

Chapter 4

Economic Contribution Analysis

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CHAPTER 4

Economic Contribution Analysis

In this chapter, economic contribution analysis is conducted for the audiovisual content industry for the eight countries. Section 1 explains the fundamentals of the economic contribution of the content industry. Section 2 and 3 explains the methodology, and estimated results, respectively. Secondly, forecast of audiovisual content industry market revenue is presented in 4.

1. The Fundamentals of Economic Contribution of the Content Industry

From an economic perspective, the content industry, or in a broader definition the creative industry, has been recognized as a fast growing industry contributing to economic growth, employment and trade, etc. The typical way to estimate an industry's contribution to the national economy is to measure its value added. Basically, the sum of the value added of all industries in a country equals its GDP, therefore estimating the value added of an industry indicates the pure portion of, or the contribution of, the industry within the whole economy.

Depending on the definitions used, several countries and regions have attempted to estimate the economic contribution of the content and creative industry. For example, according to UNCTAD (2010), in Europe, it was estimated that the creative industry generated a turnover of 654 billion Euros in 2003, contributing to their

economies from 0.8% to 3.4% of GDP in each European country. Also, in the United States, the creative industries accounted for 6.4% of economy, generating foreign sales and exports in the order of \$125.6 billion in 2007. Table 7 shows recent economic contribution studies on the film and television industry, basically conducted based on Input-Output table analysis (see next section). For example, the film and television industry in New Zealand (2010) had a relatively high economic contribution of 1.4% of GDP. For employment, India has a high multiplier of 3.22 [(direct employment + indirect employment) / (direct employment)].

Table 7: Economic Contribution Studies for Film and Television Industry

Country	Gross Output			Value added (% of GDP)			Employment		
	A.Direct	B.Total	B/A	A.Direct	B.Total	B/A	A.Direct	B.Total	B/A
UK (2006) <i>*covers film only</i>	£ m3,290	N/A	N/A	£ m1,510 (0.4%)	£ m4,343 (1.3%)	2.88	33,500	94,700	2.83
India (2008)	\$m12,263	\$m20,384	1.66	\$m2,329 (0.20%)	\$m6,228 (0.53%)	2.67	567,000	1,826,000	3.22
Hong Kong (2008)	HK\$m12,974	HK\$m33,689	2.60	HK\$m3,543	HK\$m6,171	1.74	15,560	32,725	2.10
New Zealand (2010)	NZ\$m3,233	N/A	N/A	NZ\$m1,282 (0.7%)	NZ\$m2,781 (1.4%)	2.17	10,284	21,315	2.07
Japan (2011)	\$m68,000	\$m145,900	2.15	\$m31,200 (0.53%)	\$m72,200 (1.23%)	2.31	88,569	264,707	2.99
Thailand (2011)	THB 109.9 Billion	THB 247.6 Billion	2.25	THB 68.3 Billion	THB 151.8 Billion	2.22	86,600	254,300	2.94

Note: * ‘B.Total’ includes both direct and indirect contribution (refer to next section for definition)

Source: Economic impact analysis reports commissioned by Film industry bodies.

However, as discussed in Chapter 1, there is no single definition of content or creative industry, and, moreover, the value added by individual content industries is not generally available from government statistics. The lack of standard classifications and official data from government sources make it difficult to assess and estimate the industry’s economic contribution.

Considering these circumstances and the availability of data sources, this report aims to estimate the economic contribution of the audiovisual content industry for each of the eight Asia/ASEAN countries, through a simplified model, and to aggregate the figures to capture the impact as a region.

2. Methodology

This report estimates the economic contribution of the audiovisual content industry (TV broadcasting, film, and animation) for 2011, assessing the indices shown in Table 8, for the eight countries. In particular, it is a macro-economic approach, to estimate the portion of the value added by the content industry in the total economic activity.

Table 8: Indices of Economic Contribution Analysis

Index	Definition
Gross output	Total amount of production concerning value of goods and services based on labor and capital within the industry. It basically represents the total amount of revenue of all participants in the industry. Gross output includes the intermediate inputs, which is the value of all goods and services used as inputs to generate that output.
Value added	Value that was added by activities within the industry, which excludes the value of intermediate input from the Gross output. It consists of production surplus, labor income and net indirect tax. Value added is describes the gross domestic product (GDP) contribution of an industry. It is the most commonly used measure of the value generated by an industry or by the economy as a whole, and can be used to compare with national GDP statistics. A simple equation to express this is: <i>Value-Added = Gross Output - the cost of Intermediate Inputs</i>

The overall economic contribution consists of direct and indirect economic contribution as defined in Table 9.

