Note: figures may not add up to totals due to rounding

4.4 Trends over time

Historical data on total revenue for television and radio provide an indication of how the economic contribution of television has developed since 2006. Combined television and radio revenues grew by almost two-and-a-half times (non-inflation adjusted) between 2006 and 2011 to reach 272 billion yuan in 2011[21]. Accounting for inflation we estimate TV revenues increased by 85% over the period in real terms, from 130.4 billion yuan in 2006 to 240.9 billion in 2011 (both figures in 2011 prices). From this data we can conclude that the economic contribution of the television industry has been increasing rapidly in recent years.

Chart 4.4: TV revenues, inflation-adjusted (2011 prices)



Source: Blue Book of China's Radio, Film and Television (2012), Oxford Economics estimates

20 This revenue is categorised as "Other TV" in the official publication "Blue Book of China's Radio, Film and Television (2012)". Enquiries made to the authors of the publication (State Administration of Radio, Film and Television) revealed that it captures income/revenue from contracts signed with satellite operators who will install/upgrade facilities to rural areas and introduce satellite TV services to urban households in coming years.

21 Source: Blue Book of China's Radio, Film and Television (2012).

5 Exports

The film and TV sector earned an estimated 2.3 billion yuan in export receipts in 2011, or 0.2% of whole economy service exports. Of this, around 90% was generated by the film industry, with the remaining 10% due to the activities of the television industry[22]. Film and television's 0.2% share of Chinese service exports compares with figures of 0.4% for financial services, 0.9% for communications and 1.8% for insurance services[23]. (It should be noted that these export figures represent a sub-set of the GDP values cited in Chapters 3 and 4.)

Table 5.1: Chinese service exports in 2011

Industry	Exports (billions yuan)	% of total services exports
Film and television	**2.3**	**0.2%**
Financial	5.2	0.4%
Communications	10.9	0.9%
Insurance	21.6	1.8%
Computer and Information	78.7	6.7%
Construction	95.6	8.1%
Transport	230.2	19.5%

Source: Blue Book of China's Radio, Film and Television (2012), WTO

22 Sources: the film industry figure is taken from the Blue Book of China's Radio, Film and Television (2012); television export estimates are sourced from the China Statistical Yearbook 2012.

23 Source: WTO

6 Tourism

Much recent attention has been paid to the phenomenon of film and TV tourism around the world. Oxford Economics has investigated the global development of this phenomenon with specific reference to the UK, as a part of previous research.[24]

Within Asia, the growth of South Korean *Hallyu* (popular culture including films, TV, music and food) has been well documented. *Hallyu* has acted to induce large number of foreign visitors to visit South Korea. Many of these come from within the Asia region.

There would not appear to be any true equivalent to *Hallyu* in respect of Chinese film and TV. Further, while it may be that some foreign visitors are induced to visit China due to Chinese film and TV productions, there has been no research of this phenomenon and it is therefore not possible to quantify how important it may be to the national economy.

Nonetheless a variety of Chinese academic studies have pointed to the fact that Chinese film and TV productions may be encouraging *domestic* tourism. Unfortunately these studies are typically focussed on film and TV induced tourism to specific sites and do not allow for any comprehensive national assessments to be drawn. Therefore (as is the case for international tourism) it is not possible to quantify the overall economic contribution of film and TV induced domestic tourism.

However, the studies referred to above also suggest that film and TV induced domestic tourism is a tangible phenomenon and that it would make an important contribution to such tourism. In particular, the following studies are of note:

