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THE EVALUATION OF USING OF HUMAN CAPITAL IN G-7 COUNTRIES: ACCORDING TO EDUCATION LEVEL

Meriç S. ERTEKİN

Anadolu Üniversitesi, İ.İ.B.F., İktisat Bölümü, Yardımcı Doçent Dr.

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Abstract: *The role of human capital is important as a source of economic growth in the present economic environment. There is widespread acceptance that better education and trained workers increase productivity and economic growth rate. In this process, there is a huge struggle to improve the education and training systems and to improve human skills. They usually raise income for everyone. Therefore, people invest in human capital. This paper represents a new view of the use of human capital in G-7 countries with data of level of population on education, employment, unemployment rates and earnings. The focus is a view on labour market to compare unemployment rate and wages according to educational level of G-7 countries. In the conclusion of this paper, it is seen that there is unemployment in these countries, and the rate of unemployment is low and the wages are high for high-skilled and highly educated workers.*

Keywords: *Human Capital, Education, Economic Growth, G-7 Countries*

G-7 ÜLKELERİNDE BEŞERİ SERMAYE KULLANIMININ EĞİTİM DÜZEYİNE GÖRE DEĞERLENDİRİLMESİ

Özet: *Beşeri sermaye, ekonomik büyümenin bir kaynağı olarak önemli bir role sahiptir. Daha eğitimli ve deneyimli çalışanların ekonomik verimliliği ve büyümeyi arttırdığı büyük ölçüde kabul edilmektedir. Bu yüzden becerileri, eğitim ve öğretim sistemini geliştirmeye yönelik çabalar mevcuttur. Beşeri sermaye bireylerin gelir dizeylerini yükselttiği için de bu alanda yatırımlar yapılmaktadır. Bu çalışmada, büyümede böylesine önemli bir kaynağın eğitim düzeyi, istihdam oranı, işsizlik oranı ve kazanç verileri yardımıyla G-7 ülkelerindeki kullanımı incelenmeye çalışılmıştır. Bu amaçla, G-7 ülkelerinin işgücü piyasası ele alınarak eğitim düzeyine göre alınan ücret ve işsizlik oranı karşılaştırılmıştır. Bu çalışma sonucunda, bu ülkelerde işsizliğin olduğu ve yüksek eğitim düzeyinde işsizlik oranının düşük, ücretlerin ise yüksek olduğu görülmüştür.*

Anahtar Kelimeler: *Beşeri Sermaye, Eğitim, Ekonomik Büyüme, G-7 Ülkeleri*

I. INTRODUCTION

The 21st century is based on knowledge and it is very different from the one that was in the 20th century. Economic and, social and, political facts in national and international dimensions are being designed according to knowledge of economy with different changes in many fields. In the concept of knowledge economy, people are the central resource of it, because this knowledge is created and applied by humans. Whereas the earliest postwar economy was emphasized accumulation of physical capital with labour cost employment and this science points out the contributions of human capital.

Training, schooling, medical care are considered as capital like machine. They usually raise income for everyone to contribute a person in different ways. Therefore, people invest in human capital. But, human capital is intangible in contrast of other capital forms. While people can be separated from physical capital, they can not be separated from their knowledge, skills, health, or values [1]. Therefore, there are some problems with the theory that originate in part of the concept in human capital itself. There are also problems with the conceptualization and measurement of the benefits and costs of investment in human capital [2].

Human capital is a useful concept for quantitative analyses and policy makers for the economist's interest. There is widespread acceptance that better education and trained workers increase productivity and growth rate. Education and training are the most important elements for today's world economy and the modern forms of technology that have raised international competition. In this process, there is a huge struggle to improve the education and training systems, and human skills. Recent researches have shown that there is a relationship between the investments in human capital and economic performance. The link between education and wages is also one of the empirical findings of phenomenon.

The aim of this research is to present how efficiently existing human capital is used in G-7 countries. This paper is also using the labour market data to measure how human capital is being used. This paper focuses on the possible impact of education and training skills on worker's employability, and wages.

II. THE CONCEPT OF HUMAN CAPITAL

Labour has always been an important factor in production. Before 1960, the attention was paid mostly to the quantity of labour. Then, the tendency changed. In this way, the quality of labours, their education and training levels in the workforce have become the first rate of importance. This made a tremendous rise in the concept of human capital including skills and other attributes of individuals.

Human capital is described in different ways; "*human capital refers to the acquired skills, knowledge, and abilities of human beings*" [3]. This concept shows that such skills and knowledge increase human productivity and acquiring them to incur a cost. Therefore, the expenditures on improving human skills, knowledge and abilities can be thought of as investment. Mincer (1984) mentioned that the dual roles of human capital as a stock of skills produced by education and training and as a stock of knowledge that is a source of innovation in economy [4].