Table 9: Estimates of Economic Contribution

Index	Definition
Direct Contribution	Gross Output and Value Added that arises based on capital and labor attributed to a specific industry. It represents the direct economic activities in the industry, which includes, for example, production and distribution of film and television broadcasting content as well as film exhibition.
Indirect Contribution	Gross output and Value added that arise as a consequence of changes in the level and value for suppliers of goods and services to that industry. It represents economic activities that are brought to other industries which provide goods and services to film and television broadcasting industry. For example, it includes revenue in industries which provide materials to location for film production.

The traditional approach to estimating the indices above is to refer to Input-Output transaction tables, or I-O tables. An I-O table describes the interrelationships among industries in an economy with respect to the production and uses of their products and products imported from abroad. It indicates how the output of one industry is used as an input to other individual industries and displays these inter-industry linkages in the form of a matrix. It therefore shows how each industry depends on all others in the economy both as customer for their outputs and as supplier of their inputs.

The direct contribution of the gross output is basically the sum of market revenue analyzed in Chapter 3. This is then multiplied by the value added / gross output ratio, which can be estimated from the I-O table, to derive the value add portion of the gross output. The indirect contribution is estimated by multiplying certain multipliers to the direct contribution. The multipliers are obtained from the inverse matrix coefficient table contained in the I-O table. The inverse matrix is a table

which describes the value of economic activity required to meet the demand, when additional demand in a certain industry is assumed. The sum of the inverse matrix coefficients (“Multiplier”) describes the scale of impact on own industry as well as on other industries and is represented in figure of 1 or more. For example, when a multiplier is “1.5”, “1” equals to the value attributed to its own industry and “0.5” to other industries. In particular, high multipliers may be due to the requirements of the industries for extensive outsourcing and to significant inter-industry dependence. However, the industry category generally does not directly correspond to the content industry, therefore through our analysis, the industry or sector that best describes the audiovisual content industry from each countries I-O table is chosen.

Table 10 shows the parameters used in estimating the economic contribution for each country. The parameters are basically quoted directly from the I-O tables, although some figures are estimated from coefficients contained in the I-O tables. Note that assumptions such as international trades among countries are not considered.

Table 10: Parameters Used in the Estimation

Country	Value added/ Gross output ratio	Multiplier	Source	Industry referred	category categorization
China	49.5%	2.53	17 sectors national table (2007)	I-O	Transport, Storage, Post, Information Transmission, Computer Services & Software
Indonesia	52.4%	2.09	37 sector compiled by OECD-STAN(2005)	I-O	Other community, social and personal services
Japan	48.8%	1.95	108 sector national table (2005)	I-O	Broadcasting
Korea	42.1%	2.37	168 sector national table (2010)	I-O	Broadcasting
Malaysia	52.8%	1.97*	Economic Census (2011)		Programming and broadcasting
Philippines	56.5%	1.84	240 sector national table	I-O	Radio and television activities
Singapore	34.5%	1.52	136 sector national table (2007)	I-O	Media Entertainment
Thailand	42.8%	1.99	180 sector national table (2005)	I-O	Radio, Television and Related Services

Note: * Due to lack of specific data, multipliers are derived from averaging multipliers in other countries with close GDP per capita.

3. Results

Table 11 shows the estimated results of the economic contribution of the audiovisual content industry for 2011. In total, including direct and indirect contribution, gross output accounted for 326 billion USD, value added accounted for 155 billion USD, which indicates that the audiovisual content industry contributed to 0.96% or roughly 1% of GDP (total of GDP in eight countries).

Table 11: Economic Contribution of Audiovisual Content Industry (2011)

Country	Gross Output [Billion USD]		Value added [Billion USD] (% of GDP)	
	Direct economic contribution	Total economic contribution (incl. indirect contribution)	Direct economic contribution	Total economic contribution (incl. indirect contribution)
China	46	131	23(0.3%)	65(0.9%)
Indonesia	3	6	2 (0.2%)	3 (0.4%)
Korea	15	37	6 (0.6%)	15 (1.4%)
Japan	66	132	32 (0.6%)	64 (1.1%)
Malaysia	2	4	1 (0.3%)	2 (0.7%)
Singapore	3	5	1 (0.4%)	2 (0.7%)
Philippines	0.3	1	0.2 (0.1%)	0.3 (0.1%)
Thailand	5	10	2 (0.6%)	4 (1.3%)
Total	140	325	67 (0.41%)	156 (0.96%)

Source: Authors.

