The economic contribution of the film and television industries in Malaysia

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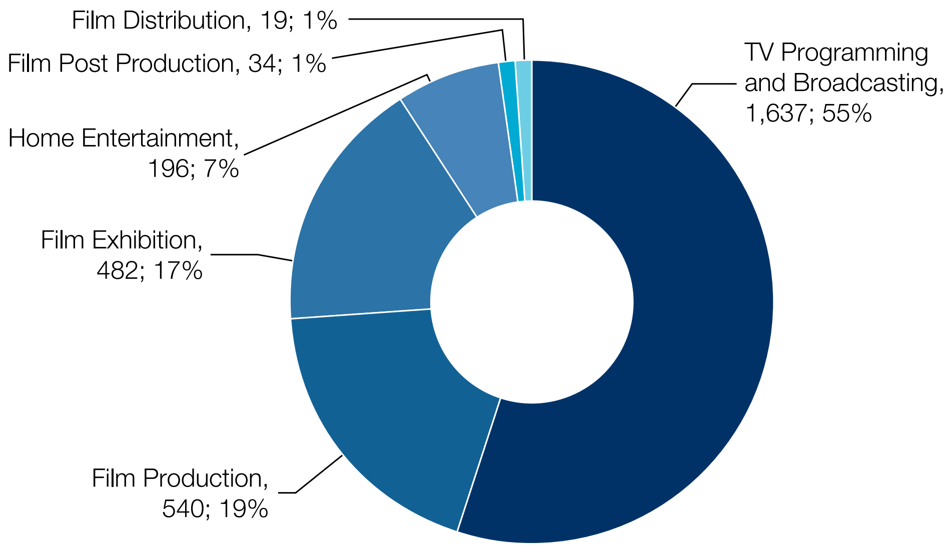
Contents

1 Key findings

The film and television sectors make a notable direct contribution to the Malaysian economy…

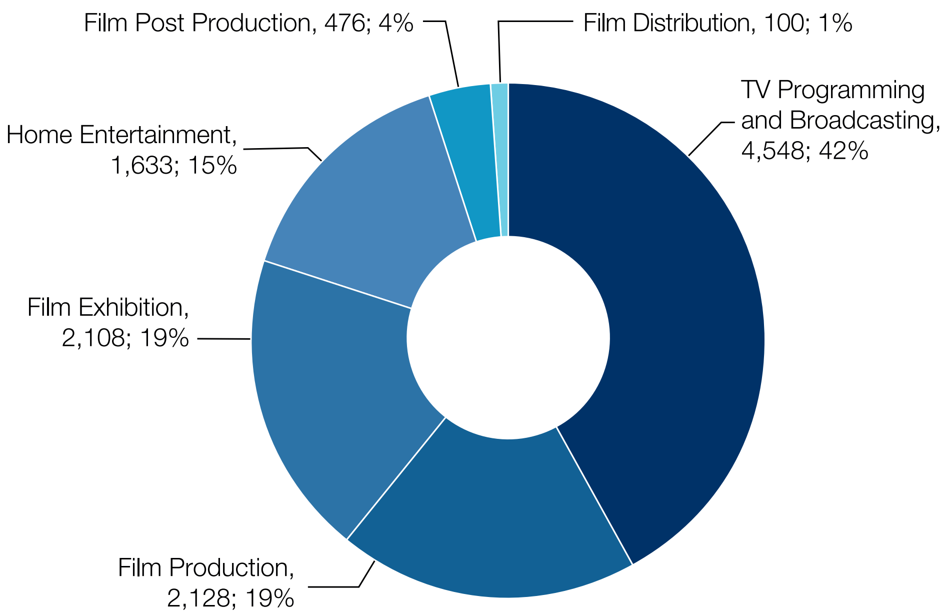
- Oxford Economics estimates show that the film and television industries **directly** contributed an estimated **2,910 million Malaysian Ringitt (RM)** to the Malaysian economy in gross domestic product (**GDP**)[1] in 2013. In the process they directly supported approximately **10,994 jobs** and generated some **RM 366 million** in **tax** revenues.[2]

Chart 1.1: Direct GDP of the Malaysian film and TV industry, 2013 (millions of RM and percentage split)



Total: RM 2,910 million

Chart 1.2: Direct employment of the Malaysian film and TV industry, 2013 (persons employed and percentage split)



Total: 10,994 people

- The film and television industries' direct contribution to GDP in 2013 was equivalent to some 0.3% of total national GDP.
- Meanwhile, film and television's direct share of economy-wide employment was 0.1% while it generated 0.2% of total tax revenues.

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 the 'Detailed methodology' section at the end of this report.)

2 Money values in this report are rounded to the nearest RM 1 million, while (with the exception of the overall direct employment total of 10,994) job figures in the text of this report are rounded to the nearest 100 for simplicity. Also note that some of the totals reported in the charts of this report may not appear to sum exactly to the figures cited in the chart totals or the text due to the impact of rounding.

