

# The Human Capital In The Context Of The Reconfiguration Of The Power Poles. Case Study: China And Japan

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**Abstract:** In the last decades, once with structural changes in production, organizations, technology and social environment a radical change in the economy has been underlined that substitutes the traditional economy based on industry-led services characterized by innovation and knowledge creation. At the same time, emerging economies have managed to win the battle with the world's major competitors, even overtaking several of them. A representative example is the two countries: China and Japan, that in present are the top three economies in the world.

The human capital and - particularly the investment in education - determine the ability of individuals to earn as well as his perspectives of employment. Since most of the knowledge and skills are acquired in school, through the educational process, education has been recognized as the decisive part in the accumulation and development of the human capital and therefore in the economic development of a country.

Considering the above arguments, the aim of this paper is to highlight the characteristics of human capital in China and Japan (in terms of investment) and its benefits.

**Key words:** human capital, education, competitiveness, investment, skills

**JEL Classification:** J24, O15

**Introduction**

From the beginning, post-industrial theories were the foundation of human capital development, supporting economic benefits which education delivers to society. The initiators of human capital theory have equated the workers knowledge and their level of formal education – the quantitative indicators related to the estimated schooling level of the economic benefits of learning. According to this theory, a higher education leads to increased productivity and macroeconomic growth (Schultz, 1963, Becker, 1964). The hypothesis was supported by the economic growth of developed countries after the World War II.

The choice of the two countries - China and Japan for case study finds justification in a surprising economic development that these two countries had in the last few decades and in efforts to increase the quality of education, both in terms of access and content in order to improve the knowledge and skills of the population. In a more complex review, the entire Asian continent can be a real case study related to the relationship between economic growth and investment in human capital linked to highlighting examples of good practice and at the same time showing the disparities between nations of Asian continent. Reconfiguring the poles of economic power in recent years and moving the focus from Europe to Asia, while threatening and US economic leadership, represents another strong argument in choosing China and Japan as examples for the case study.

This paper will analyze the situation of the two countries in terms of investment in human capital as a factor of economic growth.

**1.The Investment of Human Capital in China (analysis of formal education)**

In China, since the beginning of economic reforms, in more than thirty years, the economy grew at an impressive rate; proof being the huge increase in GDP per capita (from “\$ 190 in 1978 to \$ 5,432 in 2011). From 1960 to 1980 China’s average growth rate was 7.2% per year. However, China’s success, as it was the case of other countries in South-East Asia, continued to grow and in the next period the growth target was exceeded (1980-2000), registering an average growth rate of 8.2% per year. In this context, the human capital has played a significant role in the miracle of continued economic growth.

In addition, studies show that investment in human capital in China have also led to a significant effect on productivity growth and on the reduction of regional disparities (eg Fleisher, Li and Zhao, 2009)<sup>1</sup>.

Education in China is divided into four cycles, specific to age and educational level.

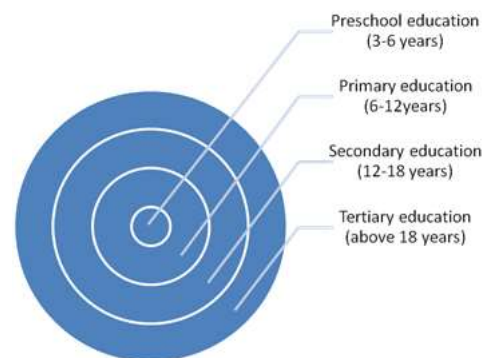


Fig. 1. Educational structure in China

<sup>1</sup> Belton Fleisher, Haizheng Li, Min Qiang Zhao, Human capital, economic growth, and regional inequality in China, Journal of Development Economics, Volume 92, Issue 2, July 2010, Pages 215–231

The first stage is the preschool education - correspondent to kindergarten (age 3-6 years). The second level includes primary school (age 6-12 years), followed by secondary education (age 12-18 years) and tertiary education (from the age of 18). Secondary education includes specialized high schools, vocational and technical education schools. Tertiary structure is the university which includes colleges and universities, as well as postgraduate education which includes master and doctoral studies.