According to the definition of OECD report, "*human capital is the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being*" [5].

The treatment of the concept of human capital since the mid 1950s could lead to one to believe that the subject is new in economics (Kiker dispels this erroneous and reviews the concept and role of human capital formation in the history of economic thought) [6]. But, human capital is not a new subject. In recent years, there have been important advances in economic thinking and in developing and quantifying the concept of human capital and in investing it [7]. These investments include education, whether academic skills or on the job training, immigration and medical care programs [8].

Well-known economists who considered human beings or their skills as capital are Petty, Smith, Say, Senior, List, Von Thunen, Roscher, Bugehot, Ernst, Engel, Sidgwick, Walras and Fisher. Some of them tried to estimate the value of human capital, using the kinds of methods and the cost of production and the capitalized-earnings procedures; others have included human beings in their definition of capital. Kiker (1971) noted that most of those economists have held that human beings in economy should be included in the concept of capital, because of its real cost and its effects on increasing to the national wealth resources.

The latter groups, English classical school economists were interested in the distribution of income and the theories of production. In this concept, we do not distinguish between the person and his skills [7]. Adam Smith pointed out in his classic treatise and economic thought largely ignored his insight. Economists focused instead on the role of land, capital stock, and labour hours as the crucial ingredients of economic growth. People were considered part of the production process in economy. Their numbers were important not their skills and knowledge. Their quantity, rather than the quality of human input was the focus of concern; knowledge and skills tended to be treated as a form of consumption; as an output of the production process [3]. As a human capital theorist Theodore W. Schultz notes that "*to treat human beings as wealth that can be augmented by investment runs counter to deeply held values. It seems to reduce men once again to a mere material component, to something akin to property*" [8]. Walsh and then T. Schultz and Gary Becker and others proved the economic importance of higher education. But, Kiker points out that, the human capital concept wasn't fully explored by these economists, therefore, they didn't calculate rates of return on investments in human being [7].

III. MEASURING HUMAN CAPITAL

Human capital needs quantitative analyzes, therefore, the main problem is to measure it. At first, the cost of production method and the capitalized earnings procedures method were used to estimate the value of human beings. Farr's capitalized-earnings approach is the one followed today for evaluating human beings. The approaches of Farr (1853) [9] and later Louis Dublin and Alfred Lotka (1930) [10] should be started as points for everyone's interest in determining human capital values or their components. In this approach, a young man, ceteris paribus is expected to be productive over a longer period than an older one, therefore, his capital value would be greater in this process [6].

The value of human capital in OECD can be measured by comparing the completed years and levels of schooling and on the return of higher earnings of those individuals [11]. Although this method is simple, it doesn't reflect human capital obtained through informal training or through experience and various educational credentials can be difficult to compare [5].

There are alternative approaches that address this problem by comparing literacy levels in the adult population [12]. The OECD and Statistics of Canada have co-operated in an International Adult Literacy Survey (IALS) to measure some aspects of skill and competence and are subjected to survey and test limitations. The other alternative approach is to use questionnaire tests of student achievement or adult skills, such as the Program for International Student Assessment (PISA) [5].

The best evidence by examining human capital stocks, investments and returns exists now.

Human capital stocks approach: The level of skills, knowledge and competences held at any time by individuals can be taken to represent the stock of human capital. It is hard to measure the stock of human capital, because of the human attributes that can not be easily quantified. But three ways have been considered to measure human capital stock [11].

1. Highest level of education completed by each adult

2. To perform direct tests on adults to determine whether they have certain attributes relevant to economic activity

3. To observe the differences in adult's earning.

Investment in human capital: This is important for people in every stage of their lives. The quantity of human capital investment can be measured through two resources; money and time. It is difficult to measure all kinds of the forms in human capital investments. Public and private spending on formal education, spending by enterprises on-job-related training programs, some less formal work-based learning are the possible measures. Families devote resources to children that are also important in determining learning patterns, but it is impossible to calculate the overall spending on children's that are human capital investment [11].

Returns to investment in human capital: An evaluation of the efficiency of investment in education requires measurement of the return that it yields. Returns to investment "*is defined broadly as the increase in earnings for every year that was spent in schoo*l" [13]. Human capital investment confers economic and non-economic benefits on individuals, enterprises and societies. The governments and others that invest in human capital want to know which forms of investments can confer the best benefits to them. This calculation needs to take account of postponement of return.

In this way, investment costs and benefits take into account to calculate the rates of return. These rates are based on individual returns to public and private investments and relate only to investment in initial education [11].

