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CREATIVE ECONOMY IMPACTS ON ECONOMIC GROWTH IN ASIA

The purpose of this study is to explore the impacts of creative economy on economic growth in Asia. The panel data for the period of 2003–2012 for 29 countries in Asia was analyzed according to creative economy data available. A regression model was developed and tested with a fixed-effect model. The results show that creative economy positively influences economic growth in Asia. As a whole, Asia is net exporter of creative goods, creative services, royalties and license fees, and also computer and information services.

Keywords: creative economy; economic growth; Asia; royalty; license fee.

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ВПЛИВ КРЕАТИВНОЇ ЕКОНОМІКИ НА ЕКОНОМІЧНЕ ЗРОСТАННЯ В АЗІЇ

У статті досліджено вплив креативного сектору економіки на економічне зростання країн Азії. Проаналізовано панельні дані за 2003–2012 рр. для 29 країн, по яких були наявні дані щодо креативної економіки. Побудовано регресійну модель та протестовано модель з фіксованим ефектом. Результати вказують на те, що креативний сектор позитивно впливає на економічний розвиток країн Азії. В цілому, Азія є успішним експортером креативних товарів та послуг, авторських прав та ліцензій, а також комп'ютерних та інформаційних послуг.

Ключові слова: креативна економіка; економічне зростання; Азія; авторські права; ліцензійний платіж.

Форм. 1. Табл. 2. Літ. 19.

Омас Булан Самосир

ВЛИЯНИЕ КРЕАТИВНОЙ ЭКОНОМИКИ НА ЭКОНОМИЧЕСКИЙ РОСТ В АЗИИ

В статье исследовано влияние креативного сектора экономики на экономический рост стран Азии. Проанализированы панельные данные за 2003–2012 гг. для 29 странам, по которым были доступны данные по креативной экономике. Построена регрессионная модель и протестирована модель с фиксированным эффектом. Результаты указывают на то, что креативный сектор позитивно влияет на экономическое развитие стран Азии. В целом, Азия является успешным экспортёром креативных товаров и услуг, авторских прав и лицензий, а также компьютерных и информационных услуг.

Ключевые слова: креативная экономика; экономический рост; Азия; авторские права; лицензионный платёж.

Introduction. Asia consists of 5 regions and 51 countries: 8 are in Eastern Asia, 5 – in Central Asia, 9 – in Southern Asia, 11 – in South-Eastern and 18 – in Western Asia. Its population is the largest globally, 4.4 bln in 2015 (UN, 2015), which is around three-fifths of the world population. Within the continent the population in 2015 is estimated to be smallest in the Maldives (364 ths) and the largest – in China (1.4 bln). The UN projections show that in 2010–2015 population growth was the lowest and negative in Syrian Arab Republic (-2.27% per annum) and the highest – in Oman (8.45%). It is also estimated that in 2015 Mongolia was the least populous country with 1.9 persons per km² and Macao was the most populous country with

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19,652 people per km². Large population in some countries of the continent, in particular Indonesia and India, has become a development challenge for the provision of public services, such as healthcare, education, employment, housing, transportation, food, water, sanitation, and energy supply.

In fact, development achievement varies greatly across in Asia. The United Nations Development Programme (UNDP) reported that in 2014, 12 countries in the region had very high human development achievement, 13 had high human development achievement, 18 had medium high human development achievement, and 5 had low high human development achievement (UNDP, 2015). Within the continent human development achievement was lowest in Afghanistan, ranked at 171st of 188 countries in the world, and highest in Singapore (11th globally).

The gap in human development achievement in Asia was contributed mainly by the disparity in economic development accomplishment, followed by inequality in education development attainment. Gross national income per capita (2011 PPP USD) ranged from only 1,885 in Afghanistan to more than 65 times of that in Qatar (123,124). Meanwhile, the 2012 mean years of schooling was the shortest in Bhutan (3.0 years) and the longest in Israel (12.5 years). Eliminating disparity in development achievement is therefore an important development agenda for Asia, in particular through fostering economic growth in countries of the region.

Countries in Asia have an opportunity to accelerate their economic growth. Fertility and mortality decline in most countries in the world since 1980s have resulted in changes in global population structure where working age population dominates population structure that gives opportunities for a country to accelerate economic growth through increasing saving, human capital, investment, and productivity. This window of opportunity to reap demographic dividend will last in most countries in Asia until after 2015. The dependency ratio, the ratio between the number of non-productive age population (0–14 years and 65 years and above) and the number of productive age population (15–64 years) of Asia will reach its lowest in 2015 where there are 47 non-productive age population per 100 productive age population.

Appropriate policies on capitalizing this window of opportunities will increase the chances to improve economic performance in Asian countries thus contributing to the reduction of development achievement disparities among the countries in Asia. These policies include improvement in access to health services, quality of higher education, and job creation.

As the world is entering the fourth wave of economy, that is creative economy, chances to improve the economic performance in Asia are open wide. Asia is rich with beautiful and amazing nature, cultural diversity, and people. Improvement in health, education, economy and IT have caused the increase of creative people numbers that in turn have resulted in the creative economy rise. This includes creative goods, creative services, royalty and licenses etc. (UNCTAD, 2015).

