

FINNISH MODEL OF ECONOMIC DEVELOPMENT SINCE 1990s – LESSONS AND CHALLENGES

FINSKI MODEL GOSPODARSKOG RAZVOJA OD 1990-ih - POUKE I IZAZOVI

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Abstract: *Ever since the start of the industrialization period in the mid nineteenth century, Finland's economy was characterized by relatively unfavorable geostrategic location of the country, harsh climate, limitation of natural resources (except in the wood industry), the size of domestic market and significant restrictive influence of the state on economic flows, with a pronounced control of capital flows in international relations. In the early 1990s Finland's economy was overtaken by the strongest crisis since the period of the Second World War. It was partly caused by a downward growth trend of the world economy, accompanied by a loss of significant portion of Finland's export market in the former USSR and the crisis in the wood processing industry, and partly by the internal problems related to the financial sector and inflexible industrial relations which resulted with high interest rates and the inflation of expenses. By having a thoughtful and active approach to problem solving of basic developmental problems the creators of economic policy in Finland have succeeded in the past twenty years, by implementing structural reforms in the industry and by deregulation of financial sector and international trade, as well as implementing various measures to facilitate fiscal consolidation, in order to avoid even deeper structural crisis. They also managed to create conditions for achieving stable and high rates of economic growth, decrease unemployment, increase exports mainly due to the increased international competitiveness of export-oriented Finland's economy based on high technology which is mostly a product of domestic knowledge and export of goods with a high portion of added value, and in this way ultimately increase budget surplus and wellbeing of the population, which makes Finland one of the most desirable models for all countries in transition that are still trying to find their way to achieve economic growth and development. In this article those basic ingredients of the success of Finnish model are more closely examined.*

Keywords: *Finland, economic development, development strategy, transition*

Sadržaj: *Finsko gospodarstvo od početka industrijalizacije, sredinom devetnaestoga stoljeća, obilježeno je relativno nepovoljnim geostrateškim položajem zemlje, surovom klimom, ograničenošću prirodnih resursa (osim u drvnoj industriji), veličinom domaćeg tržišta i znatnim ograničavajućim utjecajem države na gospodarske tokove, uz izraženu kontrolu kapitalnih tokova u međunarodnim odnosima. Početkom devedesetih godina dvadesetog stoljeća finsko gospodarstvo zahvatila je najjača kriza u periodu poslije Drugog svjetskog rata. Dijelom je bila uzrokovana silaznim trendom rasta svjetskog gospodarstva i gubitkom za Finsku iznimno značajnog tržišta bivšeg SSSR-a, te krizom u drvoprerađivačkoj industriji, a dijelom unutrašnjim problemima vezanim uz financijski sektor i nefleksibilne industrijske odnose koji su rezultirali visokim kamatnim stopama i inflacijom troškova. Promišljenim i aktivnim pristupom rješavanja osnovnih razvojnih problema nosioci ekonomske politike u*

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Finskoj uspjeti su u posljednjih dvadesetak godina, provodeći strukturne reforme u industriji i deregulacijom financijskog sektora i međunarodne razmjene, te fiskalnom konsolidacijom, izbjeci dublju strukturnu krizu koja je industrijalizirane zemlje zahvatila desetak godina ranije, te stvoriti pretpostavke za postizanje stabilnih i visokih stopa gospodarskog rasta, smanjenje nezaposlenosti, pozitivan saldo u vanjskotrgovinskoj bilanci zahvaljujući rastućoj međunarodnoj konkurentnosti izvozno orijentiranog finskog gospodarstva utemeljenog na visokoj tehnologiji koja je najvećim dijelom produkt domaćeg znanja i izvoza dobra s visokim udjelom dodane vrijednosti, te na taj način u konačnici povećati proračunski suficit i blagostanje stanovništva, čime Finska postaje jedan od poželjnih uzora za sve tranzicijske zemlje ovih prostora koje još traže svoj put u moderan gospodarski rast. Stoga se u ovome radu detaljnije istražuju i propituju upravo ti, osnovni sastojci uspješnosti finskog modela gospodarskog razvoja, od devedesetih godina dvadesetog stoljeća do danas.

