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THE EFFECT OF TECHNOLOGICAL PRODUCTION AND USAGE OF HIGH-TECH GOODS TO THE WELFARE OF A COUNTRY: COMPARISON OF FINLAND AND TURKEY

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Abstract

After the industrial revolution there have been important transformations in every country and the economy of the world. However, some countries carried out rapid industrial development while others are still struggling with economic problems and trying to catch up with developed countries. This study is of a country like Turkey, faces numerous economic and social problems as it tries to catch up with its competitors and reach the level of a welfare society. The paper considers Turkey in relation to a country like Finland, one of the most competitive nations, with a hi-tech economy and a highly educated society. The aim is to carry out an international comparison of Turkey and Finland, to find out the importance, effect and change of welfare, especially social welfare, of using high technology goods and services both in a developed and developing country. To be able to show and compare two countries in different respects, the focus will be on some particular goods that are important evidence of an information society, such as usage of mobile phones, personal computers and access to the Internet. The reason of carrying out a comparative study and choosing Finland is the Finnish level of technological development, production and adaptation of high technology so that Finland can be placed as a model for Turkey. Also, Finland is known as one of the best welfare states and a good representative of "Nordic Welfare System".

Keywords: Welfare State, Information Society, Industrialization, International Comparison.

Introduction

Finland is one of the most competitive economies, environmental sustainability, and equal society, hi-tech in economy, best educated society and as a result of those an industrialized country. This fast development results being an information society and requires continuous technical improvement. On the other hand, as a developing country Turkey still struggle with some economic problems, lack of appropriate technology and innovation makes Turkey in a different level than Finland. The fast changes and improvements in Finland let scholars to study and try to understand what can be learned from its unique experience.

The aim is to find out the importance, effect and change of welfare especially social welfare of using high technological goods and services both in a developed and developing country. To be able to show and compare two countries in different respects, the focus is on some particular goods that are important evidences of the information society such as usage of mobile phone, computer, and internet. The reason of choosing Finland and compare it with Turkey comes from the level of technology, production and adaptation of high technology so that Finland can be placed as a model for Turkey. Therefore, we would like to introduce two countries different then each other in economic, social, cultural and historical point of views and focusing on country policies, politics, and also competitiveness of the society in a comparative context.

If Finland is one of the world's best functioning welfare states, there should be things learned from a unique welfare state for a developing country and we wanted to introduce it academically to Turkey. Comparison of two different countries will be basically on the ground of education, educational background and improving primary and higher education and training as it is the main motive of technological improvements. Secondly, the following subjects; technological improvements and innovations, transfer of technology, usage and the level of technology. We try to discuss the development of information society, model of national innovation system, policies of technical improvements and the success of the country both technical, economic and social context. The main object of the study is the importance and effect of education for the welfare society, setting an efficient system of education especially for the higher education and how Finland succeeded it.

In this paper, the subject is studied into two parts. In the first part, the literature is reviewed and in the second part the main subject is examined. The data is collected from international institutions such as OECD, European Commission, World Trade Organization as well as Statistics Finland and State Statistic Institute of Turkey. The study is based on qualitative research, comparing the countries by paying attention the

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numerical changes and annotating the data of different variables. By analyzing and comparing the data of both countries we aim to introduce the differences and the level of welfare state in both countries. Out of the comparison with the help of the data for both countries we aim to draw a conclusion and try to understand the development steps and the level of welfare state of Finland and Turkey.

1. The Frame of Welfare State

1.1. The Definition and Developing of Welfare State

The meaning of the welfare state is changed in terms of the narrow and comprehensive approaches. The meaning of the narrow welfare state is that social improvement can be carried out through income transfer and social services. State plays much effective role for the governance of the economy and politic-economy by comprehensive welfare state approaches (Esping, 1990). There is not only one definition of welfare state since every country's and region's cultures, traditions, backgrounds, income levels and implementations are different. Therefore, there are many opinions and ideas from different authors related to the meaning and the role of the welfare state.

