美國高等教育財務現況與挑戰：從新自由主義到創意經濟

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摘要

本文首先說明新自由主義影響當前美國高等教育財務議題，其次探討有關創意經濟以及可作爲支持高等教育發展的緣由。主要研究方法是透過文獻分析與相關數據佐證，探討近年美國高等教育財務發展與創意經濟可能之影響。在美國高等教育財政體系上，聯邦補助、州政府補助與學生貸款政策扮演重要的角色。然而美國高等教育正面臨新自由主義影響與有限經費的挑戰。高等教育一方面獲得創意經濟經費支持外，另一方面高等教育因原有具備知識生產、聚集知識分子、和創新等特質，而回饋於經濟發展。科技、人才和包容等特質是創意經濟之根本同時也是高等教育之基礎。簡言之，高等教育與地方行政需要共同合作方能促成經濟發展。高等教育可促進創意經濟，以獲得經費並服務公共利益。

關鍵詞：美國高等教育、財務、學生貸款、創意經濟

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The Financial Conditions and Challenges of the Contemporary American Higher Education: From Neoliberalism to Creative Economy

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Abstract

This paper first introduces neoliberalism and its influences on American higher education financial issue, and then discusses creative economy and the support t may render to higher education development. The study is conducted through document analysis with relevant statistical figures. federal funding, state government funding, and student loans have played important roles in the financial system of American higher education. As American higher education today is facing challenges of neoliberalism and limited funding, it is argued, however, that higher education, with its characteristics of knowledge production, talent gathering, and innovation, may seek financial support from creative economy, and in return, contribute to economic development. Technology, talent, and tolerance are fundamental basis of creative economy as well as higher education. In short, higher education and the local administration need to work together to achieve economic growth. Higher education may promote the creative economy so as to gain funding and serve the public good at the same time.

Keywords: American higher education, finance, student aid, creative economy.

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I. Introduction

Contemporary America higher education is facing different challenges including financial one which is linked to neoliberalism. This paper first discusses how the American government financial supports and influences on higher education in recent decades. This also includes neoliberalism influences. Second part of this paper looks into concepts of the creative economy which may become an alternative approach for higher education institutions to earn funding and response to public expectation of increasing regional economic development. Many people may observe American higher education changes toward a more for profit and response to free market in the past decades. This is mainly due to the neoliberalism influences. Neoliberalism influenced the idea of free personal economic condition can lead to free society (Roberts & Peters, 2008). To conduct a free society based on freedom of economy should root in free market. Many public policy makers, especially western ones, use neoliberalism ideas to call for free market ideas in policies and emphasize on economic benefits and market ideology. Therefore, economic outcomes become a crucial concern in higher education policies. Higher education traditionally as more of public welfare service has changed into free market system in the recent decades. Therefore, the market and economy are been important issues in higher education. According to American Association of state Colleges and Universities (AASCU, 2013) , the top 10 issues of higher education state policy for 2013 are: “Boosting institutional performance”, “state operating support for public higher education”, “tuition price and tuition policy”, “state student grant aid programs”, “college readiness”, “immigration”, “competency-based and online education”, “guns on campus”, “economic and workforce development”, and “consumer protection involving for-profit colleges”. Six of the above issues involve economic concerns, including, “boosting institutional performance”,

"state operating support for public higher education", "tuition prices and tuition policy, state student grant aid programs", "economic and workforce development", and "consumer protection involving for-profit colleges".

Although economy concerns increase in higher education policies, the budget and funding from federal and state government cannot cover all the cost of higher education. Other than rising tuition and fee, searching for private funding are needed for most higher education institutions. In the creative economy era, higher education may use its original characteristic as knowledge producer and innovation provider to gain funding and promote regional economy growth. The following paragraphs will describe higher education development since 1980s, mainly the influence of global neoliberalism and increasing demands of higher education. After looking into the higher education development, the latter sections will look into American gorernment financial supports and influences on higher education and how the creative economy may be an opportunity for higher education institutions to gain external financial supports and contribute to economic development. Before understanding America higher education financial condition and creative economy issues, this paper will provide background of global neoliberalism and demends for higher education enrollment that together influence America higher education development.