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

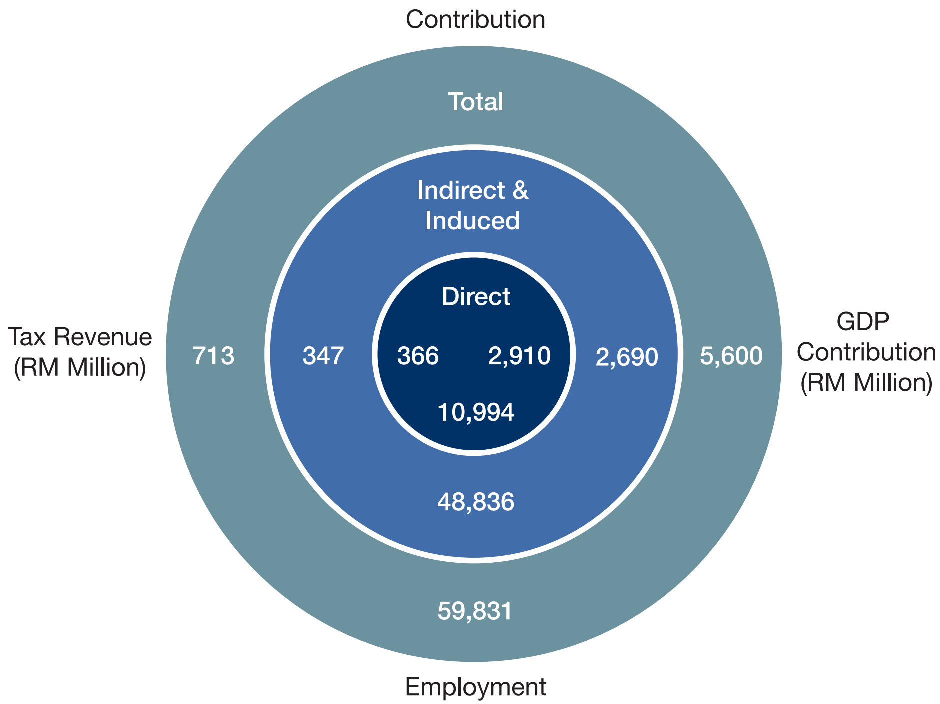
- The film and TV industries also produce 'indirect' and 'induced' effects across the entire Malaysian economy. The indirect effects arise from purchases by the film and television sectors from other industries within the country, and from further transactions throughout various supply chains. The induced effects result from workers - directly employed within the film and TV industries or within the supply chain - spending their earnings, generating more rounds of economic activity. We estimate that the combined indirect and induced sectors made an additional GDP contribution of RM 2,690 million, thereby supporting a further 48,800 jobs and RM 347 million in tax revenues.

Taking into account 'multiplier' effects, in 2013 the Malaysian film and television industries generated some RM 5,600 million of GDP for their home country…

- Taking the direct, indirect and induced contributions together, we estimate that the film and television industry's total economic contribution to GDP in 2013 was RM **5,600 million**. In addition, it supported some **59,800 jobs** overall. And it generated total tax revenues of RM **713 million**.

…which was sufficient to support 59,800 jobs and provide RM 713 million in taxes.

Figure 1.1: Total contribution to Malaysian GDP, tax and employment, 2013



Industry productivity is well above the national average…

- Each person employed in the film and television sector in 2013 generated, on average, RM 264,600 of GDP – some 3.5 times the economy-wide average of RM 74,900.
- High productivity is reflected in employees' average earnings, which, at RM 57,300 a year, are 84% higher than the average across the economy as a whole (RM 31,100).

…but the challenge for the sector is to develop future growth

- Malaysia is a relatively small player in terms of film production due to historical factors such as its relatively small market and population.
- Likewise current film and TV exports are minor, while any film and TV induced tourism would appear to be negligible.
- Nonetheless Malaysia has developed niche skills in the animation market and the Malaysian government has set out a strategy to develop the country as a film hub. The recent introduction of tax breaks for foreign and domestic film productions and the opening of the $120 million Pinewood Iskandar Studios close to the border with Singapore represent important steps in this direction.

Table 1.1: Overview of the economic contribution of the Malaysian film and television industries

Metric	GDP (RM m)		Employment		Earnings (RM m)		Tax (RM m)	
Type of Impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Film Production	540	796	2,128	8,505	91	264	38	75
Film Post-Production	34	47	476	506	15	16	3	4
Film Distribution	19	26	100	278	4	9	1	2
Film Exhibition	482	687	2,108	7,340	40	228	164	196
Home Entertainment	196	280	1,633	2,987	80	93	36	45
TV Programming and Broadcasting	1,637	3,764	4,548	40,215	400	1,249	124	391
Total	**2,910**	**5,600**	**10,994**	**59,831**	**630**	**1,859**	**366**	**713**

2 How we arrived at these figures

Oxford Economics was commissioned to assess the economic contribution of the film and television industries in Malaysia.

The starting point for our estimates was provided by data from the Malaysian Department of Statistics' *2012 Census of Services Establishments, Services Statistics, Information and Communication Services* (2013) and uses the *Malaysia Standard Industrial Classification 2008 (MSIC 2008)* Ver. 1.0. This publication reports 2011 data which we extrapolated to 2013. This differentiates between film production, post-production and distribution as well as film projection and TV programming and broadcasting. (Details are set out in the final chapter of this report.)

2.1 Direct economic contributions

The GDP, earnings, 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, earnings and employment data are derived from the above-cited Malaysian Department of Statistics' figures for the film production, post-production, distribution and projection sub-sectors and the TV programming and broadcasting sub-sector. Our tax estimates rely on combining estimated industry income with knowledge of the country's tax system, tax-to-GDP and tax to earnings ratios found for broader sectors of the Malaysian economy.