Chinese government recognized the importance of investment in human capital, including, in addition to the need for increased investment in education, a strong need to improve the investment in health and early childhood development designed to enhance the standard of living, especially in rural areas. The policy stimulating the population to follow a form of education was a requirement after the war in the early 50. During that period, China recorded an extremely high rate of illiteracy. Although there have been concerns about the increasing level of education among the population, concrete actions were recorded for more than three decades. The actions initiated since the 80s, illiterate population was halved from 402 million in 1982 to 201 million in 2000, this rate managed to remain stable in the following years. The year 1986 is a reference year for China's education as mandatory schooling was introduced. The mandatory education consisted of nine years (six years in primary school and three years of secondary education). The results of this reform were significant especially in urban areas where there were significantly more financial resources than in rural areas. Rural areas, characterized by poverty and isolation, experienced high rates of abandonment (e.g.

only two thirds of the students managed to complete the entire primary education cycle). At the level of secondary education, we can notice the same characteristics, high rate of enrollment in education, but with a low rate of graduation, especially noted in female segment, whose families live in poor regions without financial means to support costs associated with education or because of cultural constraints. At the same time, higher education has suffered so hard because of poverty, and the so-called "cultural revolution" - a period of time when the universities were closed. Concrete concerns and actions taken to catch up with other Asian countries and boost the enrollment rate in higher education was first registered in 1976. An even higher interest came less than two decades later, in 1998 and belongs to Jiang Zemin, General Secretary of the Communist Party of the People's Republic of China. He intuited the potential of the well-trained human resources and demanded a substantial increase in enrollment in higher education. The results of this requirement and its implementation were significant. According to researcher Robert Fogel, the next four years, „enrollment in higher education increased by 165% (from 3.4 million to 9.0 million)"<sup>2</sup>. At the same time, according to the China Statistical Yearbook 2003, the rate of students studying abroad increased by 152%. In 2005, China recorded about 20 million students enrolled in higher education, surpassing even the United States.

Although there are significant successes in education, China's situation is still marked by both high rates of inequality in

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<sup>2</sup> Robert Fogel, *Why China is Likely to Achieve its Growth Objectives*, NBER Working Paper No. 12122, Issued in March 2006, <http://www.nber.org/papers/w12122>, accessed March 2013

the education and a growing need for well-trained workforce to help promote sustainable economic growth.

This state is maintained by a very small percentage allocation for public spending on education and promotion, especially in the tertiary system, of private expense in human capital, particularly supported by the family. The policy of passing the responsibility of tertiary educations expenses to family expenses is generating huge inequalities and the persistence of poverty across generations. Therefore, the Chinese government should create a package of measures including increasing the percentage of GDP allocated to education, finding credit packages for the education of young people from poor families, the development of the school network in less advantaged environments at social and regional level. In addition to these urgent and necessary steps to continue and pursue reforms and sustained economic growth it is needed, as stated by the American economist - Nobel laureate for economics - James J. Heckman, an educational market liberalization in China, encouraging competition in this system.

Thus, J. Heckman notes "Increased public spending is not the only way to improve the quality of education. A lesson learned from educational institutions in the United States, Europe and other countries around the world is increasing the value of education through competition and incentives offered in schools"<sup>3</sup>. Therefore, an education system subject to a direct competition between

<sup>3</sup> James Heckman (2000), op. cit. Heckman, James J.; Yi, Junjian (2012) : Human capital, economic growth, and inequality in China, Discussion Paper series, Forschungsinstitut zur Zukunft der Arbeit, No. 6550, <http://nbn-resolving.de/urn:nbn:de:101:1 201301189228>

public and private institutions, even between national and international institutions will be forced to invest in providing high quality knowledge to remain competitive. Currently, this solution is not a priority for the authorities in China, although benefits seem to recommend it.

## **2.The Investment of Human Capital in Japan (analysis of formal education)**

Japan's remarkable economic results represented the bridge to the basis for important economic theories and complex analysis on the factors that influenced the economic development of this state. Numerous studies have indicated that although Japan is a country with limited natural resources, it focused its development strategy on knowledge, innovation and human capital development.

Moreover, in the scientific literature, the twentieth century is characterized as the "century of human capital."<sup>4</sup> According to Claudia Goldin, the need for human capital formation was accelerated by the United States as a result of a high demand for educated labor force. This need was a consequence of technological and organizational change which occurred once with increase in number of large enterprises and once the new scientific knowledge was applied to existing industries. Japan began modern economic growth in the nineteenth century and in the early twentieth century there was already a significant number of large organizations comparable to USA companies. This rise requires trained, adapted labor force in terms of knowledge in creating new tasks specific

<sup>4</sup> Claudia Goldin, The Human-Capital Century and American Leadership: Virtues of the Past, The Journal of Economic History 61 (June 2001), p. 263–92

to the new economic realities. To achieve this goal education system was continuously changed without a significant comparison between the educational system in Japan before and after the Second World War. The education system in Japan before the end of the Second World War was segmented into primary, secondary and tertiary. According to studies conducted on Japanese education system, „leading institution for primary education was primary school and secondary education schools containing medium schools for girls, vocational schools (vocational) and normal schools“<sup>5</sup>. Higher education in Japan had been divided into high schools, universities, colleges and superior normal schools.