II. Global neoliberalism influences

The emphasizing of economy is highly related to globalization and neoliberalism. It is hard to understand education policies and practices today without concerning globalization processes (Crossley, 2000). The concept of globalization is complex while usually it refers to the connection and influences around the world. The politically neutral approach defined globalization as an empirical reality in terms of the compression of time and space or as Castells (2000) claimed it as 'timeless

time' and 'space of flows', particularly associated with instantaneous communications technology. Another approach identifies globalization more as an economic discourse which actively promulgates a market ideology, and results from policies of neoliberal govern mentality (Olssen & Peters, 2005). Torres (2009) also claimed that there are four levels of global Neoliberalism: The first level involves neoliberal advocacy of free markets; the second level, however, is the "anti-globalization", which means advocacy of opposition to global neoliberalism; the third level involves a focus on global influence focusing on rights rather than on markets, such as human rights; the fourth level is the global war against terrorism. Although there are different meanings of global neoliberalism, many policy makers adopt the capitalism and free market to transform market ideology into policies. Neoliberalism influences policy makers to rethink knowledge produced through education system as commercial products which has market value. In their thoughts, education can educate people to be able to work with job market and increase economic profits. Education system may also produce new knowledge through conducting research projects to solve industry problems or lead to new innovative products. These concepts also combine with economy development leading to knowledge economy in 1990s.

Neoliberalism has been developed from critiques on extreme socialism and influenced policy making. Neoliberalism originally is based on liberal ideas developed after World War II to critique on Nazi's socialism (Roberts & Peters, 2008). Its assumption the foundation for political freedom is individual economic freedom based on free trade market that influenced many western policy makers (Harvey, 2005; Robert & Peters, 2008). In addition, Popper (1945) claimed that an open society is rooted in economic freedom as a key concept for democracy society. Economic freedom includes free market, free choice, open boundaries, and free trade that later on influence open market competition in many policy concerns. Educational policy is influenced by global neoliberalism and

has recognized the connection between education and economic growth (Marginson, 1997, 2007). Globally, socioeconomic policies driven by market force influenced governance and financing higher education(Hira, 2003). Education and its knowledge producing become an important economy developing element. Knowledge economy, furthermore, is one important feature which connected knowledge, education, and economic development together. Knowledge is considered as important stimulate and foundation for economy development during 1990s (Organisation for Economic Co-operation and Development [OECD], 1996; the World Bank, 1998). Knowledge based economy societies emphasize knowledge value because its product can be traded, and may influence national economic improvement. Drucker (1999) stated that both the quantitative and qualitative inputs of knowledge are more important than other capital, particularly since the rise of knowledge trading in the knowledge economy era.

Although some critique on capitalism side effects on education development which rose from neoliberalism (Apple, 2009; Torres & Heertum, 2009), there are still some who support the argument of using capitalism ideas. Walberg and Bast (2003) claimed that proper usage of capitalistic ideas can lead to reforms of the school system by increasing efficiency, competition, freedom, and subject value and pointed out the public misunderstands capitalism. For example, by using market ideas, schools will try to increase efficiency and focus on market target group to provide better services for their consumers. By clarifying the characteristics and value of education may help to achieve equity and conduct proper application of capitalism (Walber & Bast, 2003). These debates will continue but what can be sure of is the influence of global neoliberalism still plays important role in policy making. Higher education should seek a balance among the original research mission, reacting to public expectations, and the search for profits (Bok, 2003). Higher education may be unable to avoid the impact of neoliberal values and

market competition influences, but it is possible to gain profits on one hand and serve the public good on the other.

Education policies influenced by neoliberalism become as input-output system that emphasizing managerial responsibility and accountability globally (Seddon, 2009). Global neoliberalism has also transformed globally to make education focus on instrumental knowledge to pursuit commodity producer for the economic needs (Robertson, 2009). America higher education system is highly characterized by market society which is quite differnet from pure academica or state govern systems as some countries(Gürüz, 2003; Kerr & Gade, 1989). Many higher education policies focus on competition and profit, especially after the government is lack of funding to support higher education institutions. Higher education institutions are put into free market to compete for limited resources and work on earning profits to meet the financial gap between cost and funding. While higher education is influenced by neoliberalism for market challenges, there is also a growth in demands for higher education.