Studies have shown that population dynamics have significant effects on economic growth. A. Young (1995) demonstrated that fertility decline and increase in female labor force participation in "Asian tiger" countries have caused accelerated economic growth in the 1980s. Meanwhile, A. Mason and T. Kinugasa (2005) estimated that during 1960–2000 the demographic dividend contributed to economic growth rate: about 9% in China, more than 13% in South Korea, and almost 14% in

Singapore. They argued that with stimulating development policies, in particular, investment in education, health, and employment productivity, these countries have enjoyed accelerated economic growth from fertility and mortality decline that resulted in the domination of working age population. However, how is the relationship between labor force and economic growth in Asia? This study aims to analyze the association between labor force and economic growth in Asia.

Some studies have shown the importance of creative economy on economic growth. However, the studies are limited to a certain country (Jones, 2014; Allen Consulting Group, 2001) or for a certain sector (UNESCO, 2012). It is argued that creative economy has a promising prospect as an engine for economic growth. But, how does it relate to economic growth in Asia? Therefore, in this study the relationship between creative economy and economic growth in Asia is investigated.

Methods. The data in this study was obtained from UNCTAD and the World Bank. UNCTAD (2010) published detailed explanation of UNCTAD model for creative economy trade statistics. With this, UNCTAD Global database on creative economy is published. There are 4 groups of creative economy sectors: 1) creative goods; 2) creative services; 3) royalties and license fees; 4) computer and information services.

UNCTAD published creative economy data for 2003–2012. There were 29 countries in Asia that had creative economy data. These are Armenia, Azerbaijan, Bangladesh, Cambodia, China, China, Hong Kong, Cyprus, Georgia, India, Indonesia, Iran (Islamic Republic of), Israel, Japan, Kazakhstan, Korea (Republic of), Kyrgyzstan, Lebanon, Malaysia, Mongolian, Pakistan, Papua New Guinea, Philippines, Russia Federation, Singapore, Sri Lanka, Syrian Arab Republic, Tajikistan, Thailand, and Turkey. However, creative economy data for some sectors were not available in some countries for some years. For example, data on creative goods export and import was not available for Bangladesh in 2007–2012, while for Indonesia this data was not available from 2003 to 2009. There was no data on royalties and license fees export and import from Armenia during 2003–2012 and there was no data on computer & information services exports and imports for Azerbaijan in 2003–2004.

The variables in this study include creative economy variables from the UNCTAD and economic macro-aggregate variables from the World Bank. Creative economy variables consist of creative goods export, creative goods import, creative services export, creative services import, royalties and license fees export, royalties and license fees import, computer and information services export and computer and information services import. Meanwhile, economic macro-aggregate variables include gross domestic product/GDP (mln USD), labor force (thb people), and government expenditure (mln USD).

The data was analyzed descriptively and inferentially. Descriptively, summary statistics for the variables in this study are presented. These are the minimum, maximum, mean and standard deviation. Inferentially, a regression analysis using panel data with a fixed-effect model was conducted to evaluate the effects of labor force, net export creative economy, and government expenditures on economic growth in Asia. The regression model is as follows:

$$Y = b_0 + b_1LF + b_2NCG + b_3NCS + b_4NRL + b_5NCIS + b_6GE, \quad (1)$$

where Y is gross domestic product; LF is labor force; NGC is net export for creative goods; NCS is net export for creative services; NRL is net export for royalty and license fees; $NCIS$ is net export for computer and information services; GE is government expenditure; b_0 is intercept; b_i is parameter estimate for each independent variable, $i = 1, 2, 3, 4, 5$ and 6 .

Results. Summary statistics for labor force, government expenditure, creative economy variables, and economic growth are presented in Table 1. In Asia during 2003–2012 creative good export ranged from 0.129 mln USD in China Hong Kong in 2009 to 151,181.7 USD in China in 2012; creative goods import ranged from 8.7 mln USD in Mongolia in 2003 to 37,699.3 USD in China Hong Kong in 2012; creative services export ranged from 0.008 mln USD in Malaysia in 2005 to 9,331.6 USD in Russian Federation in 2012; creative services import ranged from 0.012 mln USD in Lebanon in 2005 to 12,406.6 USD in Japan in 2011; computer and information export ranged from 0.001 mln USD in Tajikistan in 2003 to 47,322.8 USD in India in 2012; computer and information import ranged from 0.039 mln USD in Malaysia in 2003 to 4,495.6 USD in Kazakhstan in 2003; royalty and license fees export ranged from 0.001 mln USD in Azerbaijan in 2003 to 31,846.1 USD in Israel in 2012; royalty and license fees import ranged from 0.041 mln USD in Tajikistan in 2010 and 2011 to 19,919.4 USD in Japan in 2012. Meanwhile, labor force varied from 500.3 ths people in Cyprus in 2003 to 787,632.3 people in China in 2012. Further, the government expenditure ranged from 128.5 mln USD in Tajikistan in 2003 to 1,217,505 mln USD in Israel in 2012. Furthermore, GDP was the lowest in Tajikistan in 2003 (1,554.1 mln USD) and the highest – in China in 2012 (8,229,490.0 USD).