IV. HUMAN CAPITAL MARKET IN G-7 COUNTRIES

IV.1. Labour Force, Employment and Unemployment

Unemployment as a percentage of labour force has been an average of 6.3 per cent in G-7 countries (Table.1) [14-17]. Inadequate budgetary consolidation and structural rigidities have left countries in a weak position in the early 1990s. Labour market policies have also been unsuccessful and unemployment has increased and employment has decreased between 1991 and 1994. It is shown in Table 1, Italy, France and Canada have high unemployment rate compared to other G-7 countries. Italy had the highest unemployment rate until 2001. Then, France, the unemployment rate has been high with the exceptions of 1989-90 and 91 until 2000. Canada, Germany and the United Kingdom have a flexible and high unemployment rate in some years. The unemployment rate in all G-7 countries except in Japan has fallen after 1999. Japan always had the lowest unemployment rate until 1999 and then has approached the unemployment rate of the United Kingdom and the United States. The United States has the most stable unemployment rate of all.

As it is shown in Figure.1, there is a low unemployment rate depending on the gap between labour force and employment that points out waste in the use of labour force in G-7 countries. During the economic slowdown in the world economy and G-7 countries, employment has fallen in 1991-1994.

IV.2. Education, Employment and Unemployment

Education and training are important investments that foster human capital. These investments include formal education, learning and training outside of schools, especially on job markets [18]. Workers are generally subjected to formal and informal training programs by employers to get experience at work. But, most analyses focus on initial education, while little attention has been devoted to the contribution of adult learning as a source of human capital [19].

As seen in Table.2 [20], years of schooling and tertiary educational attainment are high in the United States and Canada. The lowest years of schooling, tertiary and secondary educational attainment is in Italy.

Globalization and new technological and organizational advances have caused change in labour market. Mincer (1989) [4] suggests that technological change produces market demand for human capital. The supply and demand for higher literacy skills have become important for the knowledge world. Skills and knowledge affect the performance of an individual in the labour force and change the structure of the labour force of a country. Thus, higher labour force participation rates, lower unemployment rates and higher skilled employment are constituted in the labour market.

Table. 1. Unemployment Rates: Commonly Used Definitions

Percent of Labour Force								
Years	G-7	Canada	France	Germany(1)	Italy(2)	Japan	UK	US(3)
1999								
Unemployment								
(Thousands)		1.188	2.834	3.333	2.669	3.174	1.752	5.881
1975-84 (4)	6.1	8.7	6.4	4.8	8.2	2.2	6.4	7.7
1985	7.3	10.5	10.2	8.0	10.3	2.6	10.9	7.2
1986	7.3	9.5	10.4	7.6	11.1	2.8	11.1	7.0
1987	6.9	8.8	10.5	7.6	12.0	2.8	10.0	6.2
1988	6.3	7.8	10.0	7.6	12.0	2.5	8.1	5.5
1989	5.9	7.5	9.4	6.8	12.0	2.3	6.2	5.3
1990	5.8	8.1	8.9	6.2	11.0	2.1	5.8	5.6
1991	6.5	10.4	9.4	5.5	10.9	2.1	8.0	6.9
1992	7.2	11.3	10.3	7.7	10.7	2.2	9.7	7.5
1993	7.3	11.2	11.6	8.8	10.2	2.5	10.3	6.9
1994	7.2	10.4	12.3	9.6	11.3	2.9	9.3	6.1
1995	6.9	9.5	11.6	9.4	12.0	3.1	8.2	5.6
1996	6.9	9.7	12.4	10.3	12.1	3.3	7.5	5.4
1997	6.7	9.2	12.6	11.3	12.2	3.4	5.8	5.1
1998	6.7	8.7	12.3	11.2	11.9	3.2	5.0	5.3
1999	6.1	7.6	11.2	8.2	11.4	4.7	6.0	4.2
2000	5.7	6.8	9.5	7.8	10.6	4.7	5.5	4.0
2001	6.0	7.2	8.6	7.8	9.5	5.0	5.1	4.8
2002*	6.6	7.6	9.0	8.3	9.3	5.5	5.2	5.9
2003*	6.7	6.7	8.9	8.3	8.9	5.6	5.3	6.3

Source: IMF. World Economic Outlook. May 1993 [14]; October 1997 [15]; October 2001 [16]; September 2002 [17].

*Projections

(1) Data through 1991 apply to West Germany only.

(2) New series starting in 1993, reflecting revisions in the labour force surveys and the definition of unemployment to bring data in line with those of other advanced economies.

(3) The projection for unemployment has been adjusted to reflect the new survey techniques adopted by the US Bureau of Labour Statistics in January.