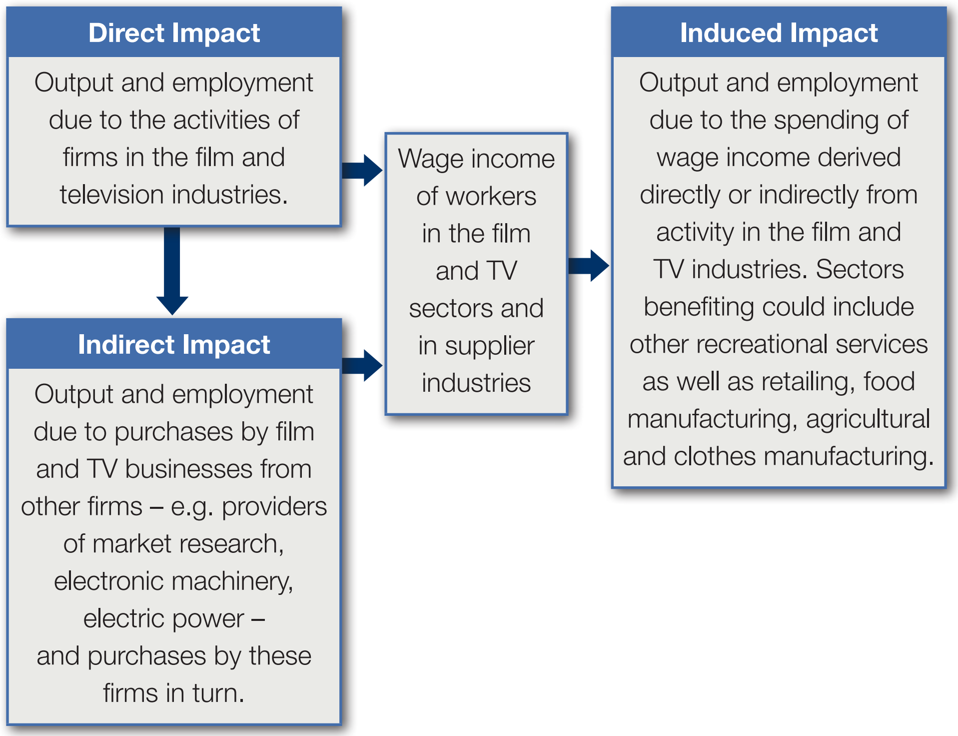
2.2 Additional economic contributions

To assess the **total economic contribution** of these sectors for the Malaysian economy, we also need to take into account additional channels of economic contribution. The effect of these two key channels can be quantified by combining our estimates of direct contributions with output 'multipliers' implied by detailed national accounts data.

These estimates therefore cover:

- **Indirect contributions**, which relate to the output and jobs supported in Malaysian-based supply chains, due to purchases by Malaysian 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 Malaysian 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 production, distribution and exhibition

In this chapter we set out the economic impact in greater detail, breaking down the contribution of the film production, post-production, distribution and exhibition sub-sectors. We also include a section on home entertainment. We focus on each subsector's contribution to GDP, to taxes and to employment, including direct, indirect and induced effects.

Data for film production distribution and exhibition is sourced from the Malaysian Department of Statistics' *2012 Census of Services Establishments, Services Statistics, Information and Communication Services* (2013) and uses the *Malaysia Standard Industrial Classification 2008 (MSIC 2008)* Ver. 1.0. This publication reports 2011 data which we then extrapolated to 2013.This differentiates between film production, post-production and distribution as well as film projection.

This level of detail is helpful in understanding the Malaysian film industry. However, it does not differentiate between the production and distribution of films for cinema exhibition and of production and distribution of films for non-theatrical exhibition, such as for TV broadcasts, and this should be noted when analysing the figures below.

Economic activity relating to TV programming and broadcasting is separately identified by MSIC and this activity is presented in the following chapter.

Data relating to home entertainment activities in 2013 were estimated indirectly based on information derived from Screen Digest.

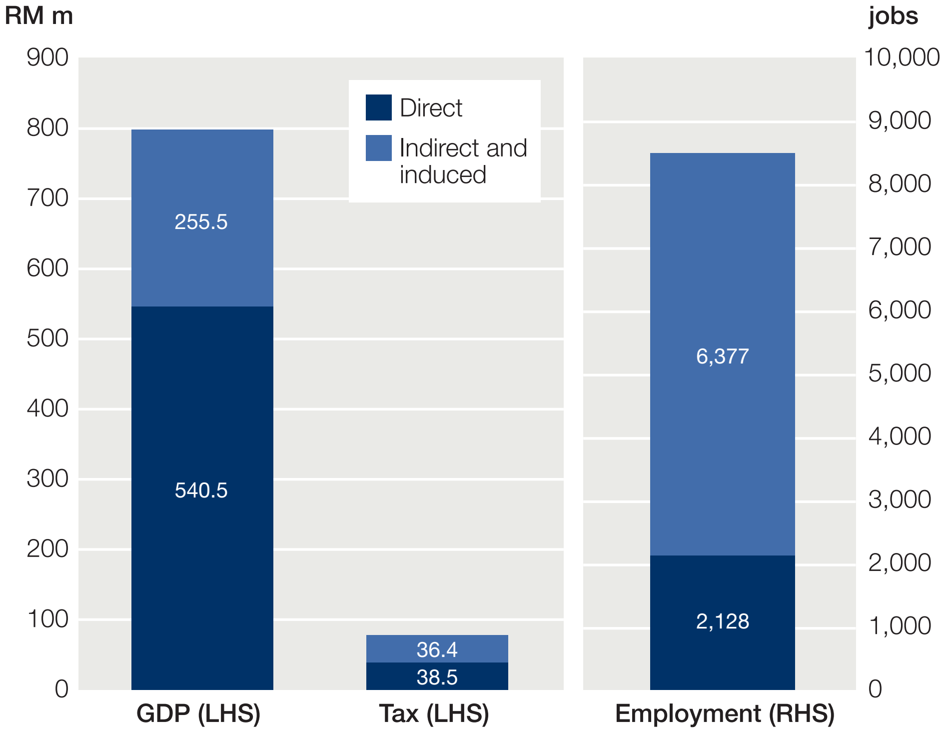
3.1 Film production

This area of activity relates to the physical process involved in production of motion pictures, videos, television programs or television commercials.

We estimate that in 2013 film production was worth some RM 540 million in GDP and directly responsible for creating 2,100 jobs. Moreover, this activity helped to generate RM 38 million in tax revenue. Taking into account indirect and induced effects these figures rise to RM 796 million in GDP, creating 8,500 jobs and raising RM 75 million for the Malaysian government in tax receipts.

Film production makes a bigger contribution to Malaysian GDP and employment than either distribution or film exhibition. Indeed, in 2013, this area alone accounted for 50% of the entire Malaysian film production, distribution and exhibition sector's GDP (excluding home entertainment) and 44% of its jobs. Its labour productivity (i.e. its GDP per worker) was some RM 254,000 per employee. Its labour productivity is therefore above the average of these combined sub-sectors (RM 224,000 per employee) and, indeed, is the highest of all the sub-sectors in this chapter.