III. Growing demands for higher education

Following the neoliberalism influences, higher education degrees are also considered as a way to achieve personal and public economic goals. In fact, the general public has increasing demands of higher education because they realize the benefits of entering higher education. The first benefit is that people who attend higher education have higher lifetime earnings (Paulsen, 1998; Pencavel, 1991). Statistic data in favor of this assertion have accumulated for decades, showing attendance at an institution of higher education confers individuals with higher lifetime earnings (Doyle, 2007). Increasing income is a primary benefit for anyone

who attends higher education (Hansen & Weisbrod, 1969). Increasing income of higher education gradates may because the increasing skills and abilities, addition to the concomitant increase in productivity realized in the workplace (Bartel & Lichtenberg, 1987; Doyle, 2007; James, Alsalam, Conaty, & To, 1989; Wise, 1975). Another reason is those who attend higher education have character to earn higher income so that people who graduated from college are in general more able and ambitious than those who do not (Hansen & Weisbrod, 1969, also in Doyle, 2007). Evidence suggested that the income differential caused by student's innate aptitude could be as high as 50% in United States of America(USA, the following data in this paper was based on USA unless specific referred) (Hoxby & Terry-Long, 1999; also in Doyle, 2007). In fact, College enrollments have grown rapidly. Since 2001-02 to 2011-02, the number of fulltime undergraduate students raise from 8.6 million to 11.8 million that increased by 37% (The College Board Advocacy & Policy Center, 2012a). This growth is partly due to the weak labor market making school a more appealing alternative and partly because the growing gap between the earnings of workers having college degrees comparing with those who do not (The College Board Advocacy & Policy Center, 2012a).

The second benefit may relate to public one due to higher wage with paying higher tax (Doyle, 2007). In addition to paying tax, those who earn higher education degree are more likely to engaging growing firms' activities and economic activities leading growth of economy in general. Therefore, the government can charge higher taxes to spend tax revenues on public goods in return (Hanushek, Leung, & Yilmaz, 2003, 2004). Cooke (2005) stated universities to link local actors with global knowledge sources as a role of knowledge "transceiver" who obtained knowledge from other places and transformed it for local usage. Higher education may play the key role of fostering links between local economies and offshore network (Saxenian, 2002). Higher education not only benefits individuals but for greater public. Higher education institutions may

provide knowledge development and economy growth for the public.

U.S higher education institutions are influenced by global neoliberalism concerning both financial supports system and economic contributions. There is a complex system for how federal and state government financially interact with higher education. The following sections will first illustrate how federal level influences, the second one will discuss student aid system, and the third section will look into state level of funding. These three systems have strong influence on U.S. higher education economic development.

IV. government financial supports and challenges

Higher education is now influenced by market ideology and followed increasing demends of higher education. However, the increasing demand of higher education does not decrease the overall tuition and fees. The tuitions and fees are increasing rapidly in the past decades in United States of America (U.S.A). Over three decades from 1982-83 to 2012-13, the average published tuition and fees at private nonprofit four-year institutions rose from $10,901 to $29,056 as 167% increased while the increase for in-state students at public four-year institutions was 257%, adding from $2,423 to $8,655 (The College Board Advocacy & Policy Center, 2012b). In recent years, the average tuition and fee price at public four-year colleges rose from $5,213 (in 2012 dollars) in 2002-03 to $8,655 in 2012-13 (The College Board Advocacy & Policy Center, 2012a). Although state government takes the most responsibility to support higher education, the federal government is giving higher education more certain concerns and supports. Higher education institutions also need the financial investment to develop.

A. federal financial supports

federal supports higher education can be traced back to 1883 law as to agriculture experiment. However, the investment in academic is not highly increase until World War II. federal government is the largest resources for campus-based research during 2000s ($ 22 billion in 2001) but these focusing on small number of research based institutions (Gladieux, King, & Corrigan, 2005). The federal government also provided 59% ($32.6 billion) of the $54.9 billion of academic spending on research and development of science and engineering in fiscal year 2009 (Science and Engineering Indicators, 2012).

In fact, federal on-budget support for education increased 349% from fiscal year (FY) 1965 to FY 2009, after adjustment for inflation (National center for education statistic [NCES] 2011). federal funding for education declined approximately 16% between 1980 and 1985, but federal on-budget funding for education generally increased, showing a rise of 122% since 1985 to 2009, after adjustment for inflation (NCES, 2011). For fiscal year 2010, estimates show federal program funds for elementary and secondary education at $115.4 billion, for postsecondary education at $47.9 billion, and for other programs at $10.6 billion (NCES, 2011).

