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Abstract

Generally, "industrial policy" can be defined as government interventions to promote industrial development beyond what would be realized by free market conditions. In the globalisation processes, physical-resource-based industries are declining, while high-tech industries and services are fastly increasing. In the new techno-economic paradigm based on information & telecommunications technologies, innovative activities such as absorption-reproduction of new technologies and industrial research and development (R&D) have become key to international industrial competitiveness. So that, Turkey's industrial policy that integreted with technology policy should realize the technological competence and industrial deepening (structural change) as a shift from labour and resource-based products to high-tech-based products. In 2003, T.R Prime Ministry, State Planning Organization published a document is titeled Industrial Policy For Turkey (Towards EU Membership). The aim of this paper is to criticize "Industrial Policy For Turkey". The objectives and principles of Industrial Policy For Turkey will be reviewed in the context that either theoretical framework or Turkey's industrial structure, institutional framework, incentive instruments and legal-administrative measures.

Keywords: Industrial and Technology Policy, EU Industrial Policy, Turkish Industrial Policy

INTRODUCTION

In this study, industrialization will be defined "as a process of ongoing replacement of labour intensive productive activities by technology intensive productive activities, leading to more value added sophisticated products"[i]. So that industrial policy can be defined as government interventions to promote industrial development beyond what would be realized by free market conditions[ii].

In the globalisation processes, physical-resource-based industries are declining, while high-tech industries and services are fastly increasing. In the new techno-economic paradigm based on information & telecommunications technologies, innovative activities such as absorption-reproduction of new technologies and industrial R&D have become key to international industrial competitiveness[iii]. Turkey's industrial policy should achieve the technological and industrial deepening (structural change) as a shift from labour and resource-based products to high-tech-based products in a globalised world.

In 2003, T.R Prime Ministry State Planning Organization published a document is called "Industrial Policy For Turkey (Towards EU Membership)". According to this document, "the main objective of industrial policy in Turkey is to increase competitiveness and productivity of the industry, and to promote and maintain sustainable growth within an outward oriented structure, in the face of increased global competition"[iv]. The aim of this paper is to criticize the document of "Industrial Policy For Turkey (Towards EU Membership)".. The objectives and principles of Industrial Policy For Turkey will be review in the context that either theoretical framework or Turkey's industrial structure, institutional framework, incentive instruments and legal-administrative measures.

The structure of the paper is as follows: Section first discusses the conceptual background and defines the main concepts such as industrial policy, its elements and instruments. Section two discusses the evolution of EU industrial policy in historical process. Third section discuses the question that Turkey's industrial policy towards EU membership, is it realistic or not?. Finally the paper is concluded with a few policy remarks on the appropriate industrial policy for Turkey.

1. CONCEPTUAL BACKGROUND

Industrial policy has been distinguished between two type elements in current conventional wisdom; functional (generic) and selective (sectoral) interventions. Functional interventions aim to eliminate market failures without favouring any selected sectors and activities. This type of industrial policy is directed not towards specific sectors or firms but towards improving the quality of the generic inputs that affect the economy as a whole. Selective or sectoral interventions are obtained to advantage some specific sectors and activities to eliminate market failures or externalities in the process of resource allocation. In second type, industrial policy is directed towards specific sectors, industries or firms, with the objective of promoting them because of their assumed importance for domestic economic development and international competitiveness[v].

There are different approaches may be classified in theoretical debates on functional and selective interventions; pure neoliberal, moderate neoliberal and structuralist[vi].. Pure and moderate neoliberal approaches are also called *laissez-faire industrial policy*. It has been characterized by a primary emphasis stable macroeconomic conditions for industry, investing in infrastructure and human capital without favouring any selected sectors. This approach aims to apply open doors policies in trade and foreign investments, use of pro-competitive antitrust regimes, and support to R&D at the pre-competitive level such as basic research and applied research. Structuralist approach is called *aggressive industrial policy*. It has been realized by governing economic activities with the indicative or strategic planning in Japan and East Asian countries. The elements of aggressive or structuralist policy include targeting of specific sectors and activities through favourable taxes, procurements, subsidies, and trade policies; R&D supports that tends to go beyond the pre-competitive stage; and anti-trust polices [vii].