Ključne reči: Finska, gospodarski razvoj, razvojna strategija, tranzicija

INTRODUCTION

Throughout most of its history, Finland was rather economically undeveloped country which was dominated by territorially, militarily and economically larger and stronger neighbors, Russia and Sweden. However, by the end of the twentieth century the economic landscape of Finland with relatively low population (in relation to its surface) of around 5.2 million people has dramatically changed.³³ The World Economic Forum had recognized Finland already since 2001 as a world champion in competitiveness and economic development within framework of the concept of sustainable development, while IMD International Institution for Management Development had assessed Finland as the technologically most advanced country in the world. Finland, which shares with its Scandinavian neighbors many common social and economic features, had achieved with its



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³³ Source: Eurostat. <http://ec.europa.eu/eurostat> and Statistics Finland; http://www.findikaattori.fi/en/eu/portal/page/portal/national_accounts/data/main_tables, 20.11.2013.

social, as well as economic organization and orientation to become the leader of economic development and progress in the region, as well as an example developmental model for many smaller economically open underdeveloped countries that are trying to reach highly competitive and developed nations of the world.

Industrial policy

The industrialization of Finland has begun in the middle of the nineteenth century with an intensive development of the wood processing industry which remained a traditional imprint of the Finland's industry until the present day (production of tools for wood demolition and processing, sale of logs), and later as a logical upgrade, the paper industry was developed. Success and accumulated profits are being spilled over into development of other industrial branches such as metal processing and engineering industry, textile and chemical industry. The deepest crisis which Finland had encountered in its newer history, since the start of the 1990s, in the end resulted into leaving traditional industrial politics based on targeting and subsidies, which lead to changes within the same industrial structure, while new market mechanism and procedures in line with the demands of the global marketplace were being introduced into a centralized industrial politics by the government of that time. Dominant financing role of the economy was transferred from banks to stock exchange.³⁴

The crisis which started in the financial sector had taken over the whole economy, which was visible by an increase in foreign debt, unemployment and the number of companies that went bankrupt. The government made decision to devaluate domestic currency with which it somewhat made easier the position of exporters; however, a problem occurred with the companies that used in the previous period of relatively low interest rates took loans in foreign currencies, which now caused them liquidity problems with paying off their debts. Instead of an old way of managing industrial policy, new national industrial policy mainly relies on the regulation through market mechanisms, but with state subsidies and promotion of cluster production organization.

Significant portion of the state ownership in Finnish industry in the preceding period allowed the government, at times of recession, an easier and more effective setting of direction for the companies toward new strategies of development. In this way, the limitations which were brought upon the Finland's industry by its size and constraint in terms of versatility and amount of available resources had lead the creators of the industrial policy, on microeconomic level, to promote and to stimulate development of network cooperation within the framework of the leading clusters in the forestry sector and wood industry, production of specialized heavy machines and ships, as well as electronic industry. Exactly in the sphere of the electronic and electro industry had those policies resulted in developing exceptional strategic partnerships which were not founded on classic relations between subcontractors, nor were they structured in pyramid form in terms of ownership.

Contemporary Finnish industrial policy is directed toward the development of new producers and products through the affirmation of export where the largest part belongs to a smaller amount of bigger companies in domestic or co-ownership with partners from the neighboring Scandinavian countries. The creators of economic policies do not spend available resources for prevention or alleviation of consequences of unavoidable changes caused by international economic relations in the world on which Finland cannot have any influence. Instead of that

³⁴ For more detail about Finnish industrial policy see more in: Ylä-Anttila and Palmberg, 2007.

they rely on the measures of horizontal industrial policy by focusing on creation of business friendly environment in order to cope with them.