Chart 3.1: Economic contribution of film production, 2013



Source: Oxford Economics estimates

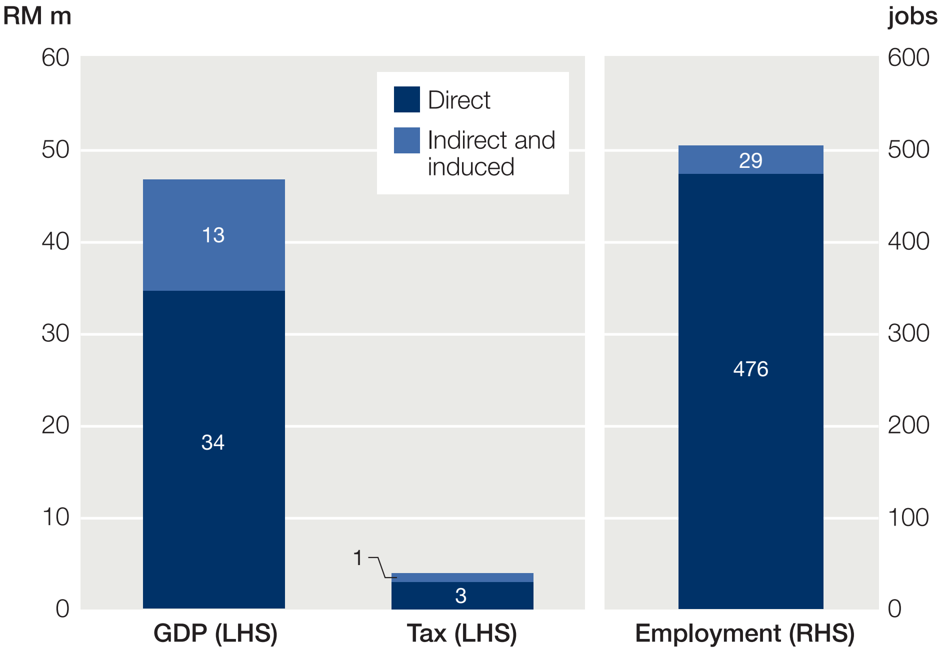
Film production is a much bigger contributor to Malaysian GDP and employment than either distribution or exhibition.

3.2 Film post-production

Film post-production mainly relates to the editing, titling, subtitling, credits, computer graphics, animation and special effects as well as the activities of motion picture film laboratories and the production of motion picture film for theatrical distribution.

We estimate that in 2013 these activities were worth some RM 34 million in GDP and directly responsible for creating nearly 480 jobs. Moreover, this activity helped to generate RM 3 million in tax revenue. Taking into account indirect and induced effects these figures rise to RM 47 million in GDP, creating over 500 jobs and raising RM 4 million for the Malaysian government in tax receipts.

Chart 3.2: Economic contribution of film post-production, 2013



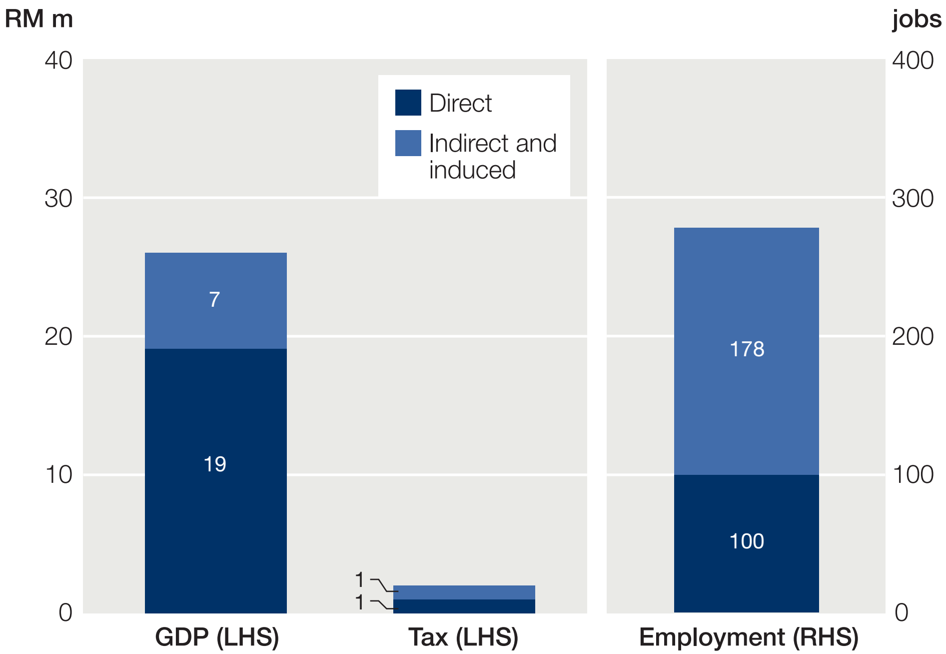
Source: Oxford Economics estimates

3.3 Film distribution

The 'film distribution' sector includes the distribution of film, video tapes, DVDs and similar productions to motion picture theatres, television networks and stations and exhibitors. This 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. Recent technological innovations have meant that digital distribution techniques have become increasingly prominent, with the growth of video-on-demand and download platforms.

We estimate that the film distribution generated some RM 19 million in GDP in 2013 and was directly responsible for creating 100 jobs. Moreover, this activity helped to generate RM 1 million in tax revenue. Taking into account indirect and induced effects these figures rise to RM 26 million in GDP, creating nearly 300 jobs and raising RM 2 million for the Malaysian government in tax receipts.