American supports mostly to defense related science and technology research for over fifty years. Research and Development (R&D) expenditures at higher education not only form federal government, but the industry and other sources also increase in the past decades. According to 2002 statistic, industry supports increase 310% (Gladieux et al., 2005). The limited budgets with concentrating in selected institutions and academic disciplines of federal funds also become challenging for higher education institutions searching for financial supports.

The influence of US government funding in favor of selected subjects or institutions is programs or institutions other than those selected one face financial challenges. Higher education institutions are out reaching for

funds and grants to support own researches. The competitive and limited federal government funds may restrict the development of institutions. Higher education institutions are competing globally by demonstrating research performances which highly relay on funds supports. If the federal government is unable to keep support or provide assistance to some institutions, these institutions will eventually turn to the market-oriented to gain funding and financial supports. The neoliberal change from social welfare to market-oriented resulted in corporatization, privatization, commercialization, and demands for accountability (Lipman, 2004). The accountability and efficiency combine with evaluation and ranking system to evaluate higher education performances based on cost-efficiency. The increasing demands of pursuing higher education degrees are characteristics of many countries. The connection between education and economy is expected to be tided in thoughts of knowledge economy.

B. Student aids

Another important funding support for higher education comes from tuitions and fees that students pay. However, the increasing tuitions and fees, partly due to increasing higher education costs, may restrict students to enroll in higher education. Therefore, student aids system becomes an important issue when concerning higher education economy. federal government assists students, family, and universities through tax policies and grants. There are several federal legislations and acts such as《Servicemen's readjustment act of 1944》(mostly known as G. I. Bill),《Higher education act of 1965》, and federal students' assistance programs provide supports to enlarge higher education opportunities for more students. Congress passed a major new direct federal grant program in 1972,《Basic education opportunity grants》(BEOGs, now called "federal Pell grant program"), to assist the earlier Educational opportunity grants (now called Supplementary grants) to provide need-based grant for low income students. Other federal, state, and institutional need-

based student aid programs were intended to build on Pell's foundation. Congress also initiated several federal programs during 1970s to improve the academic preparation and raise the educational aspirations of students who Pell program originally targeted. However, the commitment to support students to enroll in higher education has been challenged during 1980s and 1990s, even today due to government financial crisis.

There are supporters to emphasize lower income background students and considering need-based aids. By 1986 and 1992, under the《Title IV of higher education act》, government award students based on analysis of their needs (Gladieux et al., 2005). However, the《1997 Taxpayer relief act》, extending in 2001 of Economic Growth and《Tax relief reconciliation act》(EGTRRA), seems to shift away from need-based to benefit middle and upper income tax paying family to tuition expenses. Therefore, the Justice Department investigated the targeted group of institutions to protect the rights of students to obtain the best financial aids based on their needs. The student aid also shifts from grant-based to loan-based that until 2002, federal loans were $42 billion, three times more than Pell grant (Gladieux et al., 2005). The federal aid programs themselves have not changed so greatly in the past decades (Keppel, 1987; Mumper, 1996). The demographics of postsecondary students have certainly changed since that earlier period, with more students older than age 22 with more financially independent students, more students with dependents with higher enrollment, and more part-time students (The United States of America Department of Education, 2001). These changes perhaps fueled a sense among policymakers that college attainders are no longer such an identified youthful and needed population (Doyle, 2007). Additionally, student aid system has been critiqued of inequality. College board report only 44% of student aid went to students who need with nearly 40% went to no-need students (Bowen, Chingos & McPherson, 2009). The rate of attainment showed the inequality of students' backgrounds and student aid (Bowen et al., 2009).

The tuition and fees have raise dramatically over since 1980s. It makes American families more difficult to invest in a higher education for their next generation. According to the official White House website on support for higher education (White house website, 2013), in 2010, graduates having loans left college owing an average of more than $26,000. Student loan debt is more than credit card debt for the first time ever. In the same official website, President Obama's called for reform in higher education funding and produced the largest investment in student aid since the G.I. Bill. It tries to establish a more efficient, reliable, and effective system for students to help them to afford college and manage debt.