Education

In continual adjustment of small, open and highly competitive economies with structural changes of the global economy, a significant role is placed upon the national education system. Finland's educational system is characterized by high openness with a tendency to encompass the whole population with no regard to age or existing professional qualifications with an aim to implement principles of lifelong learning, quality and efficiency in teaching, and connecting it to demands of national economy. Finnish students also regularly achieve enviably high results on the international knowledge assessments³⁵³⁶. A larger portion of GDP is invested in education compared to most member countries of the European Union and OECD. Almost 60% of the population completed high school, higher or university education (Porter and Solvell, 2002). In Finland, today, there are some 20 universities, polytechnic colleges and other institutions of higher education.

The key role in shaping, developing and constant monitoring of the Finnish educational system belongs to the Ministry of Education and the National Board for Education, although the management of the higher education institutions, from preschool to college level in larger part is decentralized and financed by the local government on a regional and county basis. The central government is making decisions regarding the obligatory curriculum and goals of educational programs that specific institutions must carry out and achieve, while their implementation and design of the complete curriculum belongs to the autonomy of the school management. The work is assessed through immediate methods of statistical analysis and targeted evaluation on the national and international level, without traditional inspection supervision.³⁷ The Finnish educational system encompasses preschool education, obligatory nine year elementary education which includes all children starting seven years old, three year gymnasium or three year specialty study, professional education which together with professional subjects and internship contains a significant part of general knowledge subjects, both official languages (Finnish and Swedish) and one foreign language³⁸, and allows the continuation of education on a higher level, as well as university level education which includes polytechnic education lasting 3 (Bachelor) +2 (Master) years which is possible to upgrade with four year, 2 (Licentiate) + 2 (Doctorate) years, postgraduate study, and in addition to this, maximum freedom is allowed when choosing specific subjects within a curriculum through the system of scoring and transition from one system of education to another. As opposed to the classical university education which, in addition to wider education, also emphasizes scientific research component, the polytechnic colleges which are connected with the regional development centers are more focused on practically applied developmental research and training in companies, where students gain valuable practical

³⁵ For example, PISA program as part of the OECD. For more details please see: http://www.pisa2006.helsinki.fi/finland_pisa/results/results.htm, 10.10.2014.

³⁶ Ojanen, J.: Education and training in Finland, Ministry of Education, <http://virtual.finland.fi/netcomm/news/showarticle.asp?intNWSAID=25819>, 18.10.2013.

³⁷ Ojanen, J.: Education and training in Finland, Ministry of Education, <http://virtual.finland.fi/netcomm/news/showarticle.asp?intNWSAID=25819>, 18.10.2013.

³⁸ Learning foreign language is emphasized within the Finnish education system, so the students who are interested in it they can start learning it from the beginning of their education when they are 7 years old, and one foreign language is becoming obligatory at the age of 9, while at the age of thirteen they are required to take one more obligatory language.

experiences where the latter later allows them fast and easy inclusion into the labor process, without often expensive and long practical trainings at the work place.

Constant possibility of getting into the educational process outside of the traditional educational system from preschool level up to the higher level education is open to all Finns through numerous seminars which are organized by professional schools for grown-ups, people's and virtual universities and other government financed or subsidized institutions that offer free or very cheap and quality education programs, and which have the common goal to decrease unemployment, especially of older workers.³⁹

Government's activities directed toward the construction of Finland as a country of high technology with a focus on research and development were mirrored in the increase of capacity of availability of higher, specialized and higher education, during a period of time from 1993 to 1998. Total number of enrolled students at universities had almost doubled, while from this number those students who entered technical faculties and informatics had doubled, hence, in Finland on a yearly basis some 16000 university diplomas are issued, from which some 11000 master degrees and some 1000 doctorates, which places Finland on top of Europe (OECD 2003, p. 178). Despite that, today there is still present demand for domestic and foreign, highly educated work force, especially in the IT and telecommunication sector. Finnish education system clearly points to the importance of connecting educational system with the needs of national economy through common professional, developmental and research-based projects, concepts of lifelong learning, especially in a sphere of new technologies and methods of work, the flexibility of the education system which allow to the young people greater freedom of creating curriculum and gaining various know ledges and skills through the continuation of schooling at higher levels of education.