After the Second World War the structure of the education system has changed and become simpler. According to Miyazawa Kensuke, the Education Act of 1947 was the time of the reorganization of the formula 6-3-3-4 system. Therefore, the general education included: (1) six years of primary school (Shogakko), (2) three years of secondary school (Chugakko), (3) three years of secondary superior school (Kotogakko) and (4) a university system of four years (Daigaku). To step through the whole process it was required the completion of the previous cycle. The educational system requires compulsory primary and secondary education.

In present, although Japan has one of the highest levels of education, the concerns for maintaining a system of advanced education are directed towards adaptation and innovation according to economic and social changes. Current policies are moving

towards the creation of specific skills of the labor market needs so that the disadvantaged generations (youth and women) can be a viable human resource.

As proof that education receives a special attention there are reforms initiated and expenses are made for its development. Public education in Japan is funded primarily by public system and private funds are invested for tertiary education. According to the reports made by the OECD<sup>6</sup>, in 2010 the annual expenditure on education services in primary education was 8 353 USD per student, secondary education was 9 957 USD per student, and at the tertiary level average expenditures are 16 015 USD. Compared to the average the educational expenditures are growing in Japan even under the auspices of the financial crisis. In other OECD countries, spending on primary education is 7974 USD per student, for secondary education – 9014 USD and for tertiary education is 13528 USD. Although primary and secondary education is supported by the public budget studies indicate that there is a significant increase education achieved in private institutions. The families' preference to support the education of children from private sources is justified by the higher scores these young people obtain at testings, leading to an increase in quality of human capital. Meanwhile, the propensity of families to ensure the best education for their children is explained on the one hand by Japan's recorded positive economic experience with investment in the education of its citizens, and on the other hand due to the increase of financial opportunities of families with fewer children. In the study

<sup>5</sup> Miyazawa Kensuke, Measuring Human Capital in Japan, RIETI Discussion Paper Series 11-E-037, The Research Institute of Economy, Trade and Industry (2011), p. 5

<sup>6</sup> Raport OECD, Education at a Glance 2013, Country Note: Japan, p. 1 [http://www.oecd.org/edu/Japan\\_EAG2013%20Country%20Note.pdf](http://www.oecd.org/edu/Japan_EAG2013%20Country%20Note.pdf)



conducted by Naohiro Yashiro "in Japan, the average number of children per family fell from 4.27 in 1940 to 1.96 in 2010, and college enrollment ratio has steadily increased from 2% to 45% for women and from 13% to 56% between 1955 and 2010 for men."<sup>7</sup> Therefore, there is an inverse relationship between birth rate and investment in human capital by Japanese families. Increasing financial possibilities of families, along with a double meaning given to higher education have increased the attractiveness of attending this level of studies. First, the faculty is an important tool for acquiring knowledge and skills certified guaranteed by the higher education institution, and secondly it is a tool to verify and validate the potential ability of an individual. Many large companies adopt the strategy to identify potential employees among students enrolled in an academic program. To find potential employees, companies identify the most appropriate students within the faculty, and then invest in developing their skills by organizing training sessions, using as well and / or a job rotation method occupied by an individual within the company. Moreover, in Japan the development of human capital in the organization is a strategy often used, and wages are directly proportional to the number of years of experience and seniority the individual has in the organization. Japanese culture of a long-term employment is not a new strategy and its benefits can be easily identified in Japanese organizations. Therefore, human capital development is stimulated by working on jobs that confer long-term safety and drives its employees to focus on devel-