Chart 3.3: Economic contribution of film distribution, 2013



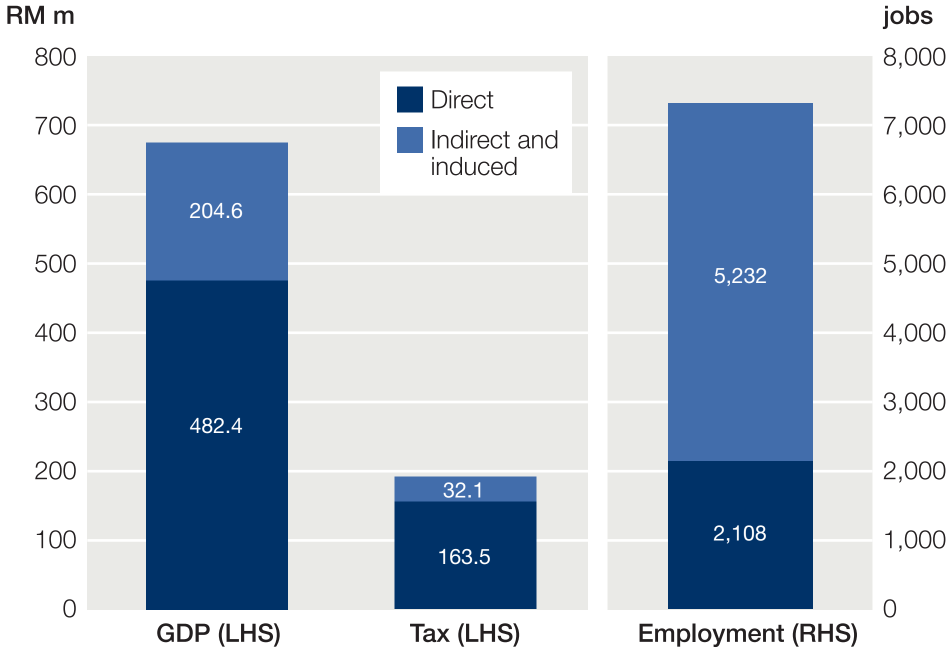
Source: Oxford Economics estimates

3.4 Film exhibition

By 'film exhibition' we mean the process of screening films to the public, at indoor and outdoor cinemas or in other projection facilities.

We estimate that the direct GDP of film exhibition was RM 482 million RM in 2013, supporting some 2,100 jobs. Moreover, this activity helped to generate RM 164 million in tax revenue. Taking into account indirect and induced effects these figures rise to RM 687 million in GDP, supporting 7,300 jobs and raising RM 196 million in tax receipts.

Chart 3.4: Economic contribution of film exhibition, 2013



Source: Oxford Economics estimates

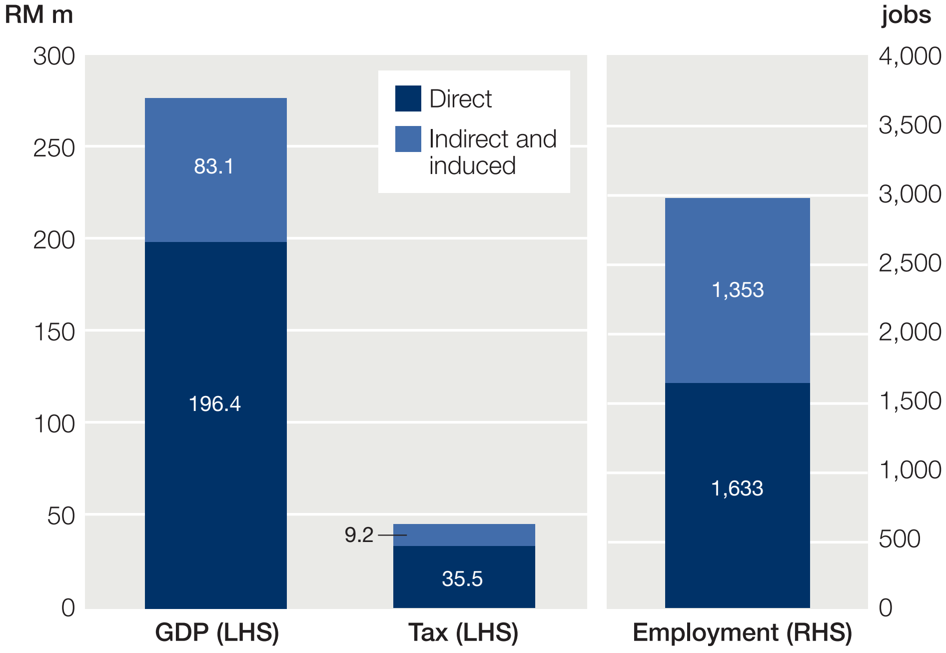
3.5 Home entertainment

For the purposes of this report this sub-sector comprises the retail and rental of Blu-ray discs and DVDs. It excludes hardware such as Blu-ray and DVD players, however.

We estimate that home entertainment retail and rental made a RM 196 million contribution to GDP, directly creating 1,600 jobs. Moreover, this activity helped to generate RM 36 million in tax revenue. Taking into account indirect and induced effects these figures rise to RM 280 million in GDP, creating 3,000 jobs and raising RM 45 million for the Malaysian government in tax receipts.

Even the combined direct GDP contribution of the retail and rental sub-sectors is less than half that of public film exhibition via cinemas and other outlets. Home entertainment rental is responsible for some two thirds of the direct GDP and 62% of the direct employment of the combined retail and rentals markets. This underlines the dominance of the rental market within home entertainment.

Chart 3.5: Economic contribution of home entertainment, 2013



Source: Oxford Economics estimates

4 Television programming and broadcasting

This chapter sets out the economic impact of television programming and broadcasting, concentrating on the subsector's contribution to GDP, to taxes and to employment, including direct, indirect and induced effects.

As is the case for film production distribution and exhibition, data relating to Malaysian TV broadcasting is sourced from the Malaysian Department of Statistics' *2012 Census of Services Establishments, Services Statistics, Information and Communication Services* (2013) and uses the *Malaysia Standard Industrial Classification 2008 (MSIC 2008)* Ver. 1.0.

As indicated in the previous chapter, the actual production and distribution of TV content is covered under film production and distribution. Programming and broadcasting activities include the broadcast of content created from purchased Programme components (e.g. films, documentaries) and self-produced Programme content (e.g. news, sports, educational content) or a combination of these, as well as acquiring the right to distribute content.

TV broadcasting as defined here includes over-the-air, via satellite, via a cable network or via internet. Data broadcasting, integrated with TV broadcasting is also included.

The Malaysian television broadcasting industry landscape comprises of free to air (FTA) providers as well as a pay TV sector.

The FTA sector is dominated by the government run Radio *Televisyen Malaysia* as well as the privately run *Media Prima Berhad*. Pay TV in Malaysia has historically been dominated by satellite TV with cable TV playing a relatively minor role. *Astro Holdings Sdn Bhd* (often known simply as Astro) in turn holds an effective monopoly position in the satellite TV market.

We estimate that the direct GDP of the television programming and broadcasting sector was worth RM 1,637 million in 2013, directly supporting some 4,500 jobs and generating RM 124 million in tax revenue. Taking into account indirect and induced effects these figures rise to RM 3,764 million in GDP, sufficient to account for 40,200 jobs and yield RM 391 million in tax receipts.

