



The economic contribution  
of the film and television  
industries in Indonesia



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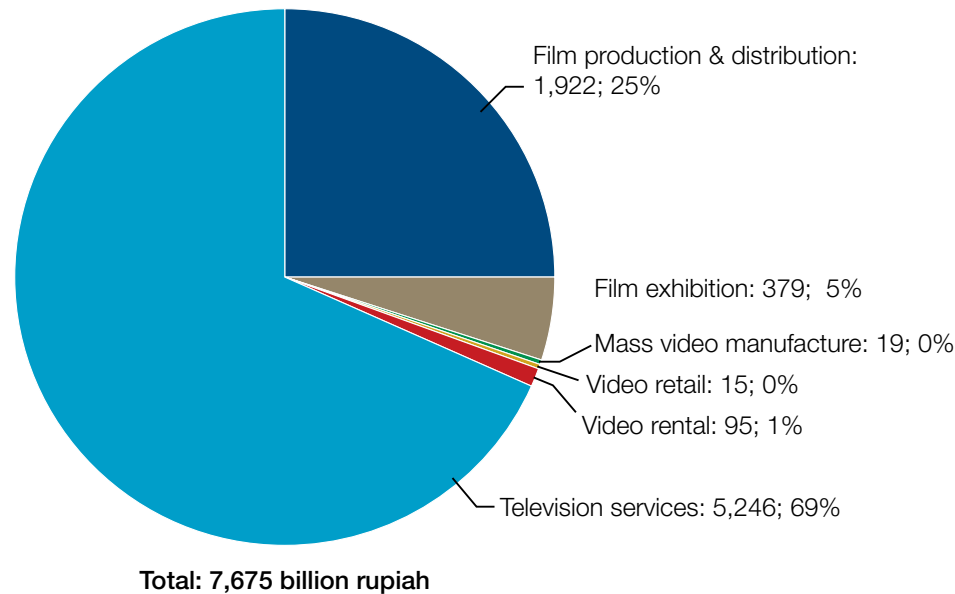
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# 1 Key findings

The film and television sectors make a notable direct contribution to the Indonesian economy...

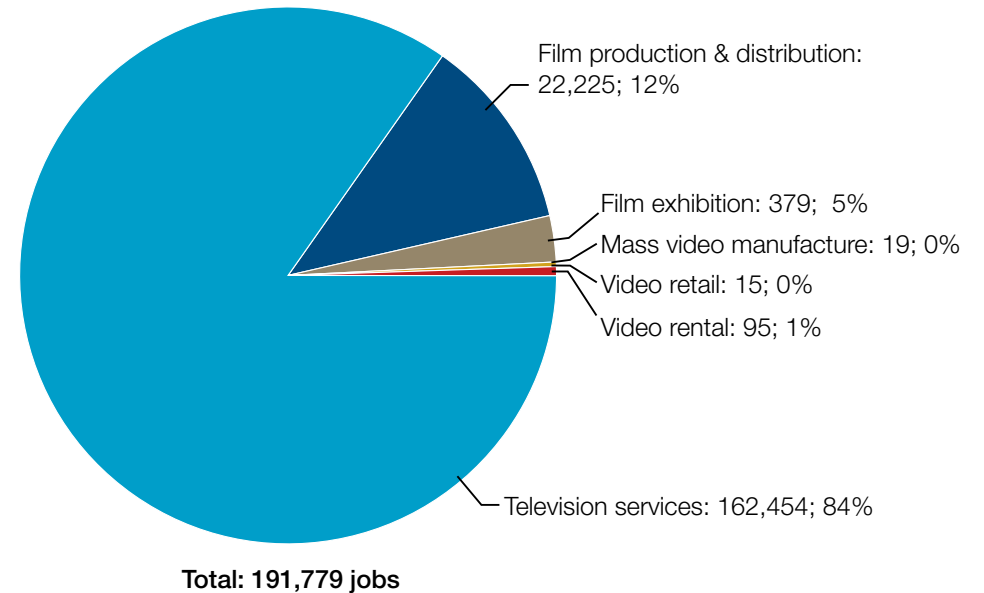
■ Oxford Economics estimates – based on official and other data – show that the film and television industries directly contributed an estimated **7,675 billion Rupiah** to the Indonesian economy in gross domestic product (GDP)<sup>1</sup> in 2010. In the process they directly supported 191,800 jobs and generated some **785 billion Rupiah** in tax revenues.

**Chart 1.1: Direct GDP of the Indonesian film and TV industry, 2010 (billions of Rupiah and percentage split)**



<sup>1</sup> 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 'Detailed methodology' at the end of this report.)

**Chart 1.2: Direct employment of the Indonesian film and TV industry, 2010 (persons employed and percentage split)**



■ The film and television industries' direct contribution to GDP in 2010 was equivalent to some 0.12% of total national income. Comparing this contribution with some other sectors officially classified as part of the 'creative industries' cluster, the industry's GDP is broadly on a par with the estimated combined GDP of 'computer software & services' and 'R&D' and is roughly double the estimated combined value of 'market & art goods', 'interactive games' and 'performing arts'. This contribution was, however, somewhat smaller than those of, for example, design and music.

■ Meanwhile, film and television's direct share of economy employment was 0.18% while it generated 0.11% of total tax revenues.

**Table 1.1: Comparison of industry GDP (billions of Rupiah)**

Industry	2010 GDP (estimated) billions of Rupiah	% of total GDP
Design	24,664	0.39
Music	20,205	0.32
<b>Film and television industries</b>	<b>7,675</b>	<b>0.12</b>
Computer software and R&D	7,491	0.12
Market and art goods, interactive games, performing arts	3,587	0.06

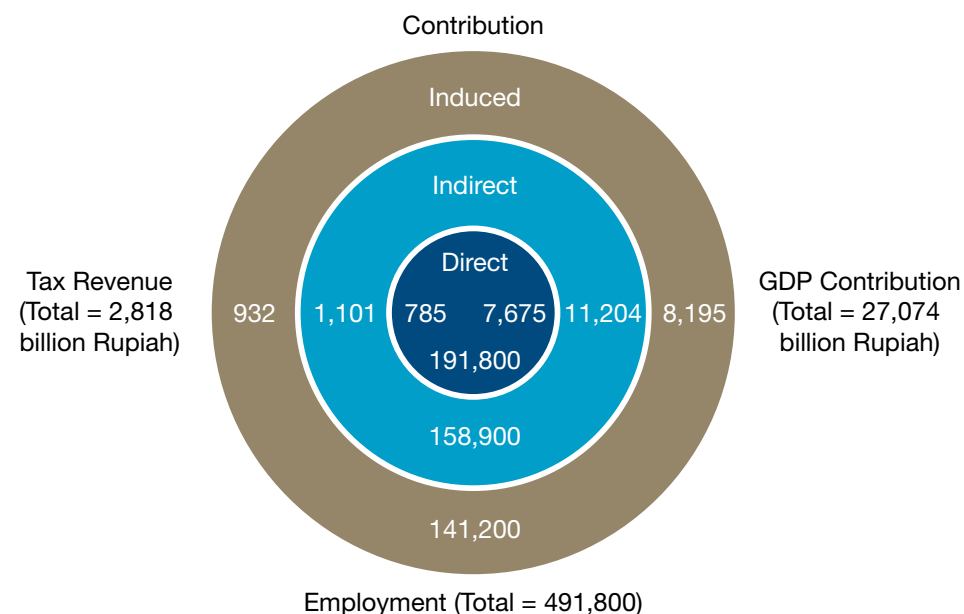
1 For sectors other than film and television, the values are based on 2008 data, produced as part of the Commerce Department's "Industri Kreatif" project, grossed up in proportion to the estimated increase in film and TV GDP and adjusted from market prices to basic prices (see section 6.6).