The role of innovations

During the 1980s in Finland, awareness was growing about the role of knowledge and innovation in the economy. At the same time, Finnish export was looked at with high criticism for its insufficient competitiveness which resulted in development of Finnish public-private model for stimulation of innovations (Koroma 2003, p.7). Public and private sector rapidly increase investments into research and development, while they are becoming more connected in order to share expenses and optimize effects of their investments. At the same time, there is an increase in strengthening of highly competitive basic industry with that one which is being based on high technology. Therefore today, based on the criteria of introduction of new technologies into the production processes, or in other words, transfer of invention and innovation at all levels of the production process, Finland has become one of the leading countries of the world (Maeenpaeae 2000). During the 1980s the focus was on rising of technological levels and the number of innovations related to high tech industries, especially telecommunication and informatics technology. Positive results were also attained, during the 1990s, in other, more traditional industries (forestry, electronics, engineering: for example industrial cranes and diesel motors, specialized shipbuilding: for example, icebreakers, sailing yachts etc. informatics: for example Linux, etc.) from where they spread into other numerous fields (physics, biotechnology, medicine, especially brain and nervous system research in which prof. Kohonen developed the so-called network concept of neuralgia, genetics etc. (Sipilae, 2001), as well as in development and improvement of technology for environmental protection. From the middle of 1990s, in Finland the capital

³⁹ Ojanen, J.: Education and training in Finland, Ministry of Education, <http://virtual.finland.fi/netcomm/news/showarticle.asp?intNWSAID=25819> , 18.10.2013.

from private and public sector for the needs of financing the research and developmental project had rapidly increased, so until the end of the century they were each year raised by 14% while the average growth in the European Union was less than 4%, while 70% of finances were allocated for private investments (Statistics Finland, 2004), which is also mirrored in the structure of export of Finland's economy dominated by high technology products (telecommunication, aeronautics and space, as well as chemical industry).

The government made the first step to support innovation by establishing the National Technology Agency (Tekes) in 1983. Through the support of development of new and upgraded existing technologies, and their implementation in production process, especially of small and mid-sized companies which account for 50% of all financial means which it has allocated (more than two thirds of the available money is intended for companies with less than 500 employees), and which could not succeed in penetrating and conquering global marketplace by making technological advancements by themselves, Tekes has significantly contributed to the development of the competitiveness of the Finnish economy. By offering financial help to interested companies Tekes allows them the implementation of demanding research and development projects, while also, cooperating with universities and institutes which aids with various applied researches which they conduct, and coordinate cooperation with application of research and development projects among companies, the universities and the institutes. It is also in charge of promoting and developing international cooperation based on scientific-research plan, between Finnish and foreign companies and science-research based institutions (Maeenpaeae, 2000).

Except Tekes, there are other institutions that are also participating in research and development activities: The Finland's National Fund for Research and Development (SITRA) which supports implementation of expensive and demanding science-research based projects, Ministry of Trade and Industry which finances research projects directly related to production, Technical research center (VTT) which encompasses a wide are of research in the field of natural sciences (from electronics to construction) and also by participating in foreign and domestic projects it contributes to transfer of technology and strengthening of national competitiveness, as well as various regional development funds. In 1987, Council for Science and Technological Policies was founded with the government premier in charge, and among the members of the committee were ministers of finance, trade and industry, education as well as representatives of main research organizations.

In 1990, the Council initiated two groups of reforms in order to affirm innovativeness on the national level (Potrer and Solvell 2002); Center for Program of Expertise dedicated to the strengthening of regional competitiveness through increase of innovation and creation of workplaces in selected areas of expertise, while the Cluster Program committed itself to the development of new innovative ability of industrial clusters through offering specific effort support in the sphere of research and development in each one of them. At the same time, the government opened fifteen so-called "business incubators" in proximity of the regional cluster in order to attract investments and aid economic development of those regions as well as clusters.

In Finland, on an annual basis, around 2500 patents applications are being submitted of which around half of them gets applied in industry, which puts Finland, in relation to the number of inhabitants, on the fourth place in the world, behind Japan, Germany and the USA.