Technology policy is the main component through the industrial policy. "The concept of technology policy refers to a set of instruments the government uses in promoting and managing the process and a direction of acquiring technological capabilities"[viii]. So that, *structuralist industrial policy* must achieve to increase technology-science based products in exports and production structures of a country. Table 1. indicates that technological basis of competitive advantages in manufactured exports[ix].

Table1.Technological Basis Of Competitive Advantages In Manufactured Exports

Activity Group	Major Competitive Factor	Examples
Resource-intensive	Access to natural resources	Aluminium, food resources processing, oil refining
Labour-intensive	Cost of unskilled, semi-skilled labour	Garments, footwear, toys
Scale-intensive	Length of production runs	Steel, cars, paper, chemicals
Differentiated Products	Products tailored to varied demands	Advanced machines, TVs, power generating equipment
Science-based	Rapid application of science to technology	Electronics, biotechnology, pharmaceuticals

Source: Lall, 1998, p.243.

S. Lall summarized the typical reasons to believe that export structures dominated by technology-science based products have better growth prospects than do others[x]:

- "Activities with the rapid product or process innovation generally enjoy faster growing demand vis à vis technologically stagnant activities.
- Technology-intensive activities are less vulnerable to entry by competitors compared to low technology activities where scale, skill and technology requirements are low...
- Ceteris paribus, technology-intensive activities lead to faster growth in capabilities and higher quality capabilities. They offer higher learning potential and greater opportunity for the continued application of science to technology.
- Capabilities in technology-intensive activities are more attuned to technological and market trends, and so are more flexible and responsive to changing competitive conditions.
- A technology-intensive structure is likely to have larger spill over benefits to other activities and to the national technology system".

The structuralist approach would argue that both functional and selective interventions needed to promote industrial development, but there is a policy priority for *selective interventions*. If the governments don't apply selective interventions and monitoring & control mechanisms, industrialisation may be occurred, but its pattern and technological deepening would be effected negatively in Developing Countries (DC's)[xi], such as Turkey.

In the literature, traditional industrial policy instruments include standards, R&D subsidies, government procurement policies, education policies, anti-trust laws, foreign investment and trade policies[xii].. In their historical process, many nations has been pursued differing mixes of aggressive and laissez-faire industrial policies.

2. EVOLUTION OF EU INDUSTRIAL POLICY

Economic globalisation has been increased over the past 20 years and there were aggressive competition between nations and economic regions. Especially, the successful industrial and technological deepening in Japan and the *four Tigers of East Asian* have led to merciless competition in the international economy. So that, national and regional strategies have been reviewed by interesting agencies which regional unions, international firms and governmental institutions. As a respond of European Union to emerging these developments has been developed *industrial and competition policies*[xiii].

After the Treaty of Rome (1958), EU industrial policy has been evolved into the several phases. There was no a common industrial policy of the community in 1960's. Member states were follow own industrial policy freely. Following the oil crisis of 1973, the European Community (EC) intervened with specific industrial policy to help member nation's main industries. This period was called *Interventionist Community Industrial Policy (1975-1985)***..** In this phase, industrial policies included attempts to revive the declining chemicals, steel and shipbuilding industries with subsidies to ease the pain of downsizing, modernization and restructuring. However, the Community began to provide funds for cooperative R&D projects in high technology sectors such as electronics and telecommunications[xiv].

The White Paper of 1985 outlined approximately 300 legal steps needed to ensure freedom of entry of goods, services, people, and capital throughout EC. Single market legislation was adopted during the 1985-1990 period. However, European Commission made it clear that national subsidies to declining industries would be reviewed. This period was called *Beginning of the Single Market and Economic Recovery-1985-1990*[xv].

The first serious debate on European Industrial Policy was made in 1990.. A more liberal approach to industrial policy was introduced in a communication to the European Council that *Industrial Policy in an Open and Competitive Environment*: *Guidelines for a Community Approach* (COM(90)556). This document has been outlined the basic principles of EC's industrial policy that have been developed by European Commission's the former documents. European Commission saw no place for central planning and *aggressive industrial policy* in the new approach. European Commission identified four challenges to EC industry such as globalisation, rising cost of labour and capital, need to diffuse technological innovation, importance of human capital improvement[xvi].. Since 1990's some documents have been published about industrial policy[xvii], and they have included as following elements that based on *laissez-faire industrial policy*:

- "Rejected the dirigiste planning / picking the winners and protectionist approach,
- Emphasis on structural adjustment capacity,
- More competition (creative destruction),
- Attack on state aids / protectionism,
- More investment in education,
- More social protection,
- More market enhancing infrastructure"[xviii].