The main discussion point in relation to the welfare state is certainly that there are causes which trigger interferences of the state to the economy in today's changing conditions (Koray, 2003). Welfare state, in this sense, emerged in the Western Europe after 1950s. However, it was accepted responsibility of the state in which welfare state also wasn't a social security provider also societal equity and welfare during 1950s. In this wide responsibility, it is observed that different welfare models emerged in different countries since both changed the means and scale of state interventions to the economy. Therefore, while making the definition of welfare state, it would be appropriate to consider on different models emerged from different applications.

Esping-Anderson identified three distinctive welfare state regimes, representing different ways in a capitalist economy (Esping, 1990). The first type is the liberal welfare state regime, market-oriented in the distribution of resources and social protection benefits. Public provisions are typically modest, flat rate, and needs-means tested, producing a stigmatized and residual group of beneficiaries. The state encourages market solution by private welfare schemes. USA is the archetype in this category, as well as Canada and Australia while UK is moving in this direction. The second type is the conservative welfare state regime, rooted in corporatism and Catholic social policy, is identified by status-preserving intervention, supporting the market logic of distribution. Family and motherhood are supported, woman is encouraged to stay at home, and the one-breadwinner family is supported by benefits and taxation. Germany, France, Italy, Belgium and Austria belong to this category. The third type is the social-democratic welfare state regime, where social policy is encompassing, with high standards of material living conditions guaranteed, high levels of transfers as well as subsidized public service; hence also high levels of tax rates. Sweden is an important model in this category as well as Finland, Denmark and Norway.

Industrialization, democratization, class fighting and human rights, in 19th and 20th century, are the main reasons which affected the process of welfare state. There is no doubt that welfare state is not only concerned the problems of industrialization and capitalization but also democratization issues (Koray, 2003). It is accepted that workers' struggles to balance societal and political life were a striking factor for welfare state and its institutions as well as democratization. This process is separated into 4 different eras (Ozdemir, 2004). First era is paternalist, before 1880, problems are resolved by families, NGOs and responsible employers. Second era is called social insurance, between 1880 and 1945; workers are protected under insurance regulated by state institutions. Third one is welfare era, between 1945 and 1975, aimed to increase life standards, provide consistently income and more institutional regulations as well as social insurance. The last one, post-1975, is called reconstruction era in crises.

The origins of welfare state can be dated back to the late 1800s, but social expenditure grew initially very slow. This is understandable, in most cases, since population coverage was incomplete and entitlements were modest. The concept of the welfare state, indeed, emerged only in the post-war decades. By 1960, the median level of social outlays in the affluent democracies had risen to 10 percent of GDP. The real take-off occurred in the 1970s, following a major social reform wave in terms of benefit generosity and population inclusion. By 1990, the median level of social expenditures had risen to 24 percent of GDP, but this hides substantial dispersion, ranging from 15 percent in the US to more than 30 percent in Scandinavia (Esping; Myles 2000).

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1.2. The Role of Welfare State

Welfare state is an effectively organized public power through policies and governance to orient market actors in the three different ways. First of them, the minimum level income is guaranteed for the individuals and families without regarding their assets' current market values. Second of them, individuals and families are provided to overcome certain current risks and to reduce spreading of insecurity which causes some problems for the individuals and families if they can not overcome those risks like illness, old age and unemployment. The last one is to provide the best existing standards for all of citizens, regardless of their status and classes, in terms of social services generally accepted (Fallis, 2008). On the one hand, those definitions are very important in point of regulatory welfare state in the capitalist market economy. On the other hand, all of them guarantee the best standards of some of the social services and poverty and insecurity are removed or decreased by the regulatory state interventions.