4. Forecast of Audiovisual Content Industry

Although it is useful to estimate the current industry's contribution derived in the previous section, considering the high potential of the audiovisual content industry, this report conducts a 5 year forecast of the industry for the eight countries, based on certain scenarios.

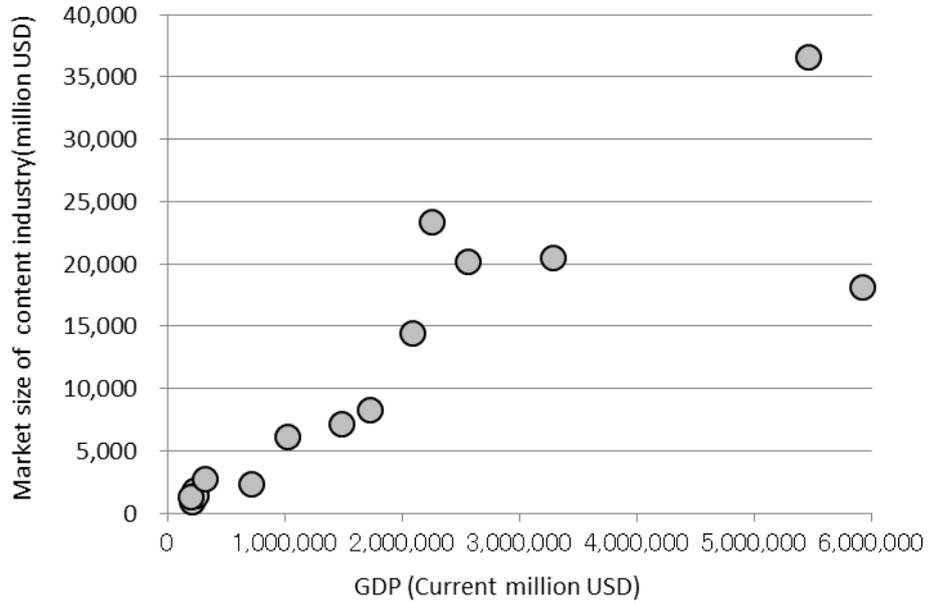
4.1. Scenarios

In this report, two scenarios, GDP growth scenario, and potential scenario is considered. The details are described in Table 12, and the image is shown in Figure 27.

Table 12: Scenarios for Forecast

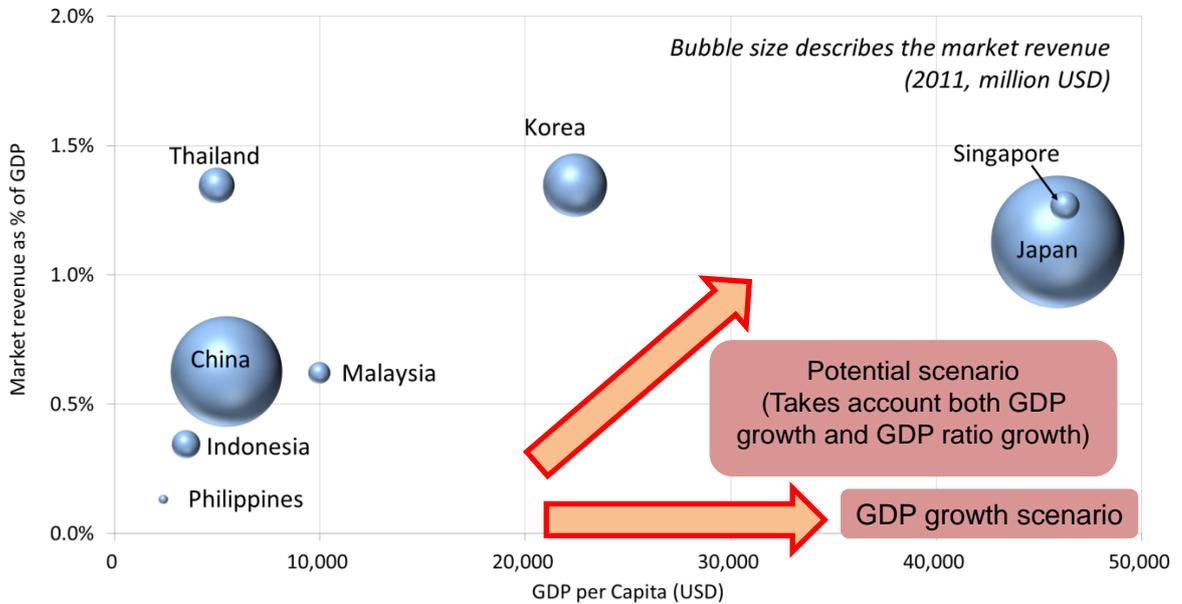
Scenario	Parameter	Basis
1. GDP growth scenario (base case)	Economic growth	<p>For most countries, the audiovisual content industry is highly occupied by the broadcast industry, which is mostly driven by advertisement revenue. Advertisement revenue, in general, has positive correlation with the GDP trend.</p> <p>Therefore, this scenario is on the basis that the industry will grow proportionate to the economic growth, which can be considered as the base case taking into account the current growth of the industry in most countries. The 5 year GDP forecast is quoted from International Monetary Fund.</p>
2. Potential scenario	The ratio of audiovisual content industry to the GDP	<p>As analyzed in Chapter 3 (section 3.1) current ratio of the audiovisual content industry market revenue to the economy (GDP ratio) is different among countries. Korea and Thailand was identified to have the highest of 1.35%. Therefore, this scenario is on the basis that industries in all the countries will evolve and expand benchmarking the leader countries, within the mid-term. In particular, considering the trend in past 5 years, annual incremental GDP ratio is set as follows:</p> <p>China / Indonesia / Malaysia / Korea / Singapore / Philippines: + 0.05%</p> <p>Thailand : +0.1%</p> <p>Japan : maintain current GDP ratio (no increment)</p>