The growing loan emphasis and the parallel growing emphasizing on meeting the needs of the middle class families along with shifting responsibility from parents to students represent the most fundamental changes in the federal programs since the mid-1970s (Hearn & Holdsworth, 2004). Since the mid-1970s, loan aid has risen enormously as a large proportion of all federally supported aid (College Board, 2000b). To compare with grant growth, loan aid increased 125% over the 1990s, while total grant aid increased only 55% (College Board, 2000a). Total financial aid per full-time equivalent (FTE) student increased from $9,098 (in 2011 dollars) in 2001-02 to $14,700 in 2011-12 with increasing of 62% (The College Board Advocacy & Policy Center, 2012b). Although students borrowed about $8.1 billion from private, state, and institutional sources to help finance their education during the 2011-12 academic year, there is $236.7 billion of financial aid was distributed to undergraduate and graduate students in the form of grants from all sources, including federal work-study (FWS), federal loans, and federal tax credits and deductions (The College Board Advocacy & Policy Center, 2012b).

Rising costs as well as pressures on several sources of institutional revenue lead to stimulated increases in tuition charges in both public and private higher education institutions (College Board, 2000b; U.S.A. Department of Education, 2001). Although tuition fee rises, the enrollment

rates of undergraduate have been very strong (Geiger & Heller, 2011). The public increasingly recognizes the importance of attending postsecondary education (Harvey & Immerwahr, 1995). In such circumstance, rising tuition and enrollment rate result in greater demand for student aid. While U.S.A. Congress is not willing to raise taxes or to reallocate other funds to expand grant or work-study programs, the growing demand for student aid has been redirected toward growing demand for student loans (Hearn & Holdsworth, 2004). Policy makers may be more favorable to cost-effectiveness assessments approach for student loans than purely effect-oriented assessments. An analyst estimated that federal spending $1 on the non-direct guaranteed loan programs may generate as much as $2.50 more funding from the private sector to fund higher education students' attendance (Mumper 1996).

In federal student aid, President Obama raised the maximum Pell Grant award up to $5,635 for the 2013-14 which increased $905 since 2008 (White house website on support for higher education, 2013). Under the President Obama's administration, Pell grant recipients has expanded by 50% to offer college access supports to millions of additional low-income and middle-class students across the country (White house website on support for higher education, 2013). The "Health care and education reconciliation act of 2010" stands for Obama Administration's landmark in investing in the Pell Grant which ended student loan subsidies for private financial institutions and banks that shifted over $60 billion in savings back to students (White house website on support for higher education, 2013). The "American opportunity tax credit" is established in 2009 to assist families with the costs of college. It provided up to $10,000 for four years of college tuition for families earning up to $180,000 (White house website on support for higher education, 2013). There are over 9.4 million students and families benefit from the "American Opportunity Tax Credit" each year (White house website on support for higher education, 2013).

Although most students prefer grant aid over loans, with the rising

tuition fees and demand for higher education enrollments, the public may accepted loans as alternative for facilitating college enrollment. However, the economic depress since 2008, the loan system has cause pressure for students. Therefore, adopting different aid system may be the next step for higher education.

C. state government financial supports

While the federal government may increase influences through selected research fund, state governments provide the majority of support for higher education in the United States. For instance, across all States in the year 2000, 11% of total expenditures were spent on higher education with totaling 56 billion dollars to support the highly recognized U.S. higher education system (Doyle, 2007).

Doyle (2007) stated that higher state subsidies for higher education appeared while state-level inequality is lower. Although Title IV of higher education act concerning access issue, more considerations are given to academic quality and vocational usages today. There is a larger proportion of population to participate in higher education but the completion is another issue. Many under represented students enroll in higher education but fail to finish it due to various reasons including financial aid system (Bowen et al., 2009). The increasing international students bring financial benefits through paying tuition and living costs which support local business. Some institutions increase number of international students because this may achieve diversity, increase global influence, or earn more out-off-state tuition fee.

state government plays important but not always determine role in U.S. higher education. American higher education can be characterized as a kind of mix public-private system while state and private sector both have influence on higher education (McGuinness, 2005). During 1969-1970, higher education has financial supports about half from government (including federal and States), half from non-public sources (tuition,

private grants, and contracts) (McGuinness, 2005). However, this has been changed. For instance, 1995-1996, 62% of revenue was from students and private sector (McGuinness, 2005). McGuinness (2005) classified four levels of state control higher education: Institution as state agency, state-controlled institutions, Stated-aided institution, and cooperate model for institution governance. These categories not only show the relationship of the state governs over higher education institutions but moreover, with less state funding, the control may become lower.