In this sense, countries both should act regulations in line with developed standards and take into consideration today's competitive needs and challenges such as globalization, technological developments and population ageing. Welfare countries are going to work both against challenges and for their societies' welfare. In defining the welfare policy priorities for Finland's EU Presidency as of 1 July 2006, Finnish Minister of Social Affairs and Health Tuula Haatainen and Minister of Health and Social Services Liisa Hysala said that the changes emerged by globalization, technological advancement and population ageing are among the most important challenges facing the European Union today. Thus, to be able to meet these challenges, Finland's aim during its EU Presidency is to identify means to further develop working life and redirect health and social policies. The ministers further stated that, with accelerating globalization, it is necessary to change employment, health and social policies in ways that support social change as effectively as possible (Elina, 2006).

1.3. The Role of Universities on Welfare Society

Education is very important for today's people and becomes a core public commitment for social citizenship, since full membership in society requires equality of opportunity that can be provided with education. Furthermore, civil and political rights are designed for intelligent persons. Therefore education is an important prerequisite to gain and use welfare services. Education is so necessary that primary and secondary education should be not only compulsory also free. Although universities are not compulsory, they are becoming increasingly important to welfare societies, so that university education is a necessary component for that reason. One of the major commitments of the welfare state is the provision of higher education possibilities (Fallis, 2005).

The universities have democratic role which goes beyond of higher education. Each component of the universities, from undergraduate education to graduate education and research institutions, has a crucial role in democracy of post-industrial and welfare society (Fallis, 2005). The university shares the responsibility to train professionals for the attentiveness, on behalf of benefits of welfare society and to support welfare state and democracy. In knowledge-based post-industrial and welfare society, political choices require assessment of complex questions to support welfare states needs. The university can contribute in scientific fields such as social scientific and humanistic knowledge, cooperating state and private institutions, to generate new ideas which influence today's welfare and knowledge society.

The relations between welfare state and universities are different than other countries in terms of funds. Especially, research universities in the United States include private universities and those supported by state and local governments. The governments see that investment in higher education as a tool for economic, social and cultural development in welfare state. The universities can benefit from welfare states' funds to improve conditions for the students and research potentials. Especially Nordic Countries are supporting their university system to be used financial support by the students (Laanien, 2005). Free education and funds to the universities not only increased total number of higher education enrolments but also decreased inequalities between poor and rich regions in terms of reaching opportunities. Encouragement must work for students and faculty members to get competition. In the American system, federal grants are awarded to individual faculty members within universities rather than to the universities themselves. The competition among faculty members for research funding is an important factor in fostering the quality of university research (Atkinson, 2006).

There must be an individual demand as well as the political will to allocate money. Both are related to the assumptions of high labor market demand and that education is important for economic and social

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development. Individual demand is easy to understand at least as long as private economic return from higher education is high, or at least positive. This is the case in most countries, and is less negatively affected by the strong expansion in higher education than could have been expected. The risk of unemployment is also considerably lower among graduates than those who have lower levels of education (Aamodt, 2008).

1.4. The Effect of the Changing Nature of the Industry on Welfare State

After World War II, development and institutionalization of the welfare state had started to be improved and this process continued until 1975s. Since 1975 globalization and its competitive nature has been affecting welfare state institutions. Globalization has been affecting the foundations of the welfare state for two decades. The interaction of the globalization and the welfare state have been bringing about some problems related to welfare process issues which have not been prevented and more deepened during economic development. With the globalization and economic integration, the world economy is producing a general tendency towards down-sizing of the expenses of the welfare state (Castles, 2001). In this sense, there are some efforts to restrict the role of the welfare state based on both central planned and market oriented economies. Therefore, it is seemed gradually regulations towards minimum protections in the social security policies in the industrialized countries. It is aimed that state must act rules, put some standards, prevent based on speculative economy, and encourage to produce high-tech products and to improve productivity.