... and lend more significant support to that economy through multiplier effects, making the total contribution larger

- The film and TV industries also produce 'indirect' and 'induced' effects across the entire Indonesian economy. As a result of purchases by the film and television sectors from other industries within the country, and of further transactions throughout various supply chains, we estimate that these sectors made an additional 'indirect' GDP contribution of 11,204 billion Rupiah in 2010, thereby supporting a further 158,900 jobs and generating an extra 1,101 billion Rupiah of tax revenues.

***"Taking into account 'multiplier' effects, in 2010 the Indonesian film and television industries generated some 27,074 billion Rupiah of GDP for their home country..."***

- In addition, spending by individuals employed either in these sectors or in the associated supply chains is estimated to have generated a further 8,195 billion Rupiah of GDP through the so-called 'induced' route. That would have been sufficient to support another 141,200 jobs and to have yielded an additional 932 billion Rupiah in tax receipts.
- Taking the direct, indirect and induced contributions together<sup>2</sup>, we estimate that the film and television industry's total economic contribution to GDP in 2010 was **27,074 billion Rupiah of GDP** (0.43% of economy-wide GDP). In addition, it supported **491,800 jobs** overall (0.45% of national employment). And it generated total tax revenues of **2,818 billion Rupiah** (0.39% of total revenues).

**Figure 1.1: Total contribution to Indonesian GDP, tax and employment, 2010**

***"... which was sufficient to support 491,800 jobs and provide 2,818 billion Rupiah in taxes."***

2 Some of the totals may not appear to sum exactly due to the impact of rounding. (Jobs are rounded to the nearest 100 and money values to the nearest 1 billion Rupiah.)

### Industry productivity has faced recent challenges...

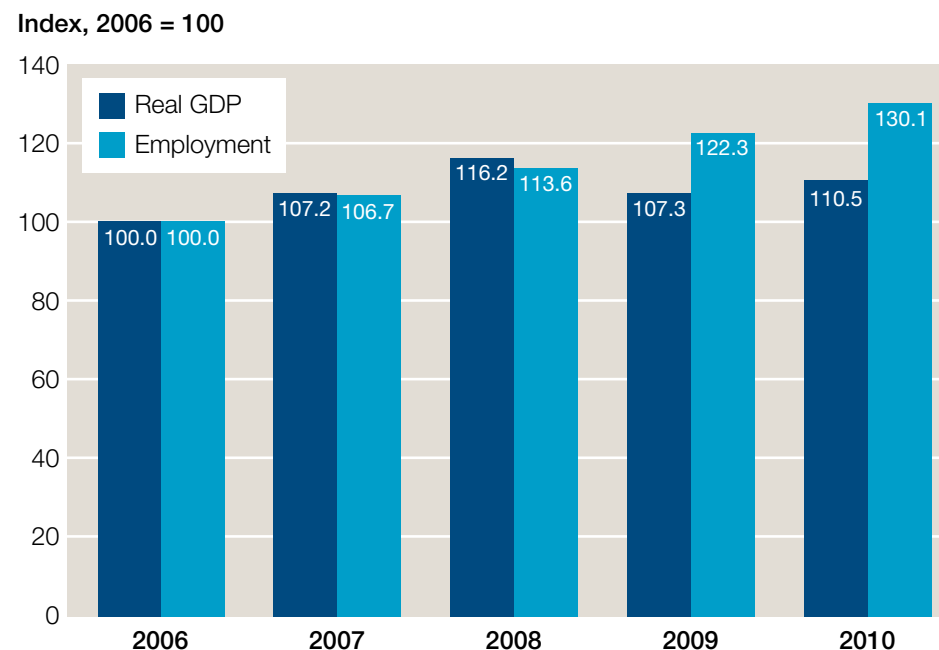
- Each person employed in the film and television sector in 2010 generated, on average, 40.0 million Rupiah of GDP – below the economy-wide average of 58.0 million and a little short of the average for non-financial services as a whole of 43.3 million.
- However, that partly reflects the fact that sector employment continued to grow in 2009 and 2010, despite a contraction in GDP. In 2008, productivity had been clearly above the non-financial services average. The apparent fall-off in productivity may simply be a temporary issue and it should be noted that in some countries there is a tendency for employment to only respond to changes in GDP with a considerable lag.

### ...but the sector is expanding again having suffered in the downturn

- The direct contribution to GDP increased by 16.2% in real terms between 2006 and 2008, with employment growing by 13.6%. By comparison, whole economy GDP grew by 14.5%, and employment by 7.4%, over that period.
- Estimates based on unofficial data suggest that the direct contribution to GDP subsequently fell by 7.7% in real terms in 2009, although employment still grew by 7.7%. By contrast, the economy as a whole escaped recession with real GDP growing by 2.6% and employment by 2.3%.

- In 2010, the industry made a modest recovery with growth of 3.0% in real GDP and 6.4% in employment. (Whole economy GDP grew by 6.4% and employment by 3.2%).

**Chart 1.3: Film and TV – real GDP and employment 2006-10**



**Table 1.2: Comparison of industry GDP (billions of Rupiah)**

Metric	Gross Output (bns Rupiah)		GDP (bns Rupiah)		Employment ('000s jobs)		Earnings (bns Rupiah)		Tax (bns Rupiah)	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Film Production & Distribution	7,992	19,022	1,922	7,135	22.2	102.8	1,294	3,047	197	743
Film Exhibition	2,785	6,629	379	2,195	5.2	33.3	47	658	39	229
Mass Video Manufacture	140	333	19	110	0.2	1.6	3	33	2	12
Video Retail	108	256	15	85	0.4	1.5	5	29	1	9
Video Rental	696	1,657	95	549	1.3	8.3	12	164	10	57
Television Services	18,024	42,898	5,246	17,001	162.5	344.3	1,944	5,898	537	1,769
<b>Total</b>	<b>29,745</b>	<b>70,795</b>	<b>7,675</b>	<b>27,074</b>	<b>191.8</b>	<b>491.8</b>	<b>3,305</b>	<b>9,829</b>	<b>785</b>	<b>2,818</b>

## There is room for improvement in export earnings ...

- Export earnings are estimated by both official and unofficial sources to be negligible (one consequence of which is that we do not include a separate chapter analysing this aspect of the sector's performance in this report).
- Looking ahead, however, improved international competitiveness and export promotion are identified as key strategic aims for the film industry in the government-backed 'Industri Kreatif' study.