(4) Arithmetic average for unemployment rate

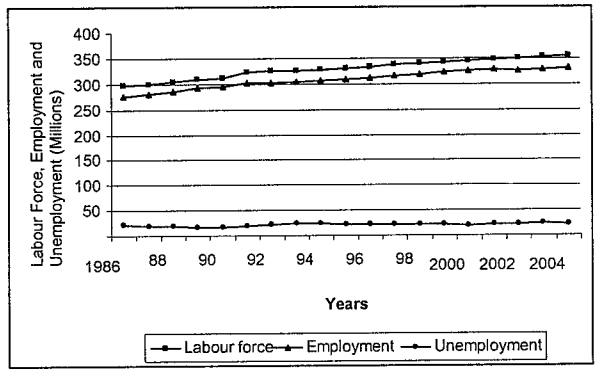

Figure.1. Labour Force, Employment and Unemployment

Data is acquired from IMF. World Economic Outlook. May 1993 [14]; October 1997 [15]; October 2001 [16]; September 2002 [17].

Education level influences positively employment/ population ratios and high skilled position of individuals. Education reduces the probability of being unemployed. The impact of educated and skilled individuals differs according to the level of educational attainment of individuals. The impact of tertiary education to improve the skills, knowledge and capacity is much higher for workers than secondary education. In Table.3 [21], low education levels are associated with a higher unemployment; unemployment rates clearly decrease when the education levels increase in all G-7 countries. Labour force participation rates and employment/ population ratios are low in less than upper secondary education and are high in secondary and tertiary education. The highest level of these rates and ratios is in tertiary education.

Table. 2. Barro-Lee and OECD Data on Educational Attainment

	Barro-Lee Data						OECD Data			
Country	No Schoo	Primary	Partial Secondary	Complete Secondary	Tertiary	Years of Schoo	Below Upper Secondary	Upper Secondary	Tertiary	Years of School
Canada	2	14	31	24	30	10.7	25	28	47	13.2
France	1	48	24	13	15	7.7	32	50	19	11.2
Germany	5	51	16	13	15	7.7	16	61	23	13.4
Italy	14	43	20	12	12	6.6	65	27	8	10.0
Japan	0	31	30	17	22	9.4	...	...	...	...
UK	3	41	27	13	16	9.0	24	54	21	12.1
USA	1	8	21	24	47	12.2	14	53	33	13.5

Source: Barro, R.J. (2003). Education and Economic Growth. (http://www.oecd.org/pdf/M00008000/M00008442.pdf). [30.01.2003] [20].

Table.3. Employment/ Population Ratios, Activity and Unemployment Rates by Educational Attainment in G-7 Countries, (2000)

Persons Aged 25-64 (percentages)

		Less than upper secondary education	Upper secondary education	Tertiary education
	Unemployment rates	9.9	5.8	3.8
Canada	Labour force participation rates	61.1	80.8	86.0
	Employment/ population ratios	55.0	76.1	82.7
	Unemployment rates	13.9	7.9	5.1
France	Labour force participation rates	66.2	82.2	87.5
	Employment/ population ratios	57.0	75.8	83.1
	Unemployment rates	13.7	7.8	4.0
Germany	Labour force participation rates	58.6	76.3	86.9
	Employment/ population ratios	50.6	70.4	83.4
	Unemployment rates	10.0	7.4	5.9
Italy	Labour force participation rates	53.2	76.6	86.5
	Employment/ population ratios	47.9	71.0	81.4
	Unemployment rates	6.0	4.7	3.5
Japan	Labour force participation rates	71.4	77.4	82.4
	Employment/ population ratios	67.1	73.8	79.5
United	Unemployment rates	8.9	4.5	2.1
Kingdom	Labour force participation rates	58.9	82.8	89.8
	Employment/ population ratios	53.7	79.1	87.8
United	Unemployment rates	7.9	3.6	1.8
States	Labour force participation rates	62.7	79.5	86.5
	Employment/ population ratios	57.8	76.7	85.0

Source: OECD, (2002). Employment Outlook 2002 Statistical Annex. Vol. I 2002. no. 76 6. (http://iris.sourceoecd.org/vl=3289868/cl=92/nw=1/rpsv/~6672/v2002n6/s9/p316). [30.01.2003)]. 316. [21].

Note: "The Table 3 shows the percentages of the population for whom the indicated level of schooling is the highest one attained. The Barro-Lee data, from Barro and Lee (1993, 1996, 2000), refer to the overall population aged 25 and over in 1995. The OECD data, from OECD (1997, 1998a, 1998b), are for persons aged 25-64 in 1997 or 1998 (and for 1996 for the developing countries). In the Barro-Lee data, the average years of schooling come from multiplying the percentages at the various levels by the country's typical duration of school at that level and then summing over the categories. (This computation also considers the breakdown between partial and complete primary schooling)".