- Wu and Hou[25], undertook survey work at Longquan Villa in Longquan Mountain Village, site of the CCTV series *Story of Liu Laogen.* According to their 2004 survey work, 74% of tourists come to the village “to see the home of Liu Laogen”.
- Pan and Chen[26] conducted a study of Peach Blossom Island in Zhejiang Province, scene of a number of past film dramas, including “The Eagle Shooting Heroes” and other films based on the works of the novelist Jin Yong. Some 45% of tourists surveyed in 2007 indicated that Jin Yong’s works and the films based on them influenced their choice to visit the island. (Some 600,000 people visited the island in 2006). While 70% of tourists wanted to experience the island’s scenery, 50% also wanted to have a “film and TV experience”, while 22% wanted to visit scenes where Jin Yong themed films were made. (Of course, some of these tourists may have visited the island due to the novels even if the films had never been made.)
- Pan has pointed to film-induced tourism in Hengdian and Xinchang.[27] In the case of the latter, tourism increased from 452,000 in 1998 to 1.4 million in 2002. This increase coincided with the filming and release of CCTV productions “Swordsman” and “Hero”, though obviously there may have been many other reasons for the rise of visitor numbers, such as a general rise in prosperity and tourism throughout China.
- Peng has pointed to the contribution that the film and TV industry can make to tourism within the Xiangi minority region.[28]
- Likewise, Liu has noted the contribution that film and TV productions featuring “Northeast subjects” have made towards regional tourism.[29]

24 Oxford Economics (2010), “*The Economic Impact of the UK Film Industry*”.

25 Wu, L, Hou, X (2006), “A Study on the Motivation of Movie-induced Tourists – A Case Study of Tourism in Longquan Villa of Tieling” *Human Geography*, Vol. 21, No.2.

26 Pan, L, Chen, H (2009), “Study on the Tourism Development in Non-theme Park Movie Locations: A Case Study of Taohua Island in Zhejiang”, *Journal of Subtropical Resources and Environment, Vol. 4, No.3.*

27 Pan, L, (2005), “The Impacts of Movies—Making on the Locations Tourism Development: A Case Studies of Hengdian and Xinchang”, *Economic Geography,* Vol 25, No. 6.

28 Peng, Y (2009), “Research on the Impact of the Film and TV Industry on the development of Tourism in the Xiangxis Minority Region”, *Commercial Research* No. 2.

29 Liu, H., (2009), “The Impact of ‘Northeast Subject’ TV and Film Plays on Local Tourism Industry and the Related Countermeasures” *Journal of Harbin University of Commerce* No. 3, Serial No. 106..

While these studies are of interest in their own right, as indicated, they do not allow for a comprehensive measure of the economic impact of film-induced domestic tourism. Further research may allow such a figure to be developed.

Nonetheless, these and other studies also point to other issues which are relevant to efforts to promote film tourism within China. For example, Ran and Lu see film-based tourism as one way of boosting tourist numbers to less visited areas such as Xinjiang. The authors call for a multi-pointed promotional program, involving active cooperation between local film and tourism authorities, including stepping up publicity efforts, creating a "culture of film tourism" and improving local tourist facilities to increase their attractiveness to film-related tourists[30].

Likewise, Liu suggests that the way forward for northeast tourism is to follow in the footsteps of successful examples such as Guilin and Liuzhou and to ensure that local themes are emphasised in film and television productions. One example is emphasising the themes of snow and ice culture in productions featuring Heilongjiang, or emphasising the area's folkloric traditions.

More mature film destinations may need to take a somewhat different approach however. Pan and Chen's work on the importance of film tourism is noted above. However the authors also stress the importance of building integrated tourist destinations and point out that film-related attractions alone will not be sufficient to sustain tourism over the longer term. In the case of Peach Blossom Island, film can therefore act as an important initial attractor. However local tourism authorities should not rely on visits to specific film-related sites alone, but also need to emphasise the area's natural, historical and cultural attractions. Doing so could promote a stronger and more diversified base for tourism.

Likewise, Wu and Hou note that while film is the major motivation for visits to Longquan Villa, underlying motives include the linkage between film and factors such as "confirmation", pursuing dreams, escape and seeking a beautiful environment. An obvious implication is that more mature film tourism destinations should seek to tap into these motivations, by offering additional attractions to film-related tourists which emphasise these features (e.g., marketing lesser-known local beauty spots).

The overall conclusion on Chinese film and television-related tourism is therefore as follows. The market is still largely undeveloped. There appears to be little foreign film-inspired tourism. Apart from a few "hot spots" there appears to be a significant development potential for domestic film and television tourism. However the strategies that various regions and locations need to pursue are likely to differ. Areas with little past experience of film and TV tourism may seek to focus on integrating their local tourism efforts with film and television productions, emphasising particular characteristics of their regions and ensuring that local facilities are suitable for the new arrivals.