## ... and in film-induced tourism

- Also, there is little data and information concerned with film-induced tourism (either international or domestic), suggesting that this too is likely to be of little significance at the present time – though this does not of course rule out the possibility of growth in this area in future. (As a consequence, no separate chapter could be included in this report on this topic.)

## 2 How we arrived at these figures

Oxford Economics was commissioned by the Motion Picture Association (MPA) to assess the economic contribution of the film and television industries in Indonesia.

The starting point for our estimates was provided by data from the Departemen Perdagangan (Commerce Department), from its 'Industri Kreatif Indonesia' project. But as the latest figures for the sub-sector level required are for 2008, we also used data from the private company PT Dataindo Inti Swakarska (DIS) in order to estimate developments through to 2010. DIS findings were also used to refine and broaden our estimates for 2006-08. (Details are set out in the final chapter of this report.)

### 2.1 Direct economic contributions

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

GDP and employment data are derived from Industri Kreatif figures for the 'television and radio' and 'film, video and photography' sub-sectors, with adjustments made to exclude radio and photography and to go from the market price to the basic price GDP measure. DIS data is then used to arrive at estimates for gross output and to assess the contribution of sub-sectors within the wider 'film' (including video) industry.

Our tax estimates rely on combining estimated industry income with knowledge of the country's tax system and tax-to-GDP ratios found for broader sectors of the Indonesian economy.

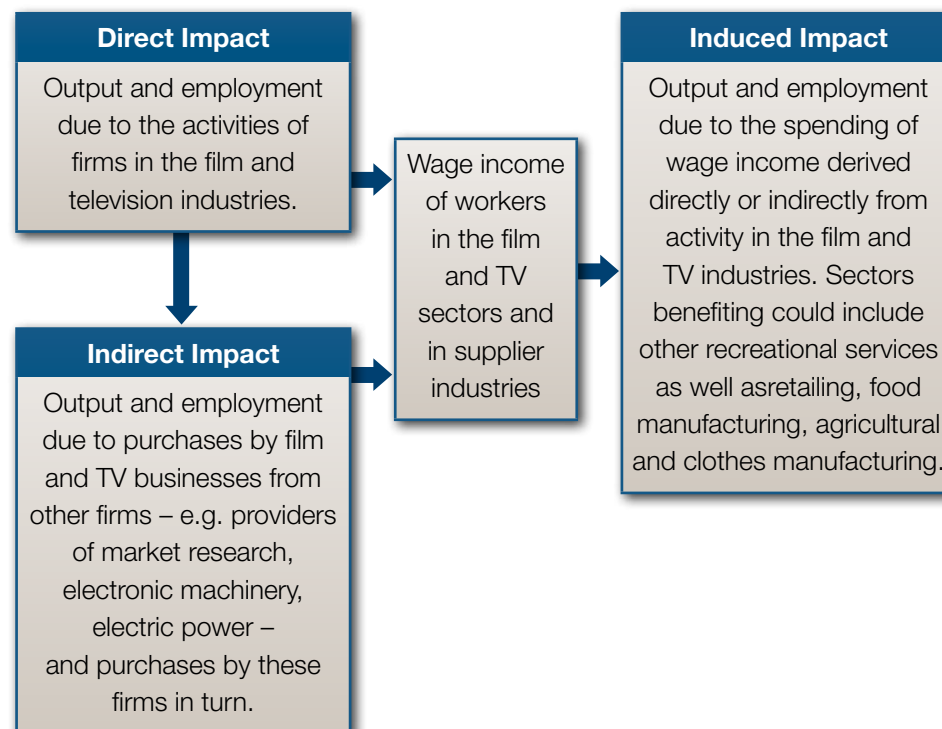
### 2.2 Additional economic contributions

To assess the total economic contribution of these sectors we also take into account further channels of impact. The effect of two key channels can be quantified by combining our estimates of direct contributions with indirect output 'multipliers' published in an Industri Kreatif report, and an induced output 'multiplier' implied by national accounts data. GDP-to-output, jobs-to-GDP and tax-to-GDP ratios for broader sectors of the Indonesian economy are then used to arrive at our final numbers.

These estimates therefore cover:

- Indirect contributions, which relate to the output and jobs supported in Indonesian-based supply chains, due to purchases by Indonesian film and TV companies of goods and services from other firms located in the country, purchases by those suppliers in turn, and so on throughout the chains.
- Induced contributions, i.e. the Indonesian output and jobs supported by workers in the film and TV industries – and other employees throughout the supply chains – spending the earnings ultimately derived from film and TV activities.

Figure 2.1: The channels of economic impact





## 3 Film industry

In this chapter we assess the economic contribution of the film sector and its sub-sectors. After a brief descriptive overview of the industry, we look at the measured contribution to GDP, taxes and employment of each of its sub-sectors, the most important of which are film production and film exhibition.

According to the government-backed Industri Kreatif project<sup>3</sup>, film and video industry ‘strengths’ include the number of producers, directors and animated film workers, an improvement, in recent years, in the ability of domestic films to compete with imported films, helped by the Indonesian language and culture, and adequate processing and copying technologies.

However, that report cited more industry weaknesses and threats, including the low number of screenwriters, low appreciation of film on the part of the public, the competitiveness of weaker producers and operators, the high cost of cinema operation, and the concentration of cinemas in the Greater Jakarta area amongst many other things.

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***“An improved ability of domestic films to compete with imports – helped by the Indonesian language and culture – is cited as an industry ‘strength’ in a government-backed report.”***

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To address these issues and enable the sector to contribute to the hoped-for step-up in the economic role of Indonesia’s creative industries more generally, a policy strategy has been set out aiming to: increase the attractiveness of the industry to workers, investors, producers and distributors; strengthen the industrial structure and improve the technologies used; and step up the industry’s rate of innovation with a view to raising the presence of Indonesian films in overseas markets. The associated policy plan includes an aim for Indonesia to host a World Film Festival amongst many other things.

<sup>3</sup> Departemen Perdagangan (Commerce Department), ‘Rencana Pengembangan – 14 Subsektor Kreatif 2009-15’, 2008, page 221.