IV.3. Foreigners, Education, Participation and Unemployment Rate

It is a fact that many skilled people in many developing countries have been attracted to the developed countries. There are also more economic refuges in the world than at any time since the Second World War. They are looking for jobs to sustain their lives [22]. However, foreign labour has not been a problem for host countries. In contrast, they have played an important role in the equilibrium of labour markets. Their needs have raised the demand for goods and services and entails expanded employment. Most of the researches have shown that foreign labour has been complementary in labour market rather than a substitute. The impact of foreigners on the labour market has always been positive for all categories of labour with the exception of earlier migrant in the United States and low-skilled groups in Europe [23]. Foreign labour also contributes to the long-term growth of countries. Its effects are on quantity of labour force and the quality in terms of human capital accumulation.

Table.4 [23] shows differences in the level of education between nationals and foreigners aged between 15 and 65, in 1999-2000. Foreign population in lower and upper secondary education is almost equal to nationals in Canada because of applying a selective policy on immigrants. In other countries of G-7, foreigners seem on average to have lower levels of education than nationals with the exception of Italy. The education gap between nationals and foreigners is smaller in the third level of education. Foreign population in the third level of education is higher in Canada, Italy and the United Kingdom than nationals.

Migration in the past was, largely made up of low skilled labour employed in the manufacturing sector. Even the recent immigration flow has been broken down by skilled level, also trend increase in migrant's levels of education in some countries has been lowered too [23].

Table.4. Foreign and National Adult Populations Classified by Level of Education in G-7 Countries[1] (1999-2000 Average, Percentages)

	Lower Secondary		Upper Secondary		Third Level	
	Foreigners	Nationals	Foreigners	Nationals	Foreigners	Nationals
Canada[2]	22.2	23.1	54.9	60.3	22.9	16.6
France	66.4	36.2	19.7	42.0	13.9	21.8
Germany	49.4	16.5	33.4	59.3	15.2	24.2
Italy	49.8	55.8	37.2	34.6	13.0	9.5
UK	30.3	19.4	30.5	53.3	39.3	27.3
US[3]	35.0	15.7	24.1	35.0	40.9	49.3

(1) The educational attainment classification is defined as follows: lower secondary refers to pre-primary or lower secondary; upper secondary refers to upper secondary education or post-secondary non tertiary education; third level refers to tertiary education. Data refers to individuals aged 25 to 64.
(2) Foreign-born and native populations aged 25 to 44. Lower secondary refers to below grade 9, upper secondary refers to grades 9 to 13 and third level refers to some post-secondary education plus university degrees.
(3) Foreign –born and native populations aged 25 and over. Lower secondary refers to less than high school diploma, upper secondary refers to high school diploma and third level refers to some college or more.

Source: OECD. (2001). Trends in International Migration: Continuous Reporting System on Migration. Annual Report. (http://www.oecd.org). [20.03.2003]. 42. [23]

The participation rate of foreigners is varied by their gender. The participation rate of foreign women was lower than the men's and also the nationals' (Table.5). In Italy, the participation rate of foreigners is higher than the nationals.

For men, the participation rate of nationals is higher than foreigners with the exception of France and Italy. The gap between participation rates of nationals and foreigners is high in Canada, but is small in the other countries.

There are differences between the unemployment rates of foreigners and nationals in Table 5. Foreigners are affected by series of factors according to their national origins. The profile of the foreigners is important for their degree of employability. Demographic structure of foreign population, changes in economic performance, age, gender, nationality, education level, training and experience, mastery of the host countries, language and length of staying in the host country are important factors for the degree of employability [23]. Thus, unemployment rate of foreigners is always higher than nationals (Table.5). For men, it is lower than nationals in Canada and Italy, but the gap is smaller.

Table.5. Participation Rate and Unemployment Rate of Nationals and Foreigners in G-7 Countries, 1999-2000 Average

	Participation rate				Unemployment rate			
	Men		Women		Men		Women	
	Nationals	Foreigners	National	Foreigners	National	Foreigners	National	Foreigners
Canada (1996) (1)	73.8	6.4	60.2	52.9	10.3	9.9	9.5	11.6
France	75.6	76.4	63.5	48.5	8.7	19.7	12.5	25.7
Germany	80.1	77.9	64.8	49.9	7.3	14.9	8.4	13.2
Italy	74.8	89.0	46.3	52.1	8.6	5.3	15.5	16.9
UK	84.9	76.2	69.2	56.0	6.3	10.9	4.9	8.3
US (March 2001) (1)	73.4	79.6	61.6	53.7	4.4	4.5	4.2	5.5

(1) The data refer to the native and foreign-born populations.