federal and state policymakers with institution leaders believed that higher education may afford to take cuts in public revenues. They think higher education may make up revenue loss by increasing tuitions and financial aids. 1990s when the economy is in good condition, some state higher education budgets increased but this has changed. Both in federal and state levels, higher education budget is restricted while workload and inflationary increased. (Institute for higher education policy, 2001). While the state funds higher education, the outcomes of higher education are gaining policy makers' attentions at the same time. Some state governments adopt performing funding or performing budget system to meet accountability concerns (McGuinness, 2005). With growing needs with less state funding, higher education institutions are turning to search funding from private sectors. While state governments use accountability to evaluate higher education reflecting budgets, policy makers also expect higher education to contribute to local economy.

V. Higher education and the creative economy

Higher education institutions in U.S. are dealing with financial issues. On the one hand, higher education institution cannot just raise student

tuition fees to meet the needs. Depending on federal student aid and expecting States to increase funding are not effective solutions for higher education. On the other hand, to answer the public of economic growth, higher education needs to play active role in economy development. Therefore, higher education institutions are looking for alternative approach to gain financial supports and response to the needs of economy development. Creative economy may serve as an alternative model for higher education institutions. Higher education institutions are cooperating with private sectors or trying to work on patents for profits. It is hard for most higher education institutions to earn much from royalties due to the chance of getting significant profitable discoveries for patenting is relevantly low. However, some cases of outstanding successes of a few patients with high income of royalties in a few institutions may encourage higher education institutions to support commercially valuable innovations. These innovations may also be referred as response to the public expectation of economy needs. Higher education institutions may go for creative economy which focuses on innovations.

A. The creative economy

The creative economy emphasizes both creativity and innovation as important strength for economic development and knowledge production. The meaning of creative economies varies, but their influence can be recognized in many policies and reports, such as United Nations‘Reports on creative economy. (United Nations Conference on Trade and Development [UNCTAD], 2008, 2010). Howkins (2007) described creative economy as recognizing creativity and innovation as a main generation for today’s economy growth. The concept of creative economy can be traced with long historical literatures. Peters and Besley (2008, 2009) stated that Howkins’s account of the creative economy has followed and emerged from a long development of literatures concerning the changes of social and knowledge structures, including: the “creative

destruction" by Schumpeter with his account of entrepreneurialism; Hayek's (1937, 1945) economics of knowledge individualism and subjective theory; Becker's (1962) human capital theory; Machlup's (1973) study of knowledge distribution in the US economy; Bell's *The Coming* of Post-industrial Society (1973); Drucker's (1969, 1973) focus on the knowledge worker and knowledge management strategies; the Third Wave "technological revolution studies" by Toffler (1970, 1990); Lyotard's (1984) *Post-modern condition*; Romer's (1990) endogenous growth theory; the OECD's (1996) declared of "knowledge-based economy" and the World Bank's "Knowledge for development" and "Education for the knowledge economy"; the 'new economy' readings of the 1990s; Quah's (2003) the "Digital goods and the new economy". These literatures involve ideas of forms of knowledge and the usage of knowledge production that leading toward economic development. On the one hand, the creative economy needs the *social market* to establish network to exchange and explore knowledge; on the other hand, the creative economy needs commercial market to transform creativity into wealth (Howkins, 2010). In short, creative economy developed from many concepts including producing knowledge, innovation, and knowledge products transforming to economic outcomes. Moreover, knowledge product and innovation link to the knowledge producing system which education can involve. If education could contribute to creative economy, education may not only generate economy for the public, but increase profits and funding for an institution's development.