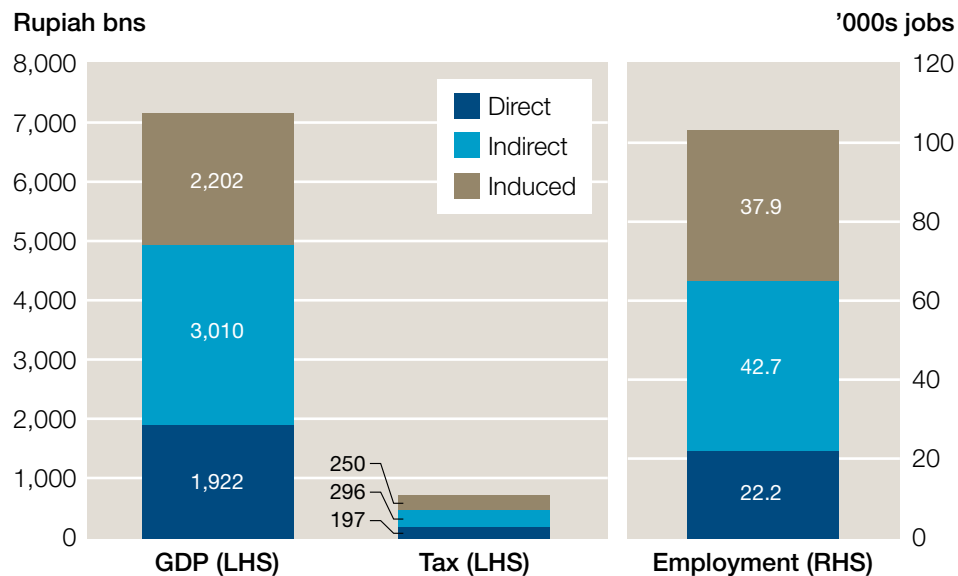
### 3.1 Film production and distribution

By ‘film production’ we mean the physical process of producing a film, i.e. the filming of scenes at a studio and the editing and revision of the final content. Key supplier sectors include fashion and make-up, hi-tech equipment manufacturing and the utilities sector. The ‘distribution’ activities also included here relate to the launching and sustaining of films in the market place, but exclude the mass manufacture, retail and rental of videos which we have examined separately. Key supplier sectors in the case of film distribution include business services (particularly advertising and PR) and transport services.

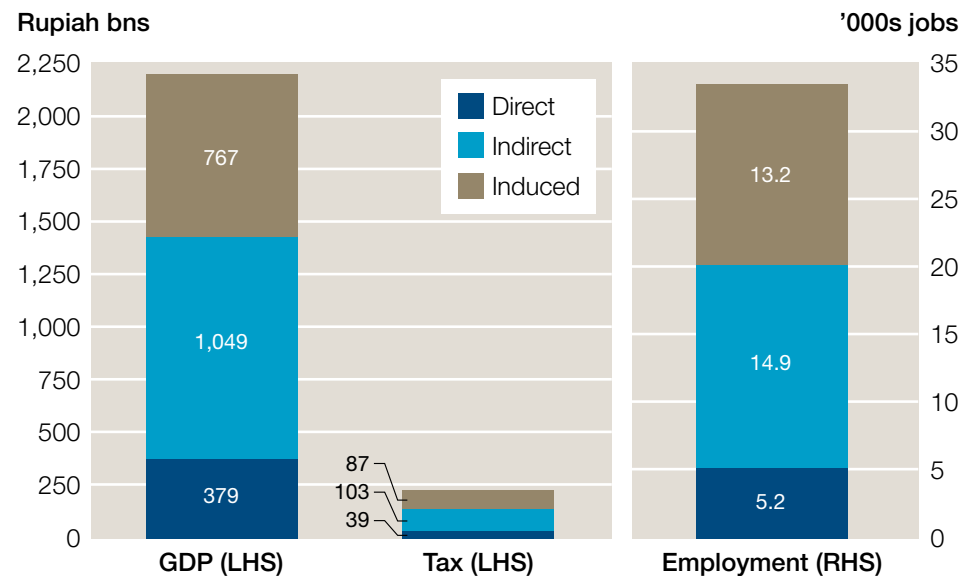
We estimate that in 2010 film production and distribution was worth some 1,922 billion Rupiah in GDP, directly supporting 22,200 jobs and generating 197 billion Rupiah in tax revenue. Taking into account indirect and induced effects these figures rise to 7,135 billion Rupiah in GDP, supporting 102,800 jobs and raising 743 billion Rupiah in tax receipts. (Unfortunately data are not available to allow us to estimate the contributions of ‘production’ and ‘distribution’ separately.)

The film production and distribution sector therefore accounts for 25% of the overall direct GDP of the combined film and television sector, and for 12% of employment. Its productivity is therefore above the average for the overall sector.

**Chart 3.1: Economic contribution of film production & distribution, 2010**



**Chart 3.2: Economic contribution of film exhibition, 2010**



### 3.2 Film exhibition

By 'film exhibition' we mean the process of screening films to the public, at indoor and outdoor cinemas and through public video exhibition. Aside from film production supplier sectors include food and beverage wholesalers, maintenance services and utilities – most notably suppliers of electric power.

We estimate that the direct GDP of film exhibition was 379 billion Rupiah in 2010, supporting some 5,200 jobs. Moreover, this activity helped to generate 39 billion Rupiah in tax revenue. Taking into account indirect and induced effects these figures rise to 2,195 billion Rupiah in GDP, supporting 33,300 jobs and raising 229 billion Rupiah in tax receipts.

The exhibition sector therefore accounts for 5% of the overall direct GDP of the combined film and television sector, and for 3% of employment. Its productivity is therefore above the average for the overall sector.

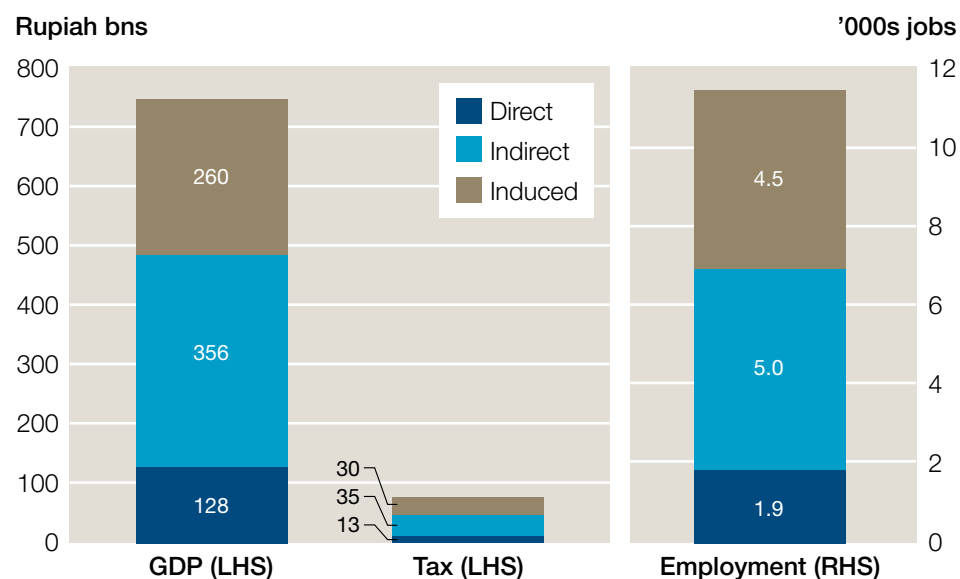
### 3.3 Home entertainment

For the purposes of this report 'home entertainment' comprises mass manufacture of videos, video retail and video rental. As Chart 3.3 suggests, even the combined contribution of these sectors is modest compared with public film exhibition via cinemas and other outlets, with video rental contributing more than video retail.