The television sector therefore accounts for 56% of the direct GDP of the combined 'film and television' industry, and for 41% of direct employment. Its labour productivity (RM 359,900 per employee) is, therefore, higher than that of the combined film production, distribution and exhibition, and home entertainment industry (RM 197,400 per employee).

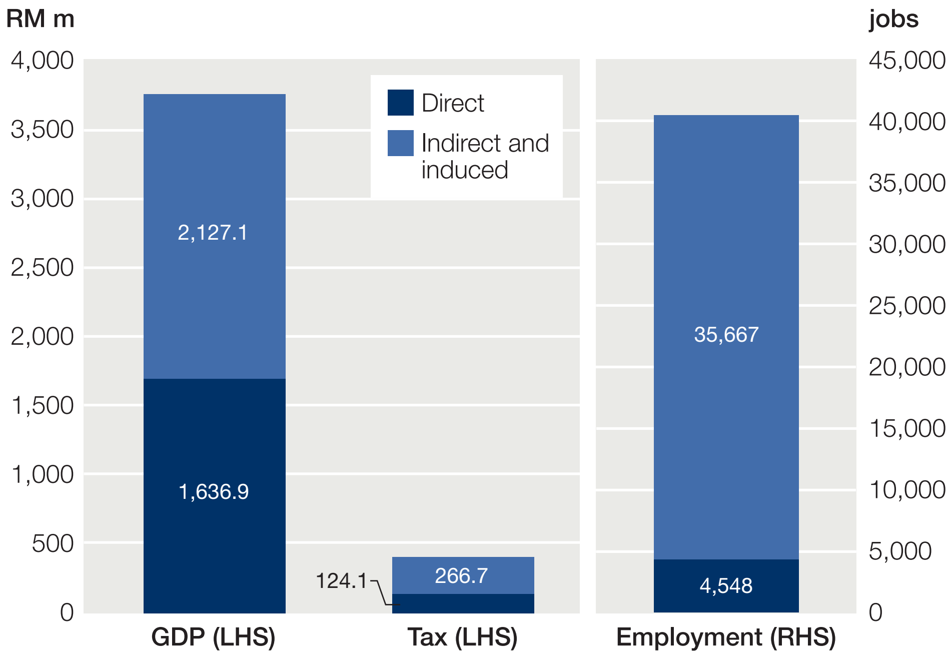
The television sector's productivity is higher than that of the combined film production distribution and exhibition, and home entertainment industry.

Official government statistics do not differentiate between FTA and satellite television programming and broadcasting. However past changes in classification of satellite TV between 2010 and 2011 (from the telecommunications sector to programming and broadcasting activities) allow for an estimation of the proportion of the total GDP and employment accounted for by satellite TV.

This analysis suggests that satellite TV accounts for 66% of the TV broadcasting and programming GDP and 54% of its employment.

Other, unofficial, estimates allow for a breakdown of IPTV activity. However these indicate that IPTV plays a relatively minor role within the current industry landscape.

Chart 4.1: Economic contribution of television activities, 2013



Source: Oxford Economics estimates

5 Exports, tourism and festivals

5.1 Film and TV exports

Although some estimates exist for the broader creative sector, no detailed figures for Malaysian film and TV exports appear to be available. However observers have previously noted that Malaysia's relatively small population (by Asian standards) and strong foreign competition has limited the production of domestic films and TV content.[3]

This has consequently flowed on to the export market with the value of film and TV exports likely to be minor at present. Data from MSC Malaysia (Malaysia's national ICT initiative) indicated that the creative multimedia industry as a whole (i.e. including animation, film, TV and video effects, as well as games and mobile/ new media) accounted for RM 490 million in exports in 2012.[4] The value of exports accounted for by film and TV would therefore be expected to be a sub-set of this figure. Exports typically find their way to Singapore, Brunei and Indonesia, although the Philippines, South Korea and even South Africa (TV) have also been recipients of Malaysian film and TV products.[5]

The Malaysian government has been attempting to bolster exports and the domestic film industry in general. Accordingly it allocated RM 200 million in its 2010 budget to the development of the creative industries, with emphasis given to the development of films and animation production.[6] It has also been acting through the National Film Development Corporation (FINAS) to encourage international filmmakers to shoot in Malaysia as well as helping to promote Malaysian films abroad. In February 2013 a new 30% tax rebate scheme was initiated including production and post-production activities, and encompassing both Malaysian and foreign production activities. FINAS was recently active at the European Film Market in Berlin where 80 countries purchased the right to distribute Malay films.[7] The Malaysian Government's strategic investment fund in cooperation with Pinewood Shepperton PLC recently opened a $120 million studio complex in Iskandar, close to Singapore[8]. This is part of Malaysia's longer term strategy to become a regional film hub. Some 73 local Malaysian films were released in cinemas in 2012 compared to 27 in 2009.[9]

Malaysia has developed a particular skill in animation and this has been reflected in export markets. Notable Malaysian achievements which have made an impact on the world stage include the animated feature *Geng: The Adventure Begins*, *War of the Worlds: Goliath* (a co-production with Korea and the US), *Saladin* (co-production with Qatar/Al Jazeera), *Seefood* (co-production with Qatar) and *Bo Boi Boy* an example of home-grown IP.[10]

Note that any film exports would effectively be captured in the direct film and TV economic contribution figures reported above, since exports are a component of GDP.

3 Rosnan, H.; Abdul Aziz, Z. D. (2012) "Film business in Malaysia: challenges and opportunities". *International Journal of Humanities and Social Science* Vol. 2 No. 12 pp. 198-202

4 MSC Malaysia Dialogue & Customer Interaction Program 28 March 2013 http://www.mscmalaysia.my/sites/default/files/dialogue_cust_interaction/morning_session/SCORE%20-%20Fazidah%20Fakhrudin.pdf

5 Creative Content Association of Malaysia http://creativecontent.my/fact_figures

6 Rosnan and Aziz op. cit.

7 IFTA Marketplace Review (2013) *Malaysia*

8 *Ibid*.