3. TURKEY'S INDUSTRIAL POLICY: IS IT REALISTIC?

3.1 Industrial Structure, Customs Union and Its Effect

There are two ways to obtain competitive power in world markets; using the cheap labour or producing the high-tech products. If basic target of industrialization in a country focuses on changing its role in the international division of labour, it must be ongoing replacement of labour-intensive productive activities by technology intensive productive activities.. But, Turkey has joined to producing and exporting the labour and resource based products to international division of labour, such as textile and food industry [xix]. The main characteristics of Turkish industry follow that[xx]:

- Private sector activities have a considerable share in Turkish industry. Private sector realized more than 80 % of production and about 95 % of gross fixed investment in

manufacturing industry. During the process of privatisation, the share of public sector in the manufacturing industry has been decreased in recent years.

- Small and medium enterprises (SMEs) have a main share in the industrial structure. Generally, industrial enterprises has been concentrated by organizing industrial zones and small-scale industrial structures.

- Table 2. indicates that shares of main sectors in the manufacturing industry production and exports. Table 3. indicates that developments in exports structure of manufacturing industry by technological categories since 1980's [xxi].

Table 2. Shares of Main Sectors in the Manufacturing Industry (Production and Exports)

	Production * (%)		**Exports (%)****	
	2000	2002	2000	2002
Food industry	20,1	20,9	6,0	4,9
Textiles and clothing	20,2	21,5	39,5	36,9
Chemical industry	7,2	6,9		
Automotive industry	6,5	4,8	6,4	10,7
Petroleum products	5,9	6,9		
Iron & steel industry	4,6	4,9	7,4	8,1
(*) in 1998 prices (**) ın current prices				

Source: SPO, p.36.

Table 3. Turkish Manufactured Exports by Technological Categories (%)

	1980	**1985**	**1990**	**1995**	**1997**	**2000**
Resource-int.	65,2	31,6	25,4	22,1	16,9	16,1
Labour-int.	22,7	35,8	41,5	44,8	48,8	43,8
Scale-int.	12,9	26,9	28,8	32,4	23,2	25,3
Differentiated	1,4	7,6	5,6	7,7	8,5	14,6
Science- Based	0,2	0,4	0,6	0,3	0,2	0,2

Source: Soyak 2002, p.126.

Manufactured exports structure by technological categories in Turkey is based on labour and resource-intensive products such as textile&clothing**,** iron&steel and foods. There have been a competitive advantage in textiles-clothing sectors that based cheap labour and natural resources. In addition, low physical and human capital accumulation, problems of physical and technological infrastructure, inadequate enterpreneurship, insufficiency in generation of new technologies and macroeconomic instabilities are the negative factors that effecting the industrial competitiveness of Turkey.

- Completion of the customs union with the EU was an important phase for the opening up of domestic industry to international competition. But there have been some critical impacts from customs union and other international agreements. After the customs union, while the share of EU in total imports is decreasing, value of imports from the EU increased from 16.9 billion US $ in 1995 to 23.1 billion US $ in 2002. Although, the share of the EU countries in total exports has remained at the same level of 51-52 %, total exports to the EU were 11 billion US $ in 1995 and increased to 18.1 billion US $ in 2002 [xxii]. According to the sectoral dispersion of exports to EU, textiles sector had approximataly %50 share in 1995-2000. But according to sectoral dispersion of imports from EU, technology-science based products had a considerable share in the same period.