Table 1. Minimum, maximum, mean and standard deviation of population, creative economy and economic growth: 29 countries in Asia 2003–2012, processed author's (UNCTAD and World Bank data)

Variable		Minimum	Maximum	Mean	Standard deviation	n
Export	Creative goods, mln USD	0.129	151,181.7	7,329.9	19,114.8	218
	Creative services, mln USD	0.008	9,331.6	941.8	1,700.1	239
	Computer and information, mln USD	0.001	47,322.8	2,002.9	6,508.1	236
	Royalty and license fees, mln USD	0.001	31,846.1	1,471.4	5,118.8	193
Import	Creative goods	8.7	37,699.3	3,623.8	6,832.5	220
	Creative services, mln USD	0.008	12,406.6	1,370.4	2,599.4	242
	Computer and information, mln USD	0.039	4,495.6	510.9	956.5	245
	Royalty and license fees, mln USD	0.041	19,919.4	2,546.8	4,534.8	222
Labor force, ths people		500.3	787,632.3	63,007.6	158,328.0	270
Government expenditure, mln USD		128.5	1,217,505.3	92,950.1	210,693.1	270
GDP, mln USD		1,554.1	8,229,490.0	556,825.3	1,258,106.3	285

The results of inferential analysis are presented in Table 2. The overall coefficient variation of the regression model is 0.438. It means that around 44% of variation in

economic growth in the countries in our study can be explained by the variation in labor force, government expenditure, and creative economy net export. The F-statistic of the model is 194.43. It indicates the model fits. All the variables in the model have significant statistical effect on economic growth at the significance level 0.001, except for royal and license fees net export which is significant at the 0.10 level.

The parameter estimate for labor force is 24.355. It means that labor force has positive impact on economic growth. It also means that the addition of one thousand labor force will increase GDP by as much as 24.355 mln USD. It is expected that increase in labor force may imply an increase in production factor that can contribute to economic growth.

The parameter estimate for creative goods net export is 50.436. It means that creative goods net export has a positive impact on economic growth. It also means that the addition of 1 mln USD of creative goods net export will increase GDP as much as 50.436 mln USD. The parameter estimate for creative services net export is 51.528. It means that creative services net export has a positive impact on economic growth. It also means that the addition of 1 mln USD of creative services net export will increase GDP by as much as 51.528 mln USD. The parameter estimate for royal and license fees net export is 21.397. It means that royal and license fees net export has positive impact on economic growth. It also means that the addition of 1 mln USD of royal and license fees net export will increase GDP by as much as 21.397 mln USD.

The parameter estimate for computer and information services net export is 34.138. It means that their net export has positive impact on economic growth. It also means that the addition of 1 mln USD of computer and information services net export will increase GDP by as much as 34.138 mln USD. It is expected that increase in creative economy net export may imply an increase in international trade that can contribute to economic growth.

The parameter estimate for government expenditure is 0.658. It means government expenditure has positive impact on economic growth. It also means that the addition of 1 mln USD government expenditure will increase GDP by as much as 0.658 mln USD. It is expected that an increase in government expenditure may imply an increase in economic activities that can contribute to economic growth.

Table 2. Parameter estimate, standard deviation, t-statistic and p-value of regression analysis of the effects of labor force, government expenditure, and creative economy on economic growth in Asia, author's

Covariate	Parameter estimate	Standard deviation	t-statistic	p-value
Intercept	-1,284,602.000	5.015	-4.19	0.000
Labor force	24.355	2.768	4.86	0.000
Creative good net exports	50.436	7.481	18.22	0.000
Creative services net exports	51.528	11.647	6.89	0.000
Royal and license fees net exports	21.397	9.036	1.84	0.067
Computer and information services net exports	34.138	0.181	3.78	0.000
Government expenditure	0.658	306,871.400	3.64	0.000

Conclusions and suggestions. The results of the study using data for 29 countries in Asia for the period 2003–2012 show there is a positive relationship between labor force, government expenditure, and creative economy and economic growth in Asia. Creative goods net export has strongest relationship with economic growth rate, followed by creative services net export, labor force, computer and information services net export, government expenditures, and royalties and license fees net export.

Therefore, it is recommended that countries in Asia should improve their creative economy performance to accelerate its economic growth and reduce development inequality in the region. The prospects are promising as countries in Asia are rich in creative materials and products that can be capitalized more. Also, capitalization of large labor force in Asia countries should be enhanced in particular through investments in people's health, education, and productivity, supported by good governance, so that the demographic dividend can be reaped.

The data used in this study do not cover all the countries on the continent due to unavailability of creative economy data in some countries. It is suggested that countries in Asia specifically and other countries generally, the United Nations Conference on Trade and Development, and the World Bank should provide more creative economy data so that further study using data for more countries can be carried out for better understanding the relationship between labor force, government expenditure, and creative economy and economic growth in Asia and in other regions.

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