More mature locations, on the other hand, might seek to broaden their appeal to those who were induced to come to an area by films and TV by offering a diverse range of activities. These might also tap into some of the basic motivations related to film-related tourism in the first instance such as a desire to see beautiful scenery or "escape".

30 Ran, H and Lu, Y, (2006), "A Discussion on the Development of Film and Television Tourism in Xinjiang", *Journal of Xinjiang Normal University*, Vol. 25, No. 3.

7 Conclusion

This report has provided a detailed overview of the film and television sectors in China, systematically quantifying the economic contribution of various sub-sectors of the industry. These estimates indicate that film and television make a material contribution to economic activity in the country, directly accounting for 0.2% of national GDP, 0.1% of total jobs and 0.2% of all government revenues. In absolute terms, these figures translate to 100 billion yuan, 909,000 jobs and 22 billion yuan in tax revenues respectively.

Moreover, including the indirect (via the supply chain) and induced (via the spending of those employed directly and indirectly) contributions, these figures rise to 0.6% of national GDP, 0.6% of jobs and 0.5% of government revenues. In absolute terms these figures translate to 272 billion yuan in GDP, 4.5 million jobs and 57 billion yuan in tax revenue. In addition to these effects are less readily quantifiable "catalytic" contributions such as the economic benefit derived by internal Chinese film and TV induced tourism.

Official data on historical box office and television & radio revenues shows that the film and television industries have grown hugely since 2006. Film box office revenues increased five-fold from 2006-2011 to reach 13.1 billion yuan in 2011. Adjusted for inflation, real box office receipts grew by more than three-and-a-half times during this period. Meanwhile, total television and radio revenues grew by almost two-and-a-half times from 2006-2011 (non-inflation adjusted), equivalent to an 85% increase in real terms. Figures recently released showed growth continued to be strong in 2012, with box office receipts totalling 17.1 billion yuan, 31% higher than in 2011, and making China the second-largest theatrical market in the world after the USA.

The factors underpinning the recent growth in film and TV in recent years - the world's largest population, strong economic growth and rising incomes – should continue to drive the sector in the future.

If the overseas experience holds true, the recent rise in cinema construction in China could hold the potential to produce other local spillover benefits (e.g., through higher spending in shopping malls associated with multiplex cinemas). However more work needs to be done to establish that these or other spillover benefits hold true in China.

Likewise, despite having some local "hot spots" China's film and television related tourism sector appears to remain underdeveloped, though the lack of any national data makes it difficult to determine how large such activity actually is. A way forward for regions with less developed film and television tourism may be for film productions to work closely with local tourism authorities to emphasise distinctive local features. In the case of more developed film tourism regions, a focus on integrating film-related tourism with a more diverse range of local activities, which tap into the same basic motivations which drove film related tourism, may be the preferred strategy.

8 Detailed methodology

8.1 Quantifying the direct contribution

Two data sources form the main basis of the estimates in this study: the "Blue Book of China's Radio, Film and Television" (BBCRFT) and "The Research Report on Chinese Film Industries" (RRCHI). The most recently published 2012 versions of these reports provide estimates for the calendar year 2011.

Direct gross output (i.e., revenue) for film and television is based on figures reported in BBCRFT and RRCHI. Home video sales are taken from Screen Digest estimates. GDP is estimated from output by applying GDP-to-output ratios for the "Radio, TV, film and video" sector reported in the official 2007 China Input-Output tables (the most recent tables available).

The study assumes film (box office) revenues are split 57% to exhibitors and 43% to producers/distributors in 2011. This split is reported by a number of publicly available articles and reports citing industry sources. For imported revenue-sharing films the study assumes Chinese distributors capture 30% and foreign producers 13% of the box office revenue. Again these estimates are based on publicly available information and industry reports[31]. With respect to co-productions, in line with domestic and imported films, the study assumes 43% of revenues go to producers and distributors. Of the 43% the model allocates half to foreign producers and half to domestic producers/distributors. This is in the absence of actual data on revenue sharing arrangements for co-productions in 2011. (Presumably the foreign/domestic split will depend on the relative contributions of foreign and domestic companies to the production/distribution costs.