In order to reap the benefits of welfare state, deep projections must be done in the industry and low-growth or emerging sectors must be supported to compete with others. However, the economic case for limiting investment in low-growth sectors is obvious; countries, like companies, should try to redeploy their resources where the prospects are brighter. How well the market works depends on the strategy and structure of individual companies. Single business companies in low-growth industries will continue to invest despite low returns because they know only one product or industry. Diversified companies can invest in higher-growth sectors within the organization (Scott, 1982).

To be able to direct today's economic strategy in the world, it needs to be constructed a way of thinking that will increase and foster this mobility. This process will help to postulate that countries, like companies, have portfolios of businesses or industries. They can influence not only the mix in the portfolio at any time but also the rate of new business development, the redeployment of human and capital resources to growth sectors, and the withdrawal of those same resources from declining sectors. Consequently, welfare states should be supported by the dynamic industrial strategies and active labor market policies (Scott, 1982).

1.5. The Effect of the Non Government Organizations on Welfare State

Governments have tried to meet people's demands abandoned by the market sector by building a welfare state. However, features such as bureaucracy, lack of flexibility and inefficiency in decision making set limits on satisfying various demands (Kim, 2004). As an important actor of welfare services, European Union developed member states are now examining existing welfare policies to ascertain whether more appropriate and up-to-date programs, organization and provision of welfare can be designed. Uncertainty about the effects of existing welfare-policy measures and the perceived need to reform or restructure the Western European welfare states, have prompted the belief that alternative welfare-policy strategies are needed (Esping, 1990).

In addition to all burdens on welfare state, the first world wide recession took place, in 1973, due to rising oil prices and then unemployment rates had risen throughout the west world as well as developing and underdeveloped countries. This recession made it difficult for governments to go on with welfare services so that they took into consider to be cut down their expenses. After all these crisis on welfare, governments gradually had begun to change their role for the welfare services by forming and encouraging private and voluntarily organizations called Non Governmental Organizations (NGOs).

EU and national governments are now experimenting with supplementary and alternative welfare-policy strategies to design more sustainable plan and programs for social protection. One area of focus is the possibility of mobilizing new actors, encouraging alternative welfare producers and finding innovative measures. This means particularly the possibility of strengthening the involvement of NGOs (Halyerson, 2004).

It is possible to say that NGOs are an important factor as a complementary actor and they play a bridging role between government and people. Given the fact that NGOs and government may share the

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same objective of welfare of their people, and that NGOs are increasingly expected to act like market agencies with high standards of accountability and effectiveness, this is perhaps the most distinctive feature of NGOs (Kim, 2004).

1.6. The Impact of High Technology on Welfare State

Technology can not solve social problems itself. However, the existence and the use of ICT are very important not only for economic development but also social improvements in the world. The ICT look like electricity as it was in the industrial era. Studies show the close statistical relationship between diffusion of information technology, productivity and competitiveness for countries, regions, industries and firms. They also show that an adequate level of education in general and of technical education in particular, is essential for the design and productive use of new technologies (Castells, 1999).

It is seen that the world economy undergoing two major structural changes during the last decades. Firstly, increased globalization of the world economy, and secondly, a strongly increased role of (technological) knowledge, mostly in the form of ICTs. The importance of these trends is increasing in developed European countries and in the developed world since 1950s. However, while Europe, Japan and other countries started to catch up in many typical 'American way of life' products, US industry leaped forward in another area, that of science-based industry, in part due to massive public investments in R&D during the Second World War and the cold war that followed. Thus, while Europe was trying to complete its catching-up process, another institutional and technological change was set in motion in the US economy. With hindsight, one may indeed say that this trend towards increased science-based growth was the beginning of the knowledge economy (European Commission, 1999).