9 *Malaysian film industry rapidly progressing*, 2 February 2013 http://english.astroawani.com/news/show/malaysian-film-industry-rapidly-progressing-finas-6054

10 Shah (2011) *A Snapshot of Malaysia's Creative Multimedia Industries: Threats and Opportunities* http://www.slideshare.net/hnadzrin/matrade-creative-industry-seminar-2011

5.2 Film and TV induced tourism

As might be expected from the relative lack of a strong Malaysian film exports market, there is as yet little evidence of any substantial induced film or TV tourism within Malaysia arising from either domestic or an international sources.

One exception to this may be the appeal of Pulau Redang in Peninsula Malaysia, due to the filming of the Hong Kong made romantic comedy *Summer's Holiday* in 2000. Ong (2012) has documented how this film enhanced the areas appeal to ethnic Chinese tourists from outside Malaysia.[11]

This situation may change if recent government initiatives, noted above, bear fruit in stimulating local film production and/or foreign investment.

5.3 Film festivals

Malaysia hosts a number of regular film festivals including the:

- Malaysian Film Festival
- Malaysian Documentary Film Festival
- Malaysian Video Awards Festival
- KL Experimental Film & Video Festival
- Kuala Lumpur Eco Film Festival
- Borneo Eco Film Festival
- Kota Kinabalu International Film Festival
- French Art & Film Festival Malaysia
- Kuala Lumpur 48 Hours Project

Of these perhaps the best known is the Malaysian Film Festival. Backed by FINAS it awards the artistic achievements of industry players.

Other local events of note include the *Anugerah Skrin TV3* (TV3 Screen Award) which honours the best TV programmes on TV3 and the *Anugerah Seri Angkasa* (Seri Angkasa Award), organised by Radio Television Malaysia.

Malaysia also hosts international events such as Asia-Pacific Film Festival, the Commonwealth Film Festival and the Kuala Lumpur International Film Festival.[12]

A recent addition to these was the International Film Festival of Malaysia which was initiated in November 2012. Parallel to this, Malaysia held its first film market bringing together entities from the TV, music, gaming and fashion industries.[13]

11 Ong, C (2012) "Film induced Coastal Tourism at Redang Island" Film-induced Coastal Tourism at Redang Island, Peninsula Malaysia: Gazes, Practices and Integrated Coastal Zone Management" presented at the 7th International Coastal and Marine Tourism Congress.

12 Creative Content Association of Malaysia http://creativecontent.my/fact_figures

13 IFTA, op. cit.

6 Conclusion

This report has provided a detailed overview of the film and television sectors in Malaysia, 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 Malaysia, directly contributing RM 2,910 million of GDP, in turn supporting 10,994 jobs and generating RM 366 million of tax revenues. The sector therefore accounts for 0.3% of total Malaysian GDP, 0.1% of total jobs across the economy and 0.2% of the country's total tax revenue.

Allowing for "multiplier" effects and taking the direct, indirect and induced contributions together, we can say that the industry's total economic contribution in 2013 was RM 5,600 million of GDP. Associated with this activity, the sector's total contribution to employment was some 59,800 jobs and its total contribution to tax revenues was RM 713 million.

Looking ahead there is clear scope for further growth. While the local population and film market are relatively small by Asian standards, Malaysia has demonstrated its specific talents in areas such as animation. There is therefore clear scope to push up the volume of film exports, given their negligible value. Recent government initiatives may help support the further development of both the industry in general and exports in particular. A potential flow-on from this may be increased tourism along the lines experienced by countries such as South Korea.

7 Detailed methodology

7.1 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 exclude taxes (less subsidies) on products. Gross Value Added (GVA) is another term for GDP at basic prices.

While taxes on products (such as indirect taxes like Malaysian services tax and entertainment tax) are excluded from GDP at basic prices, the indirect taxes generated by the film and television industries are 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 Malaysia and most other countries. GDP at market prices includes all taxes less subsidies on products.

7.2 Quantifying the direct contribution

The main source used to quantify the direct contribution was the Malaysian Department of Statistics' *2012 Census of Services Establishments, Services Statistics, Information and Communication Services* (2013) which uses the *Malaysia Standard Industrial Classification 2008* (MSIC 2008) Ver. 1.0.

http://www.statistics.gov.my/portal/index.php?option=com_content&view=article&id=2078&Itemid=153&lang=en

This publication reports the results of a 2012 survey detailing 2011 data. MSIC Ver.1.0 is similar to the recent United Nations Statistics Division International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4 classification. This differentiates between film production, post-production and distribution as well as film projection and television programming and broadcasting. The 2012 *Census of Services Establishments* provided statistics for calendar year 2011 on gross output (or sales), GDP, employment and salaries and wages paid.

While this was a relatively rich data source, it was still necessary to extrapolate these figures forward to derive estimates for 2013.

With the exception of home entertainment, film and TV GDP estimates for 2013 were derived through use of Oxford Economics' Global Economic Model and its associated Global Economic Databank. These sources provided economy wide GDP figures for 2011 as well as a forecast for 2013. Nominal GDP growth between those two years was used to estimate film and TV GDP in 2013.

GDP estimates for home entertainment retail and rental were based on recent revenue trend data supplied by Screen Digest, extrapolated at an average growth to 2013. The revenue estimates for 2013 were converted to GDP estimates by dividing these figures into retail rental and distribution components and using the retail rental GDP/revenue (gross output) ratios for the relevant Malaysian economy sectors (derived from the Malaysian input-output tables) and that for film distribution (from the film sector estimates described above).

In order to extrapolate film and TV in 2013 employment, we likewise used the Oxford Economics Global Economic Databank figures for Malaysian employment in 2011 and its forecasts for employment growth to 2013. Employment figures for home entertainment were based on GVA/employment ratios for the retail, rental and film distribution sectors.[14]

Earnings data for film and TV in 2013 were likewise extrapolated based on Oxford Economics Global Economic Databank Malaysian average earnings per employee. The growth rate in these earnings between 2011 and 2013 was used to grow earnings for the film and TV industries. Employment figures for home entertainment were based on GVA/earnings ratios for the retail, rental and film distribution sectors.

14 Note that the labour productivity estimates for the film and TV sub-sectors, cited in the main body of the report, can be derived by dividing sub-sector GDP by the number of employees in that sub-sector. This produces an estimate of GDP per employee or labour productivity.