Employment in TV is directly estimated from data in BBCRFT and RRCHI. Productivity in the home video industry is assumed to be equal to the economy-wide average.

31 For example, one source is a China Daily article - "Opening-up of movie industry urged" - published on the 10th February 2012. The article reports estimates of the domestic/foreign split as stated by a representative of Beijing Jiaxin Shidai Entertainment Company.

With respect to film employment, as data was not available to allow for the measurement China's film productivity, we have taken an approach which first estimates the ratio of film productivity to TV productivity, and then applies this ratio to TV productivity in China (which we have estimates for) to derive film productivity. We assume that the film to TV productivity ratio in China is the average of the ratios seen in Thailand and South Korea data, which shows that the film industry is around three times less productive (measured by GDP per employee) than the TV industry. No other country will have precisely the same ratio of film to TV productivity as China, so it is preferable to base such a ratio on more than one country to smooth out any potential idiosyncrasies and/or irregularities. Alternatively, basing such a ratio on a large number of countries drawn from across the world would risk distorting the measure by including markets which might be very different to China's (e.g., US and Sweden). As such, Thailand and South Korea were chosen because they are both neighbouring countries of China lying within East Asia and face many of the same economic challenges (representing a combination of an emerging and a "recently emerged" market respectively). Effectively, the assumption is that the Film & TV industry in China is more similar to Thailand and South Korea (and other East Asian countries) than other non-Asian (developed) countries.

In the case of taxation, our figures combine knowledge of the country's tax system with estimated industry revenue and profits, and employee wage income. Taxes included in the taxation estimate consist of employees' income tax, Business Tax, Enterprise Tax and VAT.

Wage income for TV is derived from official data on earnings in the TV and radio industry. Wage income in the film industry is estimated by assuming that average per worker earnings is around two times less than that of TV workers – a ratio based on film and TV wage estimates in South Korea and Thailand. Industry profits are then, by definition, the difference between GDP and total wage income (allowing for taxes on production).

8.2 Modelling the total economic contribution

Broadly speaking, input-output multipliers measure the relationship between an initial impact (such as spending) and final outcomes across the whole of the economy in terms of gross output, GDP and employment.

This study uses "Type II" multipliers. Type II multipliers allow for both the "indirect" supply chain effects (i.e., the film and TV industries purchasing from other industries) and "induced" effects which arise from workers spending wages (from direct and indirect employment) on goods and services. (Studies which only allow for the indirect or supply chain effects use what is known as Type I multipliers. Type II multipliers will be larger than Type I multipliers.)

In order to estimate the indirect and induced contributions, we used the official 135-sector China Input Output (IO) table for the year 2007[32] (the most up-to-date tables available). An IO table details economy-wide transactions between sectors in matrix form, quantifying the extent to which different industries sell to and purchase from each other.

By appropriately manipulating the IO matrix, we were able to estimate the contribution of, for example, film production on the rest of the economy through its supply-chain purchases (indirect effect) and through the spending of those employed directly and indirectly in film production (induced effect).

The "Radio, TV, film and video" sector within the IO tables is the closest match to the TV and film industries which are the focus of this study. Accordingly, the multipliers for this IO sector were used as the basis for the indirect and induced effects in the study.

We then applied the level of direct gross output (or revenue) derived from the values reported in BBCRFT and RRCHI to the IO tables. This allowed the estimation of indirect and induced effects in the rest of the economy.

32 Source: *Input-Output Tables of China* , National Bureau of Statistics of China (2009)

8.3 Adjustments for leakage and double counting

Generally when domestic demand expands there will also be an increase in the demand for imports. For example, if consumers spend money on the film and TV industry some of this spending will flow out of the country (e.g., due to the payment of film royalties or the purchase of imported materials by production companies). This is formally known as "leakage". Allowing for leakage is important as otherwise the indirect and induced effects will be overestimated.

The standard format of the China IO tables does not allow for the direct estimation of such leakage on a disaggregated industry by industry basis. Accordingly, the tables were adjusted to allow for such leakage using industry imports data, derived from the "imported goods and services" worksheet of the China IO tables.