We estimate that the video manufacturing, video rental and video retail sectors combined directly contributed 128 billion Rupiah to Indonesian GDP in 2010, supporting some 1,900 jobs and generating 13 billion Rupiah in tax revenues. (Separate estimates for each of the sub-sectors are included in Table 1.2 in Chapter 1.) These sectors therefore accounted for 1.7% of the total direct GDP of the combined film and television industry in Indonesia, and for broadly 1.0% of employment.

Taking into account indirect and induced impacts, these sectors' total contribution to GDP was 744 billion Rupiah, supporting 11,400 jobs and generating 78 billion Rupiah in tax revenues. Their share of the wider film and TV industry's total contribution to Indonesian GDP and employment is, therefore, clearly higher than their share of the direct contribution, at 2.7% and 2.3% respectively, on the basis of our methodology as set out in Chapter 6. This reflects the fact that their procurement from other sectors is comparatively high relative to their GDP. And as explained in Chapter 6, if the total contribution of these sub-sectors were calculated in isolation (rather than as part of the wider 'film and television sector'), then the measured total contributions would be higher still due to the potential impact of their activities on 'film production' output.

**Chart 3.3: Economic contribution of home entertainment**



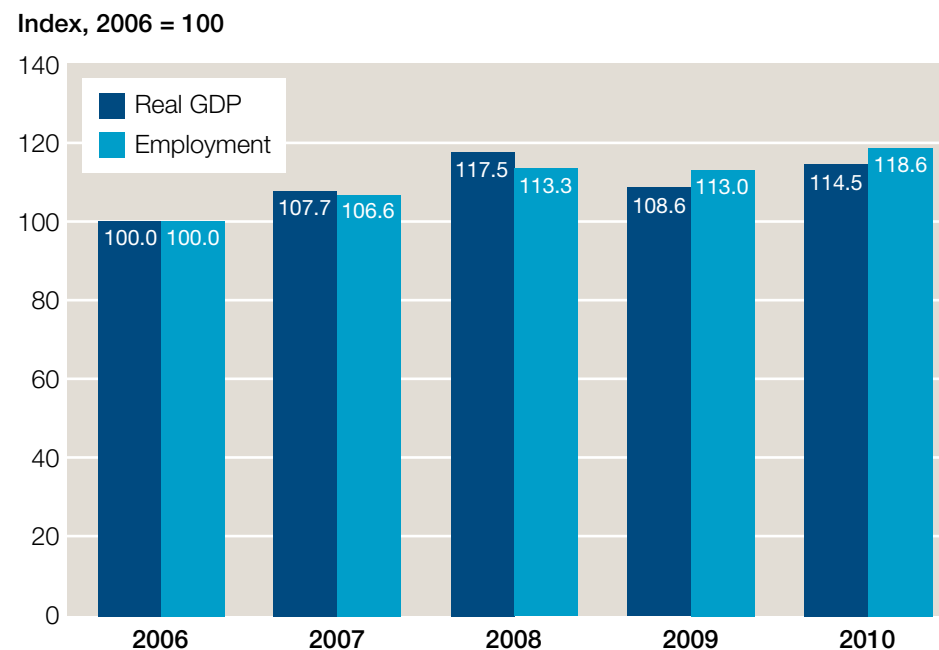
*“The GDP of the film production and distribution sector increased by 27% in inflation-adjusted terms between 2006 and 2008, but suffered in the subsequent economic downturn.”*

### 3.4 Trends over time

In terms of recent trends we estimate that real direct GDP in the film production and distribution sector increased by 27.1% between 2006 and 2008, before falling by 7.5% in 2009 and increasing by 5.7% in 2010. Employment rose by 14.2% between 2006 and 2008, fell by 2.6% in 2009 and increased by 5.4% in 2010. For the film exhibition sector meanwhile we estimate that real direct GDP fell by 8.1% between 2006 and 2008, and by a further 7.9% in 2009, before increasing by 4.2% in 2010. Employment nevertheless grew by 13.7% between 2006 and 2008, and by a further 8.6% in 2009 and 4.0% in 2010.

For the film sector as a whole, this meant that GDP increased by 17.5% between 2006 and 2008, fell by 7.6% in 2009 and rose by 5.4% in 2010. Employment increased by 13.3% over the two years to 2008, fell by 0.3% in 2009 and rose by 6.5% in 2010.

**Chart 3.4: Film industry real GDP and employment (2006-10)**



## 4 Television industry

In this chapter we examine the Indonesian television industry, which is significantly larger than the film industry in terms of GDP and employment. After a brief introductory overview we set out the key metrics for the sector as a whole, though data do not permit any detailed breakdowns of the TV industry.

The number of private TV stations in Indonesia has increased significantly over the past decade or so, while the government has continued to own and run one broadcaster (TVRI). Traditional free-to-air broadcasting remains dominant, with advertising revenues playing a vital role, but pay-TV is becoming more important, as are new technologies such as transmission over the internet.

As well as film production key supplier industries include manufacture of electric and electronic equipment, maintenance of equipment and advertising and market research services.

The government-backed Industri Kreatif Indonesia project<sup>4</sup> suggests that the television industry has a number of ‘strengths’, including the flow of graduate entrants into the sector, the growing number of stations, diversity of content provided, geographical reach and standards of professionalism.

Compared with the film sector, the authors’ assessment points to a better balance between ‘strengths’ and ‘weaknesses’, but several weaknesses are nevertheless identified. These include management and other specific skills, the concentration of activity and talent in Jakarta, the fact that – due to the available technology – post-production work is largely undertaken abroad, the existence of several regulatory and licensing issues, and the difficulties that local operations have in attracting finance.

To address these issues the Commerce Department has set out a policy strategy, with the key aims of: strengthening regulatory structures; strengthening skills and infrastructure; and further broadening the range of activities undertaken to include

more local operations. Specific policy actions identified include the setting up of education and training institutions and continuing with preparations for the transition to digital technology.

### 4.1 Television industry

We estimate that the direct GDP of the television sector was worth 5,246 billion Rupiah in 2010, directly supporting 162,500 jobs and generating 537 billion Rupiah in tax revenue. Taking into account indirect and induced effects these figures rise to 17,001 billion Rupiah in GDP, sufficient to account for 344,300 jobs and yield 1,769 billion Rupiah in tax receipts.