Source: OECD. (2001). Trends in International Migration: Continuous Reporting System on Migration. Annual Report. (http://www.oecd.org). [20.03.2003]. 55. [23]

IV.4. Education and Earnings

Becker and Heckman point out that education level is an important determinant of earnings in most countries. But there are large differences among countries in their relationship between education and earnings. Countries differ in rewarding education in their labour markets and paying for skills and experience of people. In fact, many studies show that real earnings for high-skilled and highly educated workers have been increased while the real earnings for low skilled and less educated workers in labour market have been decreased [24]. Some researches have been made for G-7 countries: Hoquet (1998) [25] for the United Kingdom and France, Acemoglu and Pischke (1996)[26] for Germany, Pischke (2000) [27] for Germany, Blundell, Dearden and Meghir (1999) [28] for the United Kingdom, Booth et al. (1999) [29] for the United Kingdom, Cosh, Hughes and Weeks (2000) [30] for the United Kingdom, Dearden, Reed and Van Reenen (2000) [31] for the United Kingdom, Green, Ashton and Felstead (2001) [32] for the United Kingdom, Black and Lynch (1996) [33] for the United States. All these studies show that training is positively associated with earnings levels and labour productivity.

The labour market in G-7 countries has been characterized by increases in earnings inequality between the more skilled and less skilled workers. Skilled levels are defined in terms of education, experience, or job classification. Unemployment among the less skilled workers is high in this research. In the labour market, the demand for more skilled workers has increased in the course of spending time. The supply of less-skilled workers has also increased relatively to the more skilled level. The employment increases in more skilled workers has caused the high relative earnings even though their relative supply has increased [15]. But, the labour market earnings have increased because of the excessive demand in market.

Labour demand developments have been towards skilled workers. The industry in G-7 countries has changed towards more skill- intensive industry and low-skilled workers have been less important for the output of these industries. Otherwise, demand for skilled workers within industries has also been changed from unskilled workers towards skilled workers, and the relative earnings of more skilled workers have also risen, too.

Education provides workers both initial earnings advantage and wage premium that increases with time consuming in the labour market [34]. This increased wage inequality can be seen in Table.6 [35], which shows that earnings of upper-income workers grew sharply, while earnings of low-income workers fell relatively to those for G-7 countries, particularly high in the United States, France and the United Kingdom. This wage pattern is the same for both men and women schedule (Figure 2-3) [34].

In Figure.2 and 3, the inequality in wages is clearer for men in the United States, the United Kingdom and Japan than others. The wage of tertiary educated workers is higher than other educated levels for both men and women, with aged, than in the case of less educated workers in G-7 countries with the exception of Japan. In Japan, all educational groups reflect a decline in earnings towards the end of the working life. The women's earnings towards the end of their working lives are smaller than men.

The wage of lower secondary educated workers in France is different from other countries, with earning higher wage from upper secondary educated workers. In Germany and Italy, the gap between the wages of less educated and more educated workers is not too wide. In Canada, the wages of tertiary and upper secondary workers are closer indeed. Among women, the difference between wages depending on the education levels is not as high as for men, in Canada.

Table. 6. Relative Earnings of the Population with Income from Employment by Level of Educational Attainment and Gender for 25 to 64-Years-Old and 30 to 44-Years-Old (Upper Secondary and Post-Secondary Non-Tertiary Education = 100)

			Below upper secondary education		Tertiary-type B education		Tertiary-type A and advanced research programs		Tertiary education	
			25-64	30-44	25-64	30-44	25-64	30-6	25-64	30-44
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Canada	1999	M	79	78	116	117	159	159	137	137
		F	70	69	116	118	171	189	140	148
		M+F	79	79	112	113	162	167	135	138
France	1999	M	88	86	128	137	178	181	159	163
		F	79	81	131	139	158	165	145	152
		M+F	84	84	125	133	169	174	150	155
Germany	2000	M	80	87	112	110	162	160	141	139
		F	72	71	113	114	154	153	137	137
		M+F	75	78	115	114	163	160	143	141
Italy	1998	M	54	55	x(5)	x(6)	138	142	138	142
		F	61	56	x(5)	x(6)	115	114	115	114
		M+F	58	57	x(5)	x(6)	127	126	127	126
United Kingdom	2001	M	72	67	124	126	157	162	147	151
		F	70	74	142	133	206	216	183	183
		M+F	67	68	128	124	174	181	159	161
United States	2001	M	64	63	116	115	186	183	178	175
		F	62	61	117	119	171	173	164	166
		M+F	65	64	114	113	181	178	172	169

Note: x indicates that data are included in another column. The column reference is shown in brackets after "x". *e.g.*, x (2) means that data are included in column 2.

Source: OECD, (2002). Education at a Glance 2002- Tables. September 03, 2003. (http:www.oecd.org/dataoecd/8/41/1962701.xls). [30.01.2003]. [35]. See Annex 3 for national data sources (www.oecd.org/els/education/eag2002).