The Type II multipliers used in this study were also (downwardly) adjusted to reflect the fact that, in any given year, if employees currently working for the film and TV industries were *not* employed then they would still spend money on goods and services by drawing on alternative sources of income or from savings. In China unemployment benefits are limited. The major source of funds for the unemployed is likely to be in the form of individuals' savings. We have therefore adjusted down the Type II multiplier by using the savings rate to account for the spending that would still happen in the event of unemployment.

Downward adjustments to the multiplier contributions would also need to be made to avoid double-counting of output. This is because, in some cases, part of a particular industry's supply chain includes sub-sectors that have already been classified as part of the (direct) film, video and television market. For example, film exhibitors purchase goods and services from film distributors (e.g., film prints and the rights to show the film), so film distribution forms part of the supply-chain or indirect effects of film exhibition. However film distribution activity is already included as part of the direct effects of the film and television industries.

This double-counting would be captured as a sub-set of the "own-industry" purchases of the "Radio, TV, Film and Video" IO sector (the IO sector chosen to represent the multipliers in this study). In our example the exhibitor purchases from film distributors would be captured within this "own-industry" figure. We therefore set the own-industry purchases to be zero to avoid the double-counting issue and lower the multipliers. Note that this is likely to be an over-compensation for the double-counting effect, as the adjustment would also exclude legitimate (i.e., non double-counting) purchases which should be captured within the multiplier; for example radio services purchased by the film industry. Therefore the multiplier effects reported in this study may be considered conservative estimates.

Table 8.1: Derivation of gross output multipliers for the film and television industries

Adjustments to gross output multipliers	
Radio, TV, film and video Type I multiplier (unadjusted from IO tables)	2.93
Type I multiplier adjusted for import leakage	2.46
Type I multiplier adjusted for import leakage and double counting (final report multiplier)	2.33
Radio, TV, film and video Type II multiplier (unadjusted from IO tables)	4.77
Type II multiplier adjusted for import leakage	3.71
Type II multiplier adjusted for import leakage and savings	3.08
Type II multiplier adjusted for import leakage, savings and double counting (final report multiplier)	2.91

Source: National Bureau of Statistics of China; Oxford Economics calculations

8.4 Estimating GDP, employment and earnings

The gross output totals derived from the above modelling were converted into estimates for GDP using sectoral ratios of value added to gross output taken from the IO tables. These were then converted into employment estimates using economy average productivity (measured in terms of GDP per worker) for 2011.[33]

This process was repeated for each sub-sector to generate separate estimates for the total GDP and employment contribution, consisting of direct, indirect and induced effects. From this one can then calculate the implied GDP and employment multipliers.

For the indirect and induced contributions we applied the average economy-wide gross annual wage[34] to our estimate of indirect and induced employment in each sub-sector.

The final gross output, GDP and employment multipliers associated with the modelling in the study are reported in Table 8.2.

Table 8.2: Gross output, GDP and employment multipliers (final report multipliers)

	Gross Output		GDP		Employment	
	Type I multiplier	Type II multiplier	Type I multiplier	Type II multiplier	Type I multiplier	Type II multiplier
Film industry (all sub-sectors)	2.33	2.91	2.12	2.71	2.05	2.61
Television industry (all sub-sectors)	2.33	2.91	2.12	2.71	4.03	5.65
Home video industry	2.33	2.91	2.12	2.71	2.12	2.71

Source: National Bureau of Statistics of China; Oxford Economics calculations

33, 34 Source: National Bureau of Statistics of China.

8.5 Modelling tax revenues

Tax incomes from the following sources are included in the tax contribution from indirect and induced economic contributions: employees' income tax, Business Tax and Enterprise Tax. Note the VAT income of indirect and induced contributions is not included in the calculation.

8.6 GDP measure

GDP can either be measured at basic prices or at market prices. The estimates produced in this report are measured using GDP at *basic prices*, which excludes taxes less subsidies on products (taxes on products include VAT and excise duties). Gross Value Added (GVA) is another term for GDP at basic prices.

GDP at market prices is the "headline measure" of GDP used in China and most other countries. GDP at market prices includes taxes less subsidies on products.

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