The creative economy was about 6.1% of global economy which worth $2.7 trillion by 2005 (Howkins, 2007). There are around 40 million workers who represent about 30% of workforce are working in creative sectors accounting for more than $2 trillion dollars in wages and salaries, as much as the total of manufacturing and service sectors (Florida, 2007; Florida Gates, Knudsen & Stolarick, 2010). Peters and Besley (2009) examined creative economies and academic entrepreneurship

claiming they are ethical and social culture issues. Networking and social infrastructures have been influenced by creative economic concepts of collective intelligence. Benkler (2006) used the term of “social production”, while Peters and Besley (2006) used “culture production” to refer to the new paradigm of the creative economy. Creative economy has already generated roughly 20 million new jobs between 1980 and 2000, and may add another 10 million positions between 2004 and 2014 (Florida, et al., 2006, 2010). There is a growing development and job market for creative economy in 2000s.

The long influential concepts of creative economy are emerged from post industry, post structure, knowledge economy. Even today, creative economy includes different overlapping concepts such as “creative industries” or “culture industries”. These notions have been incorporated into policies in countries such as Taiwan; Hong Kong; Singapore; New Zealand; Queensland, Australia; Great Britain; and the U.S. (Hartley, 2005). In creative economy, the value of manufacturing focused on entity products and emphasized influential ideas and generalized creativity. The OECD (2000) published a book, The creative society of 21st century, in which the authors state that creativity is a social feature and an important element of economic growth. UNCTAD’s (2008) *Creative Economy Report* defined “creative economy” as an involving a set of knowledge-based economic activities including cultural values and cross-cutting linkages to the overall economy. UNCTAD’s (2008) analyze of “creative economy” included following ideas: concept based on creative assets and intellectual capital that may potentially generate socio-economic growth; involving economic, cultural and social aspects interacting with technology and tourism objectives; generating income, creating jobs, exporting profits, as well as increasing social inclusion, cultural diversity and human development; one important policy option to promote trade and development.

After the dotcom crash of 2000, content and creativity became a focal

point in IT industry activities, an occurrence that reflects a change: from the industry‘s original production orientation toward a creative content orientation (Hartley, 2005). Florida (2002) claimed that a new rising “creative class” whose interests are related to economic developments that involve creative innovations. These “creative class” people can earn higher salaries because their creative works contribute to economic growth. Landry (2008) claimed that large cities often value the type of creativity that empowers creative citizens’ interactions and promotes local economic growth. DeNatale and Wassall (2007) stated creative economies into two models. The first one is the producing the cultural goods and services. The second one, called intellectual innovation, drives the economic development of certain cultures (DeNatale & Wassall, 2007; Peters & Araya, 2010). Creative industries are the cycles of creation, production and distribution of goods and services by using creativity and intellectual capital as primary inputs (UNCTAD, 2008). Creative economies include a series of activities based on knowledge to produce tangible goods, intangible intellectual or artistic services within creative content, economic value and market objectives. (UNCTAD, 2008). Therefore, the term “creative economy” can be used to cover both culture and creative industry issues. Creative economies can be recognized as being broader in content. It involves the individual creativity, social relationships, a creative economy producing process, and a supportive surrounding environment that surpass the creative economy product itself. The core of creative economy is similar to knowledge economy is the “knowledge” but more focus on creativity and innovation. Therefore, education system can adopt such idea to increase individual or collective creativity.

B. Higher education reacts to the creative economy

While U.S. higher education institutions are facing economic issues of limited or conditional funding from the government, higher education can adopt creative economy to play a fundamental role in innovation and

economic development. Higher education is the center for knowledge producing, sharing, and educating for regions. Human creativity is the driving force of economic growth that differs from the past which focuses on natural resources and physical capital. Higher education institutions offer “open knowledge” to share knowledge and provide collaborative knowledge producing lead to innovations and raise human capitals promoting economy growth (Peters, Liu, & Ondercin, 2012). The creative economy emphasizes the value of innovation and influences the culture of knowledge production. Knowledge production is no longer hierarchical form, but rather involves social networking.

Economic growth in the creative economy is driven by technology, talent and tolerance, also called the 3 T’s (Florida et al., 2006, 2010). The first T, technology, refers to the technology innovations created by the higher education institutions. Technology can also help to increase cooperative and collective knowledge producing as offering less but easy access platform for information sharing and interacting. The research and development of higher education institutions gain the public and private attentions to rise funding. Higher education institutions conduct latest researches and innovations. These new innovations may lead to economy growth by attracting industries investment, solving problems and creative new business. The cooperating with industry may gain private funding for higher education institutions. Many researcher conducted by industries in 1960s are now been conducted in major research university(Yudof, 2009). state governments expect higher education institutions to promote local economy growth. However, as what stated before, innovations are not easy. Moreover, higher education institutions’ invention may not necessarily result in regional high-tech industry or economic growth. Only some regions around major research univeristies are identified as high technology development area such as “Silicod Valley”, while many other regions surroundings around a research university are not. To transform these inventions into commercial innovations or economy growth, a

broader supportive regional ecosystem is needed to incorporate these researches and inventions (Florida et al., 2010).