Technology has been an important factor such as integral part of job creation and a central concern behind the high unemployment rates in Europe. There are lots of contradictory ideas that whether technology in general, information and communications technologies in particular, can increase employment opportunities and encourage economic activities or not. As a consequence of the economic paradigm shift, and in parallel to technological changes in the post-Fordist economy, major repercussions have affected welfare states in Europe. For instance, long-term employment has diminished dramatically, a process which has usually translated into job insecurity for large group employees. With the extension of the criteria for 'open' market competition stimulated by economic globalization, subsequent de-regulation and market flexibility have allowed for the emergence of new social risks. While new technologies are emerging into markets, obsolete jobs and market are going to be disappeared. On the one side, the rapid introduction of new technologies, spurred by Europe's own integration process and the broader globalization process, has often been singled out as one of the main factors behind widespread job losses in individual industries or among workers with particular skills in many European countries. They are also held responsible for increased wage and income disparities and work insecurity. On the other side, politicians, at both national and European level, businessmen and many technology experts and economists continue to have great expectations with respect to the long-term growth and employment creation potential of new technologies, particularly ICTs (European Commission, 1999).

If costs were the only factor, one would expect that economies with the most intensive redistribution via welfare would be lagging in terms of macroeconomic performance. In fact, countries with welfare benefits are not necessarily at the forefront of technological innovation, on the contrary, most of the small open economies with extensive welfare, such as Denmark, Finland and Sweden, have managed relatively well during the last decade, with total factor productivity increases rivaling the much admired American "New Economy" and an excellent record in terms of technological advances and the insertion into the ICT revolution. Recent research on why growth rates differed so widely during the 1990s has shown that these European economies are already benefiting from the virtuous circle typical of a Knowledge Based Economy (Robert, 2002).

Information and communication technologies have both benefits in the ICT sector and also in other sectors. ICT technologies produce new opportunities and externalities not only for other sectors and but also for broader society. In order to reap the broadest benefits, ICT sector, entrepreneurs and workers should be encouraged and integrated with other sectors. A particularly important type of externality involves investment in training labor and management. Investment in this training is beneficial for the entrepreneur but it has much wider social benefits because skilled labor and middle management can migrate from the firm to other firms or set up new businesses (Khan, 2007).

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Dynamic transformation in the New Economy along with the importance of investment in ICT needs much flexibility in business entry and exit, changes in job tenure and nature, and constant skill upgrading. These issues have important implications for the scope and method of government expenditures and rules for unemployment and pension benefits, on the one hand, and education and training, on the other (Mann, 2001).

However, these aspects of the New Economy can cause problems for the archetypal welfare state. First, transformation in activities means, at least for some time, volatility in employment and businesses, and differential returns to skills, among other things. To the extent that the archetypal welfare state makes these changes easier, either the transformations may not occur or the cost of smoothing them out could be quite high in terms of income support. Second, information is a key ingredient to the transformations and the creation of heterogeneous product bundles. To the extent that the archetypal Welfare State mandates a uniform approach to the use of information, taking the view that it knows best what its constituents want, the heterogeneity in interests will not emerge to inform the marketplace (Mann, 2001).

2. Comparison of Finland and Turkey

2.1. The Technological Development with the Historical Point of View

Finland is known as one of the best welfare states and a good representative of "Nordic Welfare System" but still different then the other Nordic countries such as Sweden, Norway and Denmark. While other Nordic countries have been existed over centuries as kingdom, Finland is an independence country only after the First World War. Before it was part of the Kingdom of Sweden and Russian Empire as an autonomous Grand Duchy and then got the political independence and formed as a nation state. Finland managed to preserve its uninterrupted democracy since the beginning and in that sense it is one of the leading countries in the world. On the other hand, Turkey was formed after the collapse of Ottoman Empire about the same time after the independence war in 1920s. In the very beginning both Finland and Turkey were agricultural societies, Finland took off in a very fast way and catched up with the developed countries and now is a welfare state while Turkey's adventure and take off period was later and longer in terms of economic development and still struggling with some problems and in the process of information society.

2.2. Background and Standard of Education

Setting an efficient education system enables countries knowledge based economy and allows further specialization, productivity and capital is the only asset that can grow without limits and new knowledge increases the efficient use of resources that are in finite supply (Dahlman *et al.*, 2007). Education is the key element of a knowledge and innovation-driven economy. It affects both the supply and demand for innovation. Human capital and skilled labor complement technological advances. New technologies cannot be adopted in production without a sufficient education trained workforce.