- In addition, *Agreement on Subsidies and Countervailing Measures* was accepted in 1995. This Agreement has prohibited the subsidies to industry by governments, excepts R&D and environment investments. Industrial subsidy system was harmonized with the WTO and the EU rules. *Agreement on Trade Related Aspects of Intellectual Property Rights*, (TRIP's) was accepted in 1995. The TRIP's Agreement should foster greater harmonization of rules and practices for protection of intellectual property. After that, Turkey has completed quickly legislative and institutional arrangements on industrial property rights to harmonized with the WTO and the EU rules. But there will be no positive effect of these agreements on Turkey's industrial competitiveness, because Turkish industry is appeared as a passive user of transferred technologies. The government offers fiscal incentives for industrial R&D in 2002, a few firms applied for these incentives. Under these structural characteristics of Turkish industry, science-technology-based sectors do not benefit from national patent system to transfer new technologies. Patent system is used to obtain a monopoly power and royality by pharmaceutical and chemistry multinational companies (MNC's). These MNC's do not transfer the new strategic technologies such as information and communications to Turkey by patents[xxiii].

3.2. Turkey's Industrial Policy: It is not Realistic

The main objective of Turkey's industrial policy is not realistic from two perspectives; policy contradictions and institutional structures.

3.2.1. Policy Contradictions

According to *Industrial Policy For Turkey (Towards EU Membership), the* main objective of industrial policy[xxiv] "is to increase competitiveness and productivity of the industry, and to promote and maintain sustainable growth within an outward oriented structure, in the face of increased global competition" In addition, "this objective will be achieved within the framework of market principles and in compliance with international agreements".

There are considerable contradictions between general and sectoral policies in this document. According to general policies, for example, "information and technology intensive industries such as defence and aviation, machinery, chemicals, electronics, software and biotechnology will be promoted, the use of advanced technologies in industry will be increased" [xxv]. However, sectoral priorities myopically focused on textile sector. Although, it has been pointed out that, "increased supports for new product development in fields with high value added, the electronics industry will gain a greater share from the global markets. In the automotive industry, it is important to set up a structure, which enables economies of scale, implementation of new technologies and export-based and sustainable competitiveness"[xxvi]. But it hasn't designed an aggressive industrial policy integrated with science-technology policy to promote science-based and differentiated industries such as electronics-software and advanced machines.

3.2. Institutional Structures

Under the Customs Union conditions, Turkey's industrial policy must realize the *technological competence and industrial deepening* (structural change) as a shift from labour and resource-intensive products to science-technology based products, aggressively. But institutional framework of EU and other international agreements don't allow to apply the *aggressive or structuralist industrial policy* in Turkey. I think, the main objective of Turkey's industrial policy wouldn't be *achieved* within the framework of market principles and in compliance with international agreements that attribute the *laissez-faire industrial policies.*

In addition, Turkish bureaucratic mechanisms have some problems to apply the industrial policies. The most important aspect of this problem is present institutional structure. Dispersed and clumsy institutional mechanisms prevent to realise the integration between industrial and technology policies in Turkey. "*The Supreme Council for Science and Technology (BTYK)*, which enabled designing of *science-technology policies* with the participation of ministers, high level bureaucrats and representatives of non-governmental organizations"[xxvii]. Several institutions have been involved in the formulation and implementation of *industrial policies*: Undersecretariat of Treasury, State Planning Organization, Undersecretariat of Foreign Trade, Privatisation Administration, Small and Medium Industry Development Organisation (KOSGEB), The Scientific and Technical Research Council of Turkey (TÜBİTAK), Competition Board, Eximbank, Turkish Standards Institution (TSE), Turkish Patent Institute, Turkish Accreditation Agency and non-governmental organizations such as TOBB[xxviii].

CONCLUSION

This paper primilarly includes following policy remarks on appropriate industrial policy for Turkey:

- Governments must integrate the technology policy into the industrial policy. An *aggressive-structuralist industrial policy*, instead of *laissez-faire industrial* policy, must be prefered.
- All national institutions of the industrial-technology policy must be combined under the unique autority.
- *Dynamic comperative advantages* in all industries could be taken into consideration. Subsidies should be diverted to information-telecommunications industries rather than traditional labour-intensive industries such as textiles.
- Governments must suspend the *customs union agreement* signed with EU and apply its own independent industrial-technology policy**.**

- IMF-World Bank's structural adjustment programs must be subsituted with perspective development plans.

- Governments must abonden privatization of state-owned economic entireprises (KİT). Public entireprises must join industrialization process with private sector in Turkey

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