Figure 26: Correlation between GDP and Market Size of Content Industry³



Source: PwC (2012); World Bank.

Figure 27: Scenario Image



Source: PwC (2012); World Bank.

³ The figures include, Japan, China, Brazil, Russia, India, UK, France, Germany, Korea, Hong Kong, Singapore, Indonesia, Malaysia, the Philippines and Thailand.

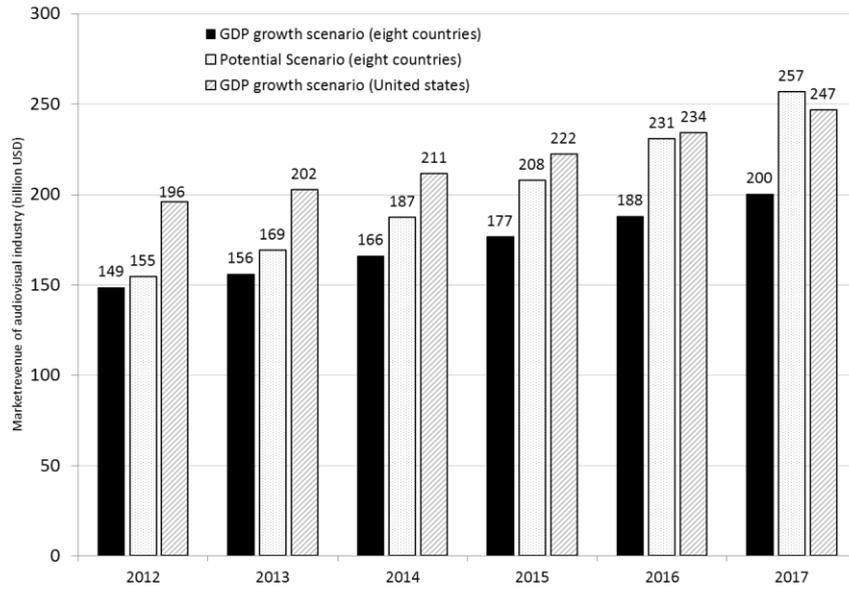
4.2. Estimated Forecast

Figure 28 shows the market revenue forecast of the audiovisual content industry. Under the GDP growth scenario, it is expected to reach 200 billion USD for eight countries in total by 2017. Under the potential scenario, which take into account both GDP growth and the increase in GDP ratio (share of content industry to national GDP), it is forecasted to reach 257 billion USD by 2017, which exceeds the United States' market revenue (GDP growth scenario basis).

Figure 29 and Figure 30 show the market revenue break-down by country for GDP growth scenario and potential scenario, respectively. The majority share of revenue is attributed to China and Japan, however in the long term other countries will add significance to the region's industry.