Finnish and Swedish are the official languages in Finland and although only the 6% of the population speaks Swedish it is considered as the second official language. On the other hand, Sami is the spoken language in Lapland by some thousands of Sami people. The level of literacy is 100%.

Finnish social system is a unique system in very many senses comparing the other countries and Turkey. Education is state funded, medical care is free, life expectancy is higher, and benefits for unemployed citizens are better than Turkey. However, the uniqueness of Finland and Finnish society depends on its own circumstances. The total population of Finland is, three times fewer than the total population of Istanbul, not capital but the most crowded and well-known city of Turkey, 5.2 million. The country is homogeneous in many senses; religion, ethnic background etc.

Finland managed to reach to the welfare state and is one of the leading information societies on the basis of education system which involves technical schools, polytechnics, research institutions, academy of technology, national technology agency, technical research center and universities. As a result of the advanced education system Finnish workforce is highly educated and capable of structuring information and technological infrastructure. Intensive technological development led Finland to be developed in biotechnology that there are several options for scholars in this field.

Comparing with Finland basic education performance of Turkey is lag behind of the international standards and EU member countries. Although a great majority of children with 89% receive primary school education, Turkish students spend fewer years in school then the students in EU countries (World Economic Forum, 2006).

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Apart from the setting the standards on education, share of research and development (R&D) expenditure in GDP is important for the development of ICT sector. In Finland the share has increased over years and when it was 2.04 in the year 1991, it reached 3.50 in ten years and the share in Turkey for the same period changed from 0.54 to 0,64. Therefore, Finland is one of the top countries in technological innovation (Statistics Finland, 2008).

Table 1. Comparing Finland and Turkey

	Countries	
	Finland	**Turkey**
Population (million)	5.3	71.5
Percentage of the Level of Literacy	100%	89%
Percentage of GDP, Share of R&D (2006)	3.50%	0.64%
Mean of Performance on the Science Scale (2006)	563	424
Percentage of GDP, Investment in Knowledge (2005)	16.5%	1.8%
Percentage of Home Computer with Internet Access	70% and over	10%
Telephone Access per 100 Inhabitants	168	89

Comparing the two countries in their education systems we see that there are many differences in equity, education and gender. Although secondary school education is compulsory both in Finland and Turkey, Finnish system is more efficient and encouraging for the further studies which is free. In Turkey on the contrary, the basic education is free for everyone but the tendency is towards to the private schools and inefficiency of the system is tried to be filled by the private sources. Increase in economic development supports higher education and requires more skilled workforce and qualified researchers. Comparing countries in OECD level, performance on the science scale, Finland is above but Turkey is below the OECD average that is 500. While Finland occupies the first place with a score of 563, Turkey has its score of 424. For the year 2006, as a percentage of GDP expenditure on R&D is 3.45% in Finland (The highest in OECD is Sweden with 3.82%) and Turkey is 0.79%. In investment in knowledge Finland is amongst the world countries such as USA, Germany, and Great Britain. Finland owns the highest researcher per thousand employed, it is 16.5% for Finland and 1.8% for Turkey as a percentage of GDP for the year 2005. Finland, Sweden, Japan, and New Zealand have the highest number of research workers per thousand persons employed. Rates are also high in the United States, Denmark and Norway. Among the OECD countries, research workers per thousand employees are the lowest in Mexico, Turkey and Italy (OECD, 2008).