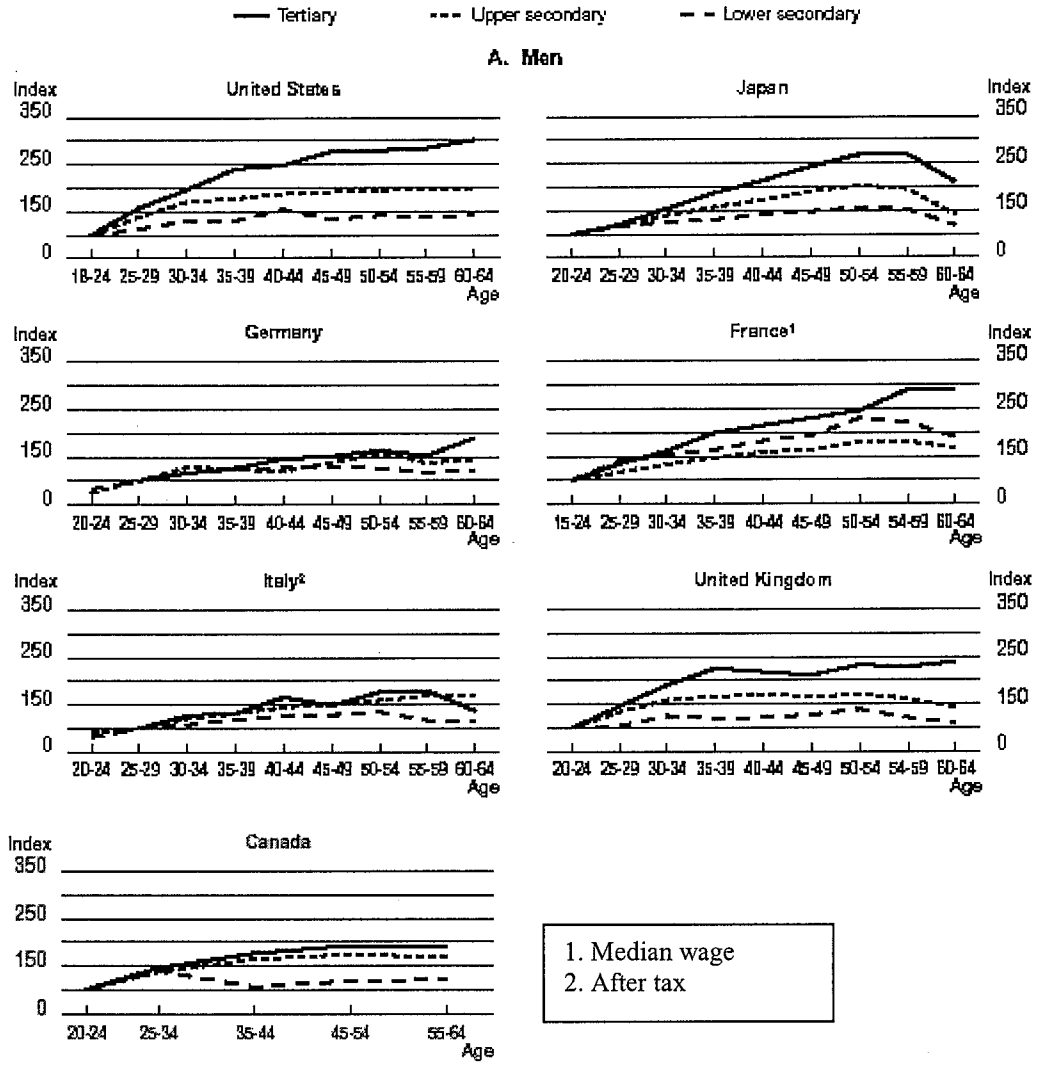

Figure.2. The Structure of Earnings by Age and Gender (For Men)

Source: Blöndal, S.; Field, S. & Girouard, N. (2002). Investment in Human Capital Through Upper Secondary And Tertiary Education. OECD Economic Studies, 34, (http://www.oecd.org/pdf/M00039000/M00039266pdf). [03.03.2003]. [34].