In addition, by using technology in higher education may encourage creative knowledge prdocing and efficiency. Technology such as the Web 2.0 and other media may provide easier access to knowledge with less cost. These communication technology offer the platform for more individuals to interact and share information. This may also provide knowledge exchange and producing. Higher education can be the platform or hub for producing knowledge to innovate creativity. The starting of technology system and infrastructure may need some investment, but the cost of maintains is relevantly low. Some tuitions and fees may also reduce if advanced technology can be introduced into higher education teaching. Through virtual open education can offer education resources to more students. Some classes and discussions are offered on-line so that higher education only need to pay for less faculty members and maintains of infrastructures. This not only help students to release from load pressure but also reduce some costs for higher education management.

The second T, talent, refers to higher education is generating, attracting, and retaining talent people and human capital (Florida et al., 2006, 2010). Higher education institutions attract faculty member and other talented people to come together. For the creative economy, gathering of talent people may stimulate creative thinking and innovations. Companies, research laboratories, or industries are also interested in investing higher education for working with these talent people in turn of benefit innovations. Findings showed universities have potential to assist region economy growth by increasing creative class in work force and attract other investment (Florida et al., 2010). The third T, tolerance of university is open to new ideas and respect for diversity. This inclusive perspective attracts students and faculty from a wide variety of racial and ethnic backgrounds, income levels, sexual orientations, and national origins. This may support equality of student access and support their

attainment. It also supports the concept of equality to offer the diverse student background.

In addition, higher education communities often open to new ideas and encourage diversity. This encourages innovations and generates new ideas to attract entrepreneurial enterprises development leading to economic growth. However, the university must be integrated into the region's broader creative ecosystem to become an effective contributor to regional innovation and economic growth. Higher education and regions need to cooperate to build a supportive and connective environment to achieve economic development. When turn the concepts of technology, talent and tolerance into practice, with higher education institutions and region's collaboration, creative economy may occur. Higher education institutions contribute to creative economy as sharing knowledge, encouraging collective knowledge producing, and increase innovations (Peters et al., 2012). The economic growth can improve living standards for the people and attract more talent people to the region. Higher education can play a center role to support technology, talent and tolerance for the region to conduct creative economy.

Concepts of creative economy support higher education to conduct knowledge production and alternative way for searching funding. federal and state government are influenced by the economic depression may restrict the funding for higher education. Therefore, higher education may adopt creative economy to raise funding and also contribute to economy development.

VI. Conclusion

U.S. higher education institutions are focusing on market and economy issues. This partly due to global neoliberalism influences. Moreover, federal and state governments provide funding along with

student aids to support higher education. For federal government, its funding is mostly given to selected institutions and disciplines, such as science and technology. Student aids system support students to attend higher education but is critiqued as in favor of middle class family. state governments play an important role to finance higher education institutions. However, higher education institutions are receiving more and more funding from private sectors than public ones. The public expects higher education to play an active role in economy development while the government financial support is not meeting higher education institutions' needs. Therefore, higher education institutions are turning to rise funding through other means.

Meanwhile, the creative economy emphasizes creativity, innovation, and knowledge as generating economy growth. Higher education may take advantage of its original knowledge producing role to participate in creative economies. This may help higher education to gain more funding as well as serve the public good to improve region economy development. Higher education can contribute to creative economies by its unique characteristics. Higher education institutions has what called 3 Ts (technology, talent, and tolerance) needed in order to achieve and contribute to the creative economy. Higher education institutions may not necessary lead to local creative economic growth directly, but may provide fundamental development for broader social economic development in the long term and need ecological supports. U.S. higher education institutions may participate in creative economy to assist the original federal and state funding. Student aid system may also become more open and equal as the idea diversity. More researches on the relationship and influence of creative economy and higher education can be conducted in the future. The practical ways of linking creative economy and higher education can also be explored in the future studies.

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