2.3. High Technology Finland

Electronic equipments and especially mobile phone production has shown an outstanding growth in Finland as the demand for mobile phone increased. The increase in the demand led Finland to become a high-tech country, mainly led by Nokia, the world's leading telecommunication company. With the fast growing of Nokia and increase in R&D expenditures increased ICT industries and the country has experienced the rapid industrial development. Apart from Nokia, Linux of Linus Torvalds[1] is a world wide famous Finnish operating system and the biggest challenger to Microsoft. Since 1990's electronics and electrical products industry are the most successful export goods of the country. On the other hand, there are number of firms operating in the mobile and information technology sectors. As a result of all the development and technological policy let Finland to be a knowledge based society (OECD, 2008).

The table 2 above lists different countries from the different regions from Western Europe, Scandinavia, and Eastern Europe, showing the international statistics in using computer, internet, mobile phone, to be able to show the difference and compare the level of countries in terms of welfare state. Finland is amongst the most developed nation in the world and it has the information infrastructure upon which leading countries model their futures. In Finland 70% or more people have a home computer with internet access while Turkey is among the lowest ones with 10%. In telephone access and number of telecommunication access per 100 inhabitants Turkey, with Mexico, is lowest OECD country in the year 2005. The access path was 168 for Finland and 89 for Turkey (OECD, 2008).

[1] Linux is an operating system which was designed for personal computer users a free or very low-cost. It was developed by Linus Torvalds at the University of Helsinki.

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Table 2. Percentage of Households with access to a Home Computer, Internet and Telephone

Countries	Home Computer Access	Internet Access	Telephone Access per 100 inhabitants
Austria	66,8	52,3	152,2
Belgium	57,5	54	149,2
Czech Republic	39	29,3	147,5
Denmark	84,8	78,7	175
Finland	71,1	64,7	168,3
France	56,4	40,9	136,7
Germany	76,8	67,1	156,2
Greece	36,7	23,1	163,2
Hungary	49,5	32,3	128,3
Iceland	84,4	83	179,5
Ireland	58,5	50	148,5
Italy	47,6	40	175,1
Luxembourg	77,1	70,2	225,5
Mexico	20,5	10,1	65,5
Netherlands	80.0	80.3	161,5
New Zealand	71.6	64.5	153,2
Norway	75.3	68.8	165
Poland	45.3	35.9	107,3
Portugal	45.4	35.2	153,1
Slovak Republic	50.1	26.6	103,7
Spain	56.9	39.1	151,2
Sweden	82.5	77.4	177,5
Turkey	12.2[2]	7.7	89
United Kingdom	71.4	62.6	172,4

Source: OECD Factbook 2008: Economic, Environmental and Social Statistics, OECD 2008 at (http://oberon.sourceoecd.org/vl=937970/cl=11/nw=1/rpsv/factbook/)

Also in global competitiveness ranking Finland is one of the top in the list. While Finland is the second country after Switzerland in institution, infrastructure, macroeconomic stability, health, education and training, technological readiness and innovation, Turkey is 59th country in the list (World Economic Forum, 2008-2009).

Although a small size, Finland is a leader country in promoting information society among the European leaders. Finnish people have access to use computer and internet more often than most other European citizens. Also at work places internet usage is common. Public libraries offer free services including free internet access points. Young people can have access to internet easily and freely at schools, universities, public libraries. In Turkey on the contrary, the rate is above the OECD and EU average in computer usage and having access to internet. In the schools, universities and institutions access is limited or restricted. Therefore, there are private businesses that offer computer and internet services are called "Internet Café". In terms of electronic government, civil servants do not always have access to internet as much as Finnish workers have or lack of technological readiness brings some problems in Turkey. On the other hand in Finland, the rate is as higher as the rate in home access.

2.4. Comparison: Learning from Finland

Finland is a very interesting case for scholars who are interested in economic development and comparative study. Because Finland is called a country managed to turn the crisis of 1990s into an opportunity.

Finland was named the world's most technologically advanced and also the least corrupt country. "Finland is reckoned to be the least corrupt country in the world, according to the annual index of perceptions of corruption compiled by Transparency International, a Berlin-based organization that aims to fight corruption worldwide." (The Economist, 2002). According to the World Economic Forum (WEF) it is shown to have one of the two most competitive an innovative economies, the best environmental

[2] The data for Turkey is for the year 2005.

sustainability, one of the most equal society, healthcare, primary education, higher education and training, institutions and infrastructure (World Economic Forum, 2008-2009).