The television sector therefore accounts for 68% of the direct GDP of the combined ‘film and television’ industry, and for 85% of direct employment. Its productivity is, therefore, lower than that of the film industry. At 32.3 million Rupiah per employee in 2010, that is now below the average for the non-financial services sector as a whole, of 43.3 million, having been broadly on a par with that broader sector’s performance as recently as 2008.

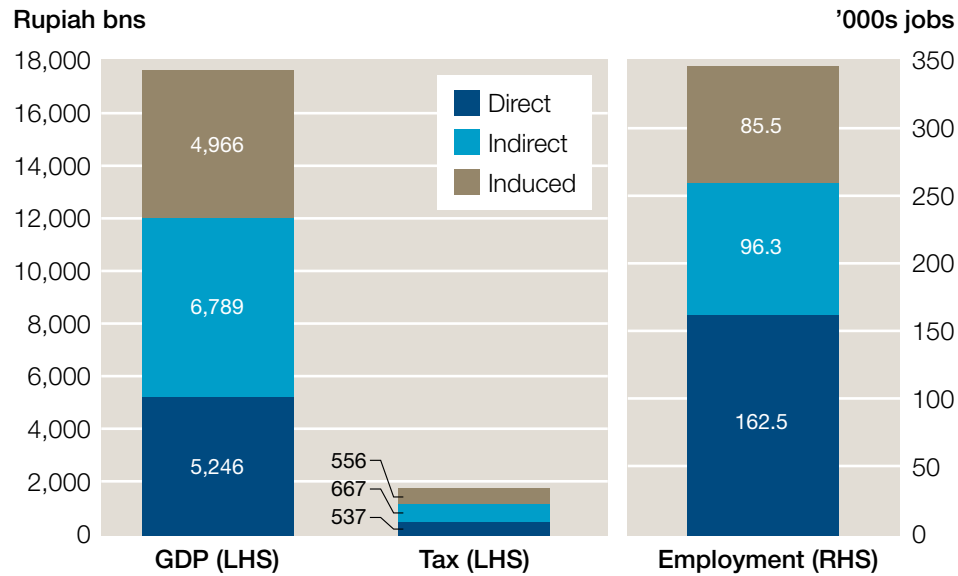
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*“The television sector’s strengths, as identified in an official report, include the growing number of stations and the diversity of content provided.”*

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<sup>4</sup> Departemen Perdagangan (Commerce Department), ‘Rencana Pengembangan – 14 Subsektor Kreatif 2009-15’, 2008, page 424.

**Chart 4.1: Economic contribution of television activities, 2010**

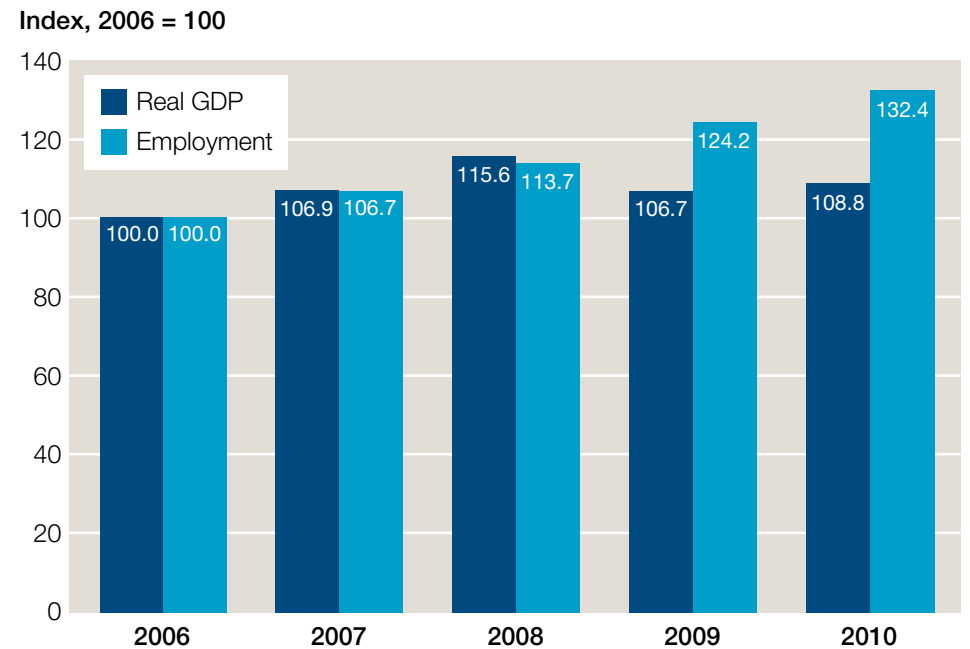


*“The GDP of the television sector increased by 16% in real terms between 2006 and 2008, and is recovering from the setback of 2009.”*

## 4.2 Trends over time

In terms of recent trends, real direct GDP is estimated to have increased by 15.6% between 2006 and 2008, before falling (on the basis of unofficial estimates) by 7.7% in 2009 and increasing by 2.0% in 2010. Employment rose by 13.7% between 2006 and 2008, and by a further 9.3% in 2009 and 6.6% in 2010.

**Chart 4.2: Television industry real GDP and employment (2006-10)**



## 5 Conclusion

This report has provided a detailed overview of the film and television sectors in Indonesia, systematically quantifying the economic impact of various sub-sectors of the industry.

These estimates indicate that film and television make a material contribution to economic activity in Indonesia, directly contributing 7,675 billion Rupiah of GDP, in turn supporting 191,800 jobs and generating 785 billion Rupiah of tax revenues. The sector therefore accounts for 0.12% of total Indonesian GDP, 0.18% of total jobs across the economy and 0.11% of the country's total tax take.

Allowing for “multiplier” effects and taking the direct, indirect and induced contributions together, we can say that the industry's total economic contribution in 2010 was 27,074 billion Rupiah of GDP. Associated with this activity, the sector's total contribution to employment was some 491,800 jobs and its total contribution to tax revenues was 2,818 billion Rupiah. On this basis the sector contributed 0.43% of total GDP in the country, 0.45% of all jobs and 0.39% of overall tax revenues.

The industry's direct contribution to GDP grew by 7.2% in 2007 and a further 8.4% in 2008, before falling 7.7% in 2009. This output subsequently recovered by 3.0% in 2010. Direct employment in the industry grew in each of those four years, by 6.7%, 6.5%, 7.7% and 6.4% respectively.

As a result the industry's total contribution to GDP rose by 6.9% in 2007 and 6.5% in 2008, before falling by 5.7% in 2009 and recovering by 3.1% in 2010. Associated with this, the sector's total contribution to employment rose by 5.5% in 2007 and 3.0% in 2008, edged down by 0.5% in 2009 and increased by 2.8% in 2010.

Looking ahead, it is likely that the film and TV industries will continue to grow, along with broad-based growth in the Indonesian economy. Based on preliminary DIS projections we estimate that the direct value of the film and TV industries could have reached 8,265 billion rupiah in 2011. However these projections are based on preliminary data and do not appear to have allowed for the impact of the film import tax dispute which affected the distribution of films in Indonesia, particularly in multiplexes. This dispute has now been resolved, so it is likely that growth will be back on track in 2012 and beyond.