Approximately 1/5 of submitted patents come from the area of research in relation to electric energy and electronics.⁴⁰

Effects of those policies toward scientific and research based activities, and especially in the sphere of basic and applied scientific researches, are being mirrored in economic and technological results of new technology transfer to everyday use with which the quality of life is being raised as well as the profits from export; that was made possible due to the rising of competitiveness, better human resources quality achieved through the education system, adequate social and institutional infrastructure that support investment in research and development, and as a social value promotes inclination toward technological development and progress. In this way, positive cultural effects also occur in the societal valuation of knowledge, and the general wellbeing in the society is augmented.

Finnish attitude towards innovation is being characterized by its pursuit of connecting highly-technological sectors with traditionally developed sectors of economy, especially on a local level, by connecting relevant related and supporting institutions that are of state and regional significance (universities, technological centers and science-research based institutes) with the local business subjects (Seppaelae 2002), where, based on the foundation of the local synergy a successful development of clusters is being supported. Local authorities participated in construction of seven technological centers connected with technical higher education institutions, where Helsinki University of Technology (HUT) is one of the most respected technical universities in Europe, which by acting through its research institutes, commercial developmental centers, regional center of excellence the so-called Kulminatum, and in cooperation with the business sector, shape special scientific park - Otaniemi Science Park, as a unique form of cooperation, exchange of information and results, and pooling together of knowledge and resources, also known as "Highway of Knowledge".

Focus on international trade

Owing to a relatively low level of economic development and exceptional natural resources in the area of wood industry and mining, the Finland's international trade, at a time of the first industrial revolution, in the middle of the nineteenth century, and all the way until the end of the Second World War was based on a wood processing and metallurgical industry as well as ship building. Since the Second World War, during the so called Cold War years, Finnish economy was tightly connected to the Soviet economy, and that period of the newer Finnish history, until the start of the 1990s, was not, to a large extent, used for the creation of economic relation with other potential foreign partners (Laakso, 2000). As opposed to the majority of the European countries from the Western block, Finland lost an opportunity to participate in the Marshall plan of the reconstruction after the war and technological transfer from the USA to Europe.

Because of the weakening of trade with USSR during the 1980s, and especially after the fall of the Soviet Union in 1991, Finland has turned toward the construction of stronger economic and political ties with the European community, and by this way removing many obstacles for the acceptance of investments from other EU member states. Finland is getting actively involved in the activity of the European Research and Development Projects, and Germany, Sweden and Great Britain have taken place, instead of the USSR, as the main foreign trade

⁴⁰ For example, among individual businesses the greatest number of patents in the year of 2000, 326 of them, was submitted by Nokia, followed by Valmet Corporation (Metso) with 169 patents and Sonera with 66 patents. The State Technical Research Center (VTT) submitted 62 patents during the same year (Sipilae 2001).

partners of Finland. Finland became a full member of the European Union in 1995, and in the process it had gotten even better integrated into a common European marketplace. This developmental period is marked by significant influx of direct foreign investments which Finland knew how to attract in appropriate way (Porter and Solvell 2002, p. 8.). Great mergers in the financial sector (Nordea) and (ABB) between Finnish and Swedish companies had significantly contributed to the construction of contemporary global Finnish companies. As time progressed, central questions of the Finnish economic policy have become the relationship toward technology and innovation, education, raising the level of competitiveness and the preservation of the market position as well as the problem of positioning of Finnish economy within a framework of process of European integrations. With adequate answers to these questions, conditions were created that one of the Finnish companies from the IT sector achieved global success. On the other hand, the global success of Nokia gave a significant contribution to the further transformation of the Finnish economy into a modern, market-oriented and socially-responsible global competitive economy.