7.3 Modelling the total economic contribution

Broadly speaking, input-output multipliers measure the relationship between an initial shock (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 (derived from 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 a 120-sector Malaysian Input Output (IO) table for the year 2005.[15] 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).

No specific sector capturing all of the activities of the film, home entertainment and TV industries exists within I-O tables, as these are split among several industries and the I-O tables aggregate many industries together. We therefore allocated each sub-sector to a relevant IO category.

Accordingly, the activities covered by films were allocated to the "Amusements and recreational services" category, the sale of DVDs and related home entertainment products was allocated to the "Wholesale and retail trade" category, while the rental of such products was allocated to "rental and leasing". TV programming and broadcasting-related activities were allocated to the "Communications" category.

15 Source: Malaysian Department of Statistics
http://www.statistics.gov.my/portal/index.php?option=com_content&view=article&id=1242&Itemid=111&lang=en

We then "shocked" the IO table using the level of direct gross output (or sales), derived from the values reported by the Malaysian Department of Statistics data described above. Shocking the model simulated the contribution of the film and TV sectors on gross output in the rest of the economy.

Note that "raw" revenue data typically includes indirect taxes (such as services tax and entertainment tax in Malaysia) whereas the Malaysian IO table is measured in basic prices (which excludes indirect taxes). Accordingly, the sales revenue values were adjusted to allow for this when the model was shocked (i.e. indirect taxes such as services and entertainment tax were excluded). (Indirect taxes are included, however, in the direct and total gross output estimates used in this study as they form part of gross output. Likewise indirect taxes are accounted for in the estimates of overall tax revenues, as described below.)

Accordingly, the gross output multipliers cited below relate to the ratio between direct inputs in *basic prices* (i.e. excluding indirect taxes) and total gross output - which includes indirect taxes. (The GDP multipliers, however, relate to the ratio between direct GDP and total GDP.)

7.4 Leakage and adjustment for 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 contributions on domestic demand will be overestimated.

The standard format of the Malaysian IO tables allows for such leakage on a disaggregated industry by industry basis. So this factor has been taken into account in the total economic contribution estimates.

The Type II multipliers used in this study were however (downwardly) adjusted to reflect the fact that, while the I-O table reports the gross compensation of labour, (including gross wages and salaries) employees will ultimately only be able to spend on other goods and services using their net income (i.e. disposable income after income tax).

Accordingly, the Type II multipliers reported in the I-O tables were downwardly adjusted using data for Malaysia indicating the average proportion of income tax relative to employee gross earnings. This ratio was estimated to be some 6.1% in the case of Malaysia. This ratio was based on a comparison of estimated total employee earnings in 2012 (using average earrings and employment data from the Oxford Economics Global Economic Databank) and official Malaysian Ministry of Finance income tax data.[16]

Finally, for certain sub-sectors, it was clear that downward adjustments to the indirect and induced contributions would also need to be made to avoid double counting of output. This is because, in some cases, part of a given industry's supply chain included other sub-sectors that have been classified as part of the film, video and television market. For example, exhibitor direct revenues implicitly reflect purchases from film distributors, so adding purchases from distributors as a part of indirect revenue could be double counting.

Multipliers for the film and TV sub-sectors were therefore adjusted to reflect this fact.

The full list of final gross output and GDP multipliers associated with the modelling described above are reported in Table 7.1.

Table 7.1: Gross output and GVA multipliers

Sub-sector	Type II Multiplier	Type II Multiplier
	Gross Output	GVA
Film Production	2.0	1.5
Film Post-Production	2.0	1.4
Film Distribution	2.0	1.4
Film Exhibition	2.0	1.4
Home Entertainment	2.1	1.4
TV Production and Broadcasting	2.1	2.3

16 Ministry of Finance (2013) *Estimates of Federal Government's Revenue for the Year 2013*

7.5 Estimating GDP, earnings and employment

The gross output totals derived from the above modelling were converted into estimates for total (i.e. direct, indirect and induced) GDP contributed by each sub-sector using the overall estimated ratio of GDP to total gross output, derived from the outputs of the input-output modelling. These were then converted into employment estimates using the overall employment to GDP ratio, also derived from the outputs of input-output modelling.

Direct earnings, were estimated using the information described in Section 7.2 above. For the indirect and induced contributions, we applied the average economy-wide gross annual wage sourced from the Oxford Economics Global Economic Databank to our estimate of indirect and induced employment in each sub-sector.

7.6 Modelling tax revenues

The taxes allowed for in this study included Malaysian services tax, entertainment tax, other economy wide "indirect" taxes personal income tax and corporate income tax.

In order to model the level of revenue that would be raised for the government as a result of this activity, we made use of a number of different data sources.

We allowed for the fact that an entertainment tax of 25% would apply to cinema ticket sales and that a service tax of 6% would apply to home entertainment retail and rentals. These taxes were effectively "built into" the gross output (revenue) data we received from the sources listed in Section 7.2 in the case of cinema exhibition and home entertainment. So for the direct estimates the relevant tax revenue was estimated by deriving the appropriate proportion of reported gross output accounted for by such taxes.

For the total contribution estimates, the impacts of these and other economy wide taxes (such as sales tax and excise duty) was derived by estimating the national ratio of the indirect tax revenue to Malaysian GDP in 2012 (roughly 4%) and then applying this to modelled GDP contributions.[17]

17 The indirect tax revenue was again estimated using the Ministry of Finance (2013) *Estimates of Federal Government's Revenue for the Year 2013*

Personal income tax contributions were derived by estimating the national average ratio of income tax to average employee earnings (6.1%) in 2012. The sources for this data were again the Oxford Economics Global Economic Databank and the Malaysian Ministry of Finance's (2013) *Estimates of Federal Government's Revenue for the Year 2013*. This ratio was then applied to estimated direct and total earnings to derive the respective direct and total personal income tax contributions.

Finally corporate income taxes were derived by estimating the national ratio of the corporate tax revenue to GDP (6.1%) using the Oxford Economics Global Economic Databank and the Malaysian Ministry of Finance's (2013) *Estimates of Federal Government's Revenue for the Year 2013*. This ratio was then applied to estimated direct and total GDP to derive the respective direct and total corporate income tax contributions.

These various sources of taxation were then combined to derive the final figure.

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