For the medium-term, there are sound reasons to believe that the industry will grow at least in line with GDP, and quite possibly more quickly. At present, Indonesia has little more than 600 modern screens, to service a total population of some 240 million. The country is, therefore, highly ‘under screened’, meaning that there is plenty of potential for growth in that area. There is also clear scope to push up the volume of film exports – which is a key government aim for the sector – given their negligible value in recent years.

## 6 Detailed methodology

### 6.1 Quantifying the direct contribution

The starting point for our quantification of the direct contribution is the detailed sub-sector GDP and employment statistics published by the Departemen Perdagangan (Commerce Department) as part of its Industri Kreatif project<sup>5</sup>. The latest of these official figures available, at the detailed sub-sector level required, relate to 2008, so our first step was to establish the position in that year.

To get to the GDP and employment measures required we made the following adjustments to the Industri Kreatif data:

- GDP and employment for the television sector were arrived at by reducing the Industri Kreatif data for ‘television and radio’, in the light of detailed company employment figures found in reports on the industry by private company PT Dataindo Inti Swakarska (DIS)<sup>6</sup>.
- GDP and employment figures for the film industry and its sub-sectors were found by adjusting the Industri Kreatif data for ‘film, video and photography’ by a modest amount, to eliminate the (still) photography element. DIS data on ‘film and video production and distribution’ and ‘cinema’ (including video rental) imply that the contribution of photography to the wider sector can only be small.

5 Departemen Perdagangan (Commerce Department), ‘Studi Industri Kreatif Indonesia 2009 Update’ and related data tables found via the project website (<http://www.indonesiakreatif.net/>), for example nominal GDP: <http://www.indonesiakreatif.net/cms/wp-content/uploads/2009/10/Tabel-1.3.pdf>.

6 In total refinements and updates to our estimates took into account data and projections reported in five DIS studies: ‘Production and Distribution of Films and Videos (Private) in Indonesia’ (November 2010); ‘Production and Distribution of Films and Videos (Government) in Indonesia’ (June 2011); ‘Cinema Facilities (Private) in Indonesia’ (January 2011); ‘Radio and Television Facilities (Private) in Indonesia’ (January 2011); and ‘Radio and Television Facilities (Government) in Indonesia’ (June 2011). We believe these to be the best of the data sources available to use in order to adjust and update the official data sources to arrive at the estimates required.

- We then adjusted from the ‘market price’ GDP measure of net output to the ‘basic price’ GDP (or ‘GVA’) measure – to reflect the values received by producers rather than those paid by purchasers – by netting off taxes on products and adding back subsidies. The GDP data available for the Indonesian economy and its sub-sectors are at market prices, so Oxford Economics estimated an adjustment factor based on those figures together with tax and subsidy data found in the official public finance statistics<sup>7</sup>.

This allowed us to produce separate estimates for GDP and employment in the ‘television’ and ‘film’ categories for the years 2006–08.

We then undertook the following further steps with regard to GDP and employment for those years:

- Based our estimates for the exhibition and video rental sectors on data in the DIS ‘cinema’ report (which covered both).
- Estimated the size of the video retail sector, helped by previous findings concerned with end-user expenditure on retail relative to that on cinema and video rental.
- Estimated the value of mass manufacture of videos on the basis of the implied demand for videos for retail and rental.
- The residual value within the ‘film’ category was then taken to be ‘film production and distribution’.
- Estimates for GDP in 2009 and 2010 were then made, based on sector growth rates implicit in the DIS reports, with an inflation-adjusted GDP series also estimated for 2006–10 by combining the Industri Kreatif and DIS datasets. We believe the DIS series to be the most suitable of the data series available for this purpose.

7 Source: Biro Pusat Statistik (Central Bureau of Statistics) and Departemen Keuangan (Ministry of Finance), via Haver Analytics.

From there we constructed:

- Measures of gross output<sup>8</sup> by sub-sector, mainly based on turnover-to-GDP ratios found in DIS industry reports.
- Measures of employee earnings by sub-sector, mainly based on wage-to-GDP ratios found in DIS reports.
- Measures of tax payments by sub-sector, by assuming that the ratio of (personal and corporate) income tax to GDP was in line with that for the non-oil economy overall, with the ratios of VAT to GDP and miscellaneous duties to GDP in line with the average for the wider economy. This approach allowed – albeit on a ‘broad brush’ basis – for the fact that VAT applies to some but not all film and TV activities, for the levying of import duties in some cases, and for the industry’s likely exposure to some duties such as those on property and property transfers.

## 6.2 Modelling the total economic contribution

An output ‘multiplier’ measures the relationship between an initial shock to the gross output of a sector and the final outcome across the whole of the economy, taking into account knock-on impacts for other industries’ activity. This study uses ‘Type II’ multipliers.

Type II multipliers allow for both ‘indirect’ supply chain effects, i.e. the contribution due to the film and TV industries making purchases from other sectors, and ‘induced’ effects which arise from workers spending the resulting wage income on goods and services. (Studies which only allow for the indirect or supply chain effects use what are known as Type I multipliers. Type II multipliers will be larger than Type I multipliers.)

To arrive at the Type II multiplier for Indonesia, however, we first derived an estimate of the Type I multiplier, based on separate multipliers published in one of the official Industri Kreatif reports<sup>9</sup>. The multiplier for the ‘television’ sector was taken to be the same as that published for ‘television and radio’, and that for ‘film’ (including

<sup>8</sup> Gross output is essentially equal to the value of sales or turnover of all firms in a given sector (though adjusted for changes in stocks of goods and work in progress in some cases). GDP is equal to gross output net of goods and services bought in from other sectors and of transactions between firms within the sector.

<sup>9</sup> Departemen Perdagangan (Commerce Department), ‘Studi Industri Kreatif Indonesia 2009 Update’, table 4-14.

video) to be the same as that published for ‘film, video and photography’. After an adjustment to avoid ‘double counting’ (see section 6.3 below), the two multipliers were weighted together in accordance to the sub-sectors’ gross output to arrive at a Type I multiplier for ‘film and television’ combined.

Next we used a 33-sector Indonesian input-output table from 2005 (the latest year available), sourced from the OECD, in order to estimate Type I and Type II multipliers for the ‘other community, social and personal services’ sector. (We took that sector to be most representative of the film and television sector in terms of its supply chain links with other industries, even though strictly speaking parts of the film and television grouping would be classified to other, rather broad sectors in the 33-sector matrix, such as ‘post and telecommunications’, ‘retail’ and ‘paper, printing and publishing’.)

We then multiplied our locally-sourced Type I multiplier estimate by the ratio of Type II-to-Type I multipliers derived from the OECD table, to arrive at the Type II multiplier to be used for the film and television sector as a whole. This multiplier was applied to the gross output of the combined sector to arrive at the total economic contribution in terms of gross output. This multiplier and its derivation are shown in the table below.