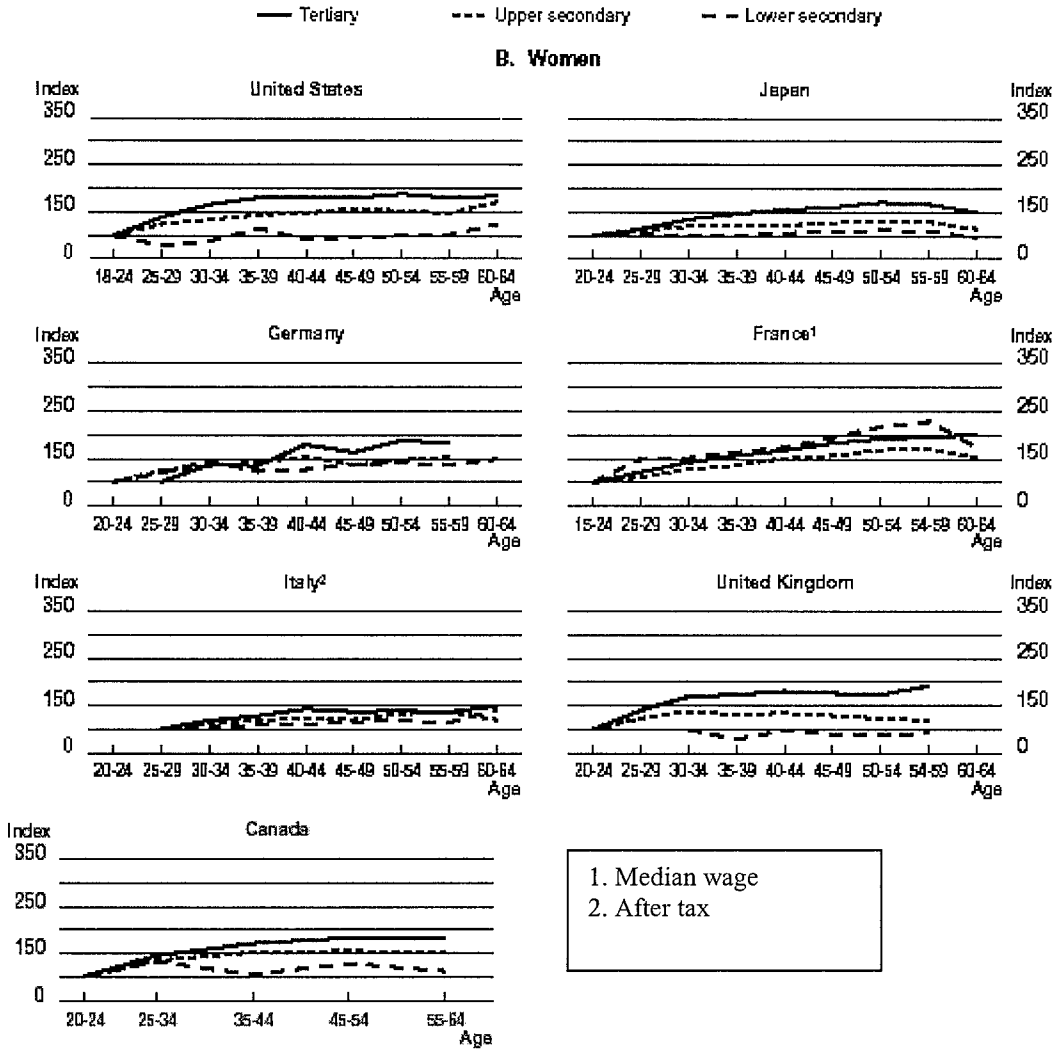

Figure.3. The Structure of Earnings by Age and Gender (For Women)

Source: Blöndal, S.; Field, S. & Girouard, N. (2002). Investment in Human Capital Through Upper Secondary And Tertiary Education. OECD Economic Studies, 34, (http://www.oecd.org/pdf/M00039000/M00039266pdf). [03.03.2003]. [34].

V. CONCLUSION

Human capital is central in the new economic environment. Knowledge integrated economy and advances in technology changed labour demand towards skilled workers. This requires policies, spending and especially appreciations to upgrade workers' skills. Skills and education affect positively the performance of labour force and change the structure of the labour force in many countries. Thus, higher labour force participation rate and higher skilled and educated employment participation rates of the labours have constituted the labour market in G-7 countries.

The impact of foreigners on the labour market has mostly been positive for all categories of labours. Foreign labours also contribute to the long-term growth of countries. Its effects are on quantity of labour force and the quality in terms of human capital accumulation.

Education levels and skills are also important determinants of earnings. But there are large differences between countries in rewarding education in their labour markets and paying for skills and experience. But, it is clear that real wages for high-skilled and highly educated workers have increased while the real wages for low skilled and less educated workers decreased in the labour market. The labour market in G-7 countries has been characterized by increases in wage inequality between the more skilled and less skilled workers. Unemployment rate among the less skilled workers is high in G-7 countries. The wage inequality and unemployment also require other policies to reduce these rates.

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Meriç S. ERTEKİN (msubasi@anadolu.edu.tr) has Ph.D. of Economics at Anadolu University Social Sciences Institute. She is Assistant Professor in Faculty of Economics and Administrative Sciences at Anadolu University. Her research areas are multinational companies, foreign direct investments, economic growth, and globalization.