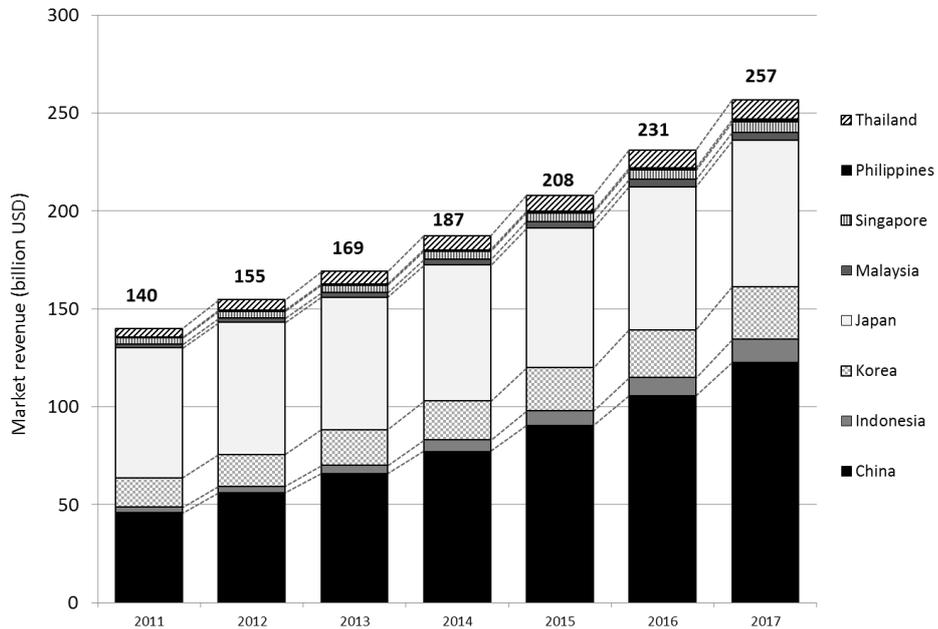
It is important to note that by introducing and/or enhancing appropriate policy measures, and inviting more commercial investment into the industry, greater reality would be added to the potential scenario. Moreover, lowering the boundaries and barriers among the countries in terms of content distribution and supply capacity, would enable each country to reach its potential in a consolidated market and industry within the Asia region.

Figure 28: Audiovisual Content Industry Market Size Forecast



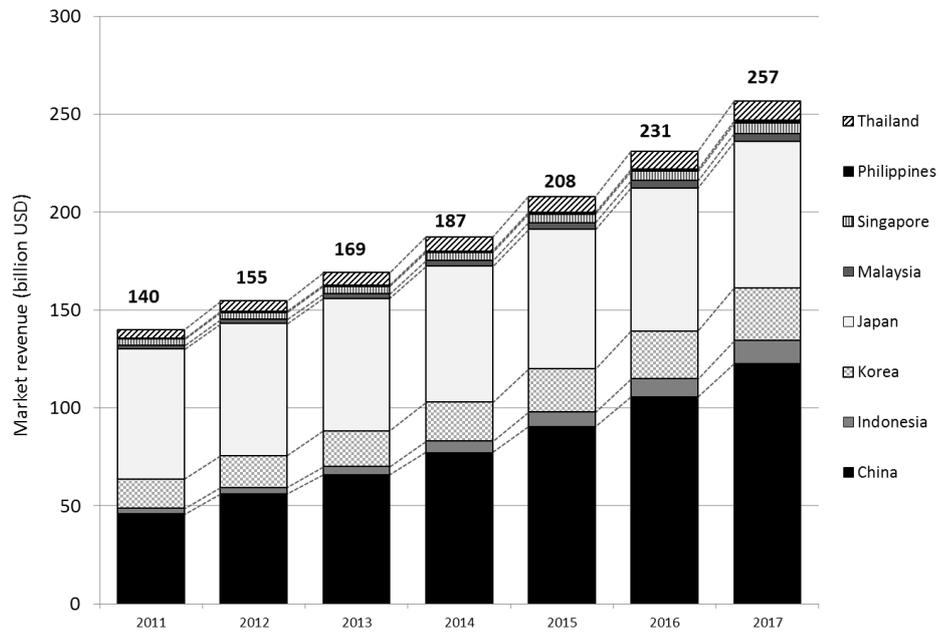
Source: Authors.

Figure 29: Market Revenue Forecast by Country (GDP Growth Scenario)



Source: Authors.

Figure 30: Market Revenue Forecast by Country (Potential Scenario)



Source: Authors.