<sup>7</sup> Naohiro Yashiro, Human capital in Japan's Demographic Transitions: implications for other Asian countries, p. 5, <http://www.eaber.org/sites/default/files/paftad/chp%204%20Yashiro%20final.pdf>

oping superior skills acquired through rotation of several jobs within the organization. Also, remuneration which is based on a longer stay in the same organization establishes higher opportunity costs for employees who leave the company. However, there are obstacles in the optimal use of human capital. One of these obstacles is to major differences between the benefits workers who have permanent contract have and those employed who are employed for a determined period. For example, the main differences lie in lower wage levels, lack or reduction of benefits that permanent employees have (health policy, education/ training opportunities etc.). Another problem in using partial human capital represents the female segment that leaves the labor market to raise the child. Number of mothers who choose postnatal leave is quite high compared to the average in OECD member states and by their return of this period most of them opt for a reduced work schedule. This temporary or partial loss of an important human resources is influenced both by cultural factors (in conservative families, the woman is the one who has to stay home and raise children) and socio-political factors as the inadequacy of policies that promote reintegration mother at work, subsidizing kindergarten and promotion of improved facilities offered by kindergartens.

Another threat to human capital is its growing number of employees of other nationalities, graduates of Japanese educational institutions. Current foreign graduate employment is a normal consequence of the globalization process and it is supported by Japanese policy regarding internationalization of education, especially for higher education. Internationalization of education is a process that started in the 80s and it was

linked to a number of actions in order to achieve a highly competitive global education market. The first action was initiated in 1983 when it was planned to attract 100,000 international students by 2000. About two decades later, in 2002, scientists have proposed and planned development of global centers of excellence programs to stimulate the collaboration of international research. Then in 2008, he returned to the targets and to set a target of attracting 300,000 foreign students by 2020 out of an equal number of Japanese students to study abroad. More recently, in 2011, compulsory English courses were introduced from fifth and sixth grade pupils of primary school. In higher education segment there were offered 7000 scholarships for Japanese students studying abroad to allow the study of a three to twelve months.

### Conclusions

In terms of education in Popular Republic of China, studies show that investment in human capital influence the productivity growth and have benefits on reducing regional inequalities prevalent in China. An important step in the development of investment in education was made at the time of recognition by the Chinese government in 1986 the need for increased investment in education and health. These two areas are key factors in early childhood development and aim to raise the standard of living, especially in rural areas, reducing inequalities. However, rural areas characterized by poverty and isolation are experiencing high rates of abandonment. At the level of secondary education it is retained the same characteristic, high rate of enrollment in education, however with a low rate of graduation, especially in women's case. Causes of high dropout are either the difficulty to find financial resources to sustain education or the socio-cultural conservatism impeding the enrollment,

especially of girls, in schools.

Although there is a significant success in education, the education system in China should be subject to review and should be actively intervening in vulnerable areas to reduce inequalities. Also, it must allocate a higher percentage of public expenditure on education. Existing policies appear to be partially ineffective because passing responsibility family expenses is generating enormous inequalities and the persistence of poverty across generations. At the same time, we need well-trained workforce to help promote sustainable economic growth. Therefore, an education system characterized by competition between public and private institutions, even among national and international institutions is a necessity for improving the quality and competitiveness.

In terms of education in Japan, it is situated on a higher level than in China. Moreover, the literature devotes important studies which demonstrate that investment in human capital are the base of the economic growth of this nation quite poor in natural resources, but with amazing potential in terms of human resources. The proof that education is a key factor is based on the reforms initiated and expenses made for the development. Public education in Japan is funded primarily by public system and private funds are invested for tertiary education. The families' preference to support the education of children from private sources is justified by the higher scores these young people obtain at testings, leading to an increase in quality of human capital. At the same time, the development of human capital is a consequence of a functioning labor market. Employment for a long period is safe and stimulates employees to improve their knowledge, skills and competences both through training and through experience gained by rotation of several jobs within the organization.

Nevertheless, there have been identified obstacles in the effective use of human capital. One of these obstacles consists of large differences between the benefits the employees with a permanent contract have and those who are employed on a determined period of time. Another problem in using partial human capital represents the female segment that leaves the labor market to raise the child. This temporary or partial loss of an important human resources is influenced both by cultural factors (in conservative families, the woman is the one who has to stay home and raise children) and socio-political factors as the inadequacy of policies that promote re-integration mother at work, subsidizing

kindergarten and promotion of improved facilities offered by kindergartens.

Increasing the number of employees of other nationalities, graduates of Japanese education is another threat for optimal use of the human capital for the Japanese nation.

In conclusion, although there were identified a number of limitations of human capital formation and utilization in the two countries analyzed, significant economic progress and development that was made in the two countries are key factors used as positive examples in the relationship between human capital and economic growth, especially in the case of Japan.

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