Reaching to the level of a welfare state started to be aim important concept in major European countries after the Second World War but as a developing country like Turkey industrialization and the capital accumulation was the major issue in the country and we cannot say that Turkey pursued policies towards welfare state but many towards to be a social state. And industrialization mainly took place in Turkey after 1980s.

Finland is an advanced country in the field of information society and moreover one of the world's most technologically developed country. The country is one of the global leaders in the frequency of internet hosts, mobile phones and personal computers as well. This is a common Nordic feature, concluding on the basis of data on Sweden, Denmark and Norway. International comparisons also show that Finland is one of the world's leading information societies in per capita terms. Main EU countries which are reflected as European leaders of information society are keen in promoting technical improvements as important elements of information society.

Finland's uniqueness can be explained partly by the Nordic welfare system but mostly the by the country's own phenomena that are focus on education in any level, public education which is free and towards efficiency and productivity that is a requirement of welfare society. Finland is not a very densely populated country but high level of education and investment in ICT especially benefiting from a crisis in 1990s and recovering in a very better situation helped the country to develop an information society.

Finland can be a model country for many developing countries including Turkey, for the technological improvement and innovation. Productivity is a very important phenomenon for the welfare society to be able to supply the financial requirement of welfare society. Therefore, with a better quality of infrastructure, better institutions, better human resources and young population, Turkey can catch up and improve the situation in terms of welfare state.

The importance of reaching to the welfare society, using and producing technology is closely related to the level and quality of education. Apart from Finland, Turkish educational system especially higher education and training needs to be more sophisticated compared with the EU standards. To be able to produce technology, first the country should be familiar with, absorbing and adopting the existing technology. For the ICT technologies high level education is required, Turkey is far from the EU standards in ICT adoption and although it has been fast in last years, rate of computer, internet and mobile phone usage still remains low.

The skill the labor force needs to be able to adapt a very fast changing technological environment education plays a crucial role especially in higher education and training. Therefore for the rapid technological adoption and later on innovation structural transformation is needed in Turkish education system for improving the human resources.

As a developing country Turkey is lack of technological infrastructure and mainly depended on technology producer countries. Therefore, the main emphasis should be put on setting a technology policy and working towards this aim. In that sense, effectiveness and efficiency in education is the key factor that the country needs to strength the system. By that way, citizens can be user and producer of technology. Also, higher education and the number of researcher should be increased for the national best interests.

Conclusion

The rapid change and fast growth has proven the significance of economic regime, innovative technologies, infrastructure and particularly education. Because citizens need sufficient supply of education to be able to use it on the national best interest in accelerating the growth and turn into welfare state. The study and comparison has shown that Finland achieved the transformation with the help of above mentioned factors. On the other hand, Turkey needs more firms, organizations, research institutions, and the cooperation of private firms and universities for being capable of creating technology.

Throughout the study we have seen that achieving the welfare state is closely related to the level of education, providing equal education opportunities for everyone and supply high level of education and increasing productivity, creating technology in return. The level of education is closely related to the level of production and efficiency of labor force and efficiency can be reached only by the highly educated labor force. Although resource intensive sectors were dominant in Finland in 1990s, it experienced a very fast transformation and turned out to be one of the advanced information and communication society. Two

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countries compared above have shown similar features in the return of the century but then Finland has a radical change in education and it can easily be stated that Finnish style education transformation and modernization was the key to the achievement of the country.

Because Finland succeeded in combining the information society with the welfare state technologically, economically with social equality we consider on Finland as a model for Turkey and study both cases in international concept by comparing them and drawing some conclusion for Turkey to a better technological and economic construction to be able to reach to information society.

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