It should be noted here that a multiplier calculated for any of the individual sub-sectors within the combined grouping, if considered in isolation, would typically be higher than the multiplier for the group as a whole, as it would include the (often significant) impact on other sub-sectors within the group. Consequently the estimated multiplier impact for the combined industry – used in this study to avoid ‘double counting’ and thus to avoid overstating the overall contribution – cannot be seen as the ‘sum’ of the potential impacts of the individual sub-sectors alone.

One implication of this is that any allocation between the sub-sectors of the indirect and induced output contributions of the combined industry would be arbitrary to some extent. In this case we have therefore decided simply to allocate these contributions between the sub-sectors in proportion to their share of direct output.



### 6.3 Adjustments for leakage and double counting

In estimating the output multiplier, we took care to allow for four further factors:

- Double counting of sub-sector contributions. To arrive at the Type I multiplier for the combined ‘film and television’ sector – which would indicate the contribution of a shock to the output of this sector as a whole on the remainder of the economy – we adjusted the multiplier for television downwards in order to net off that sub-sector’s estimated impact on and via the film production sector. That adjustment was based on our estimate of the share of the television industry’s spending on goods and services going to the film industry (40%), which was informed by data on industry cost structures in the relevant DIS sector reports.

**Table 6.1: Derivation of the output multiplier**

<b>From Industri Kreatif study:</b>	
Type I multiplier for ‘film, video and photography’	2.23
Type I multiplier for ‘television and radio’	1.97
<b>Oxford Economics assumptions and estimates</b>	
Type I multiplier for ‘film’ (including video)	2.23
Type I multiplier for ‘television’ – in isolation	1.97
<b>Type I multiplier for ‘television’ – adjusted to exclude estimated impact on and via ‘film’</b>	<b>1.83</b>
<b>Derived from the Indonesian input-output tables:</b>	
Type I multiplier for ‘community, personal and social services’	1.60
Type II multiplier for ‘community, personal and social services’ – raw, but allowing for import ‘leakage’	2.15
Type II multiplier for ‘community, personal and social services’ – adjusted for spending out of saving	2.08
<b>Final Oxford Economics estimate:</b>	
<b>Type II multiplier for ‘film and television’ combined</b>	<b>3.38</b>

- ‘Leakage’ from domestic demand due to imports. However this is already allowed for in the Industri Kreatif Type I multipliers and in the input-output tables used to derive our Type II multiplier, so no specific additional adjustment was required.

- The fact that if employees currently working for the film and TV industries were not employed in a given year then they would still spend some money. In western countries such spending would typically be supported by social benefits, but in Indonesia’s case the main support would be provided by the accumulated savings of individuals and their families. The result is that a Type II multiplier derived from the ‘raw’ input-output table would overstate the impact on the wider economy of a shock to the output of a particular sector. We therefore adjusted the ‘induced’ contribution downwards to allow for this factor.
- The impact of taxes on products, which can drive a wedge between total spending on a sector’s output and the amount actually received by the producers of that output, and thus the amount that they can pass on in turn. However, our calculation as set out above will have taken that into account automatically, without the need for any further adjustment.

### 6.4 Estimating GDP, earnings and employment

The gross output totals derived from the above modelling were converted into estimates for GDP using ratios of GDP to gross output across the wider economy and sectors of it (from the OECD input-output table), taking care in each case to adjust the ‘market price’ GDP data downwards slightly onto an estimated ‘basic price’ basis.

In the case of the indirect effect, we used the output-to-GDP ratio for the economy excluding extraction and agriculture, calculated as 2.21. This reflected the fact that suppliers to the film and television sectors are spread broadly across the economy with the exception of those two sectors (e.g. equipment manufacturing, transport services, property services, utilities, market research and other business services, etc).

For the induced effect, we used the output-to-GDP ratio calculated for the economy as a whole – 1.99 – reflecting the fact that the benefits of household spending would be spread right across the economy.

While our approach means that the same output multipliers are shown to apply to all of the individual sub-sectors, the implicit GDP multipliers vary as shown in the table below. Thus, the ratio for cinema is relatively high, reflecting that sub-sector’s own comparatively high output-to-GDP ratio and the consequent expectation that its procurement of goods and services would ultimately benefit other sectors’ GDP to a greater extent than the average.

(In each case, however, the GDP multiplier shown here is likely to be lower than the GDP multiplier that would apply if the sub-sector were studied in isolation, reflecting the elimination of the impact of transactions between different parts of the broader ‘film and television’ industry. Also, as with gross output the allocation of the total GDP contribution between sub-sectors can be regarded as arbitrary to some degree.)

**Table 6.2: Implicit GDP multipliers by sub-sector**

	Gross Output		GDP	
	Type I multiplier	Type II multiplier	Type I multiplier	Type II multiplier
Cinema and home entertainment sub-sectors	1.83	2.38	3.77	5.72
Film production and distribution	1.83	2.38	3.57	3.57
Television services	1.83	2.38	2.29	3.19
<b>Total</b>	<b>1.83</b>	<b>2.38</b>	<b>2.46</b>	<b>3.45</b>

It can also be seen that the implicit GDP multiplier for the sector as a whole is greater than the multiplier for gross output. This reflects the fact that GDP accounts for a smaller proportion of sector output than across the economy as a whole, or put another way that procurement of goods and services from other businesses – thus benefiting other firms’ GDP – is proportionately higher than the national average.

Indirect and induced employment contributions are then estimated on the basis of employment-to-GDP ratios found to hold across the non-mining non-farm economy and whole economy respectively, in each year, based on official data<sup>10</sup>. Employee earnings are based on the employee compensation-to-GDP ratios found to hold across those two definitions of the wider economy, although in this case two fixed ratios have had to be used, taken from the OECD national accounts input-output table which relates to 2005.

## 6.5 Modelling tax revenues

Taxes assessed included income tax, corporation tax, value added tax (VAT) and excise duties. For tax contributions, we assumed that income taxes were in line with the ratio of non-oil income tax revenues to non-oil GDP in the case of indirect contributions, and in line with the ratio of total income tax revenues to total GDP in the case of induced contributions, with the VAT contribution in both cases being in line with the economy-wide VAT-to-GDP ratio. For duties and other miscellaneous taxes, we assumed that the total-revenue-to-total-GDP ratio would apply in the case of the induced contribution, but applied a lower ratio in the case of the indirect contribution, reflecting a view that firms in the film and TV industry’s supply chains would be less affected than the average by excise duties, while being equally exposed to minor taxes such as on property and property transfers.

## 6.6 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.

While VAT is excluded from GDP at basic prices, the VAT generated by the film and television industries is estimated in the main body of this report and included as a part of the industry’s tax contribution.

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

<sup>10</sup> Source: Biro Pusat Statistik (Central Bureau of Statistics), via Haver Analytics.





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