Today, Finnish economy is marked by a high degree of openness, industrialization and participation in international trade. The last two decades of the development are marked by change in the structure and volume of foreign trade in the wood processing industry which traditionally occupies a central place, and has increased significantly and exports of industrial products as a consequence of application of new knowledge and high technology in production processes, in certain specialized fields or technological niches (construction of special ships, mobile telecommunications, machines for the paper industry, etc.) in which the Finnish industry has achieved excellent results at the international level. High tech products with a relatively high share of added value are also an important ingredient of realized and an important factor for future economic growth. According to Eurostat, approximately $\frac{1}{4}$ of Finnish exports now come from the sector of electronics and electrical industry, while its main trading partners are Germany (14%), Sweden, France, Netherlands, United States and United Kingdom, each with a share of about 10%, followed closely by Russia and Japan.

Since 1991 Finland's foreign trade balance is characterized by an excess of exports over imports which is steadily increasing, as a result of economic policy which are set as priority goals raising the level and quality of scientific research and development activities, permanent education and increase labor productivity, industrial policy that allows the adjustment of domestic industrial structure in line with the changes and demands of foreign markets and competition, with the aim to create a favorable business environment as a precondition for attracting new investments and sustain growth of GDP. On the lower level, imports are following the trend in exports, and are largely composed of production of raw materials other than wood and iron ore) and certain intermediate goods for domestic industry.

From the example of Nokia's development path within the overall structure of the Finnish economy we can see that the biggest weakness of the Finnish economic development model. Finland's dependence on a single cluster within the IT and telecom sector can prove to be a long-term strategic development weakness. First indications were visible at the turn of the century, in 2000, when the global downturn in the sector, and unfulfilled expectations about the adoption of new third-generation (3G) standards adversely affected the growth rate of the Finnish economy. The fact is that Finland has taken on, consciously or not, a certain risk that it has so far paid off with what was achieved in telecommunications. The challenge that Finland recently faced was not solely in the maintenance of the leading role of a single sector or, more precisely, one single company within that sector, but how to successfully transform a cluster that has developed around Nokia, and its relations with other related and non-related

clusters in the national economy, and thus encourage its diversification in the case of "collapse" of that one, leading enterprise, which so far, have been rather successful.

CONCLUSION

In the case of Finland, an example of a small, isolated country, development strategy based on a pro-innovative and pro-competitive approach proved correct. For its success, government participation in the design and implementation of a long term development strategy and vision of progress on which a consensus was reached between the interests of employers and employees was crucial. High rates of investment in education and research and development of new technologies that are taking place in an extremely efficient institutional framework which is formed under the auspices of the central and local authorities with the financial participation of public and private sector have resulted in the development of competitive advantages as well as globally achieved primacy in certain specialized areas and technological niches. Also, construction of optimal physical infrastructure is largely facilitating further development.

In the Finnish development model very important role belongs to the synergy between central and local authorities, enterprises and educational institutions, especially at the local level, where its full effects are achieved through the formation of clusters in certain industries and sectors, and constitute one of the main sources of competitiveness of the Finnish economy, not only IT and mobile telecommunications, but also metal processing, paper and chemical industries.

For transition economies that have not yet fully defined its development path the Finnish model of economic development contains some important lessons, since it is a country that, at the beginning of the 90s of the last century has stepped into a kind of economic transition, which was successful, with occasional crisis, and with the support of the regional community of the Scandinavian countries and, later also from the EU, to date has built an enviable social and economic model that has resulted in a substantial increase of living standard, national competitiveness, GDP *per capita*, technological progress and levels of education. To achieve that goal following factors proved to be essential:

- well defined long term, medium term and short term development strategy and policies;
- modern education system, which monitors and provides for the needs of the real sector for specific profiles at all levels;
- high rates of GDP growth, the development of new industries, high level of competitiveness, general economic and social progress is not probable without investments and innovation. Innovation is seldom made only in private sector, without direct and indirect support of the state, so connection of higher education institutions and industry, and regional and inter EU cooperation is necessary;
- for a small open economy that participate in major economic and / or political integration community and want to increase exports and to take advantage of now "extended" home market through participation in regional integration communities, there is no alternative to the active involvement of the international exchange of goods, capital and services, as well as the workforce. A prerequisite of this is, of course, the existence and continuous improvement and development of a certain spectrum of internationally competitive products and / or services that are desirable and necessary to its trading partners.

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