Selecting Strategic Industries: International Practice

Ramona Florina POPESCU[1], Maria Daniela BONDOC[2]

Abstract. Our paper pleads for the importance of strategic industries in the context of the renewed interest in industrial policy. Methods of identifying strategic industries are presented and accompanied by examples of industrial policy measures in countries as USA and Japan. The EU industrial profile is briefly presented so that a correlation between selection criteria of strategic industries and the EU strategic options could be drawn. These correlations represent a view at the EU level and differ from the ones that can be made at members' country level, based on the common industrial strategy. Strategic sectors will remain a focus point on the industrial agenda of most countries but motivations and selection criteria are widely different.

Keywords: industrial policy; strategic industry; selection criteria

JEL Classification: D72, E61, O14, O25

1 Introduction

The problem of strategic industries is very little discussed in the specialized international academic literature, much less in the Romanian one. This fact is somehow incongruous with the importance of these industries in the industrial policy of the countries, in general, and of the most developed ones, in particular. As the most recent report on Trade and Development issued by UNCTAD shows, in the past few years there has been a global revival of interest in industrial policy. As a consequence, some developing countries, including the largest ones, have reassessed the benefits of industrial policy for structural transformation and economic growth.

Each government tries to make the most of those industries with high global competitiveness, and to reduce the competitiveness gap in the case of the weakest ones. The interests in this respect are different, as we will see below. The difficulty arises when selecting the industries that will be included in the "strategic" category and which, of course, will benefit from this status.

2 Strategic industry issues in the context of industrialized economic development

In theory, the concept of industrialization has two meanings. On the one hand, we can talk about industrialization in the broad meaning of the word, referring practically, to all countries of the world, and on the other hand, in the narrow sense, as about one way of solving the problems of underdevelopment.

The problem of industrialization arises differently for the developed countries compared to the developing ones. Thus, while, in the developed countries, the problem concerning the support of the industry is related to a better use of the advantages provided by an effective technology, for the developing countries, the problems for which industrialization could provide a solution are much more complex and numerous.

[1] Lecturer, PhD, Universitatea din Piteşti, Str.Târgul din Vale, Nr.1, Facultatea de Ştiinţe Economice, Departamentul Contabilitate, email: rf.popescu@yahoo.com
[2] Associate Professor, PhD, Universitatea din Piteşti, Str.Târgul din Vale, Nr.1, Facultatea de Ştiinţe Economice, Departamentul Contabilitate, email: daniela.bondoc@gmail.com

The link between the problems of the strategic industries and those of the economic development is complex. Aurel Iancu (Iancu, p. 2) provides three explanations in this regard. First of all, in relation to the history of national economies, we can see that this kind of industries was precisely the one that had the calling to provide the development on modern bases of the national economies and the increase in their level of competitiveness. Secondly, in their evolution, national economies need, especially during the early development periods, significant endogenous impulses. In principle, strategic branches bearing technological progress and with extensive connections in the economy provide such impulses by promoting new technologies in the branches of the economy and in the society. Thirdly, due to the fact that the resources of any nation are limited, should be targeted especially to those productive branches - called strategic – which have the ability to influence the increase in the maximum comparative and competitive advantage, which is a guarantee of sustainable development and a prerequisite for the elimination of the gaps between nations.

The author also finds some discrepancies regarding the justification of the positive effects of the strategic industries for the development. They arise when seeking answers to the following question: what is the social and economic effect of a policy to support the development of certain sectors which has the main target the protection and promotion of the national interest when most companies operating on the national territory that belong to this sector are involved in extensive international strategic alliances and/or have become either the source of strategic technologies at international level, or transnational companies based in tax havens and which turn domestic manufacturers into captive suppliers whom they impose onerous contractual terms that affect the national interests. Consequently, it is difficult to identify which of these companies and sectors bear the national interest in order to be able to substantiate and formulate a certain strategic policy on the long-term development of the strategic industrial sectors.

There are many definitions related to the strategic industries (or sectors).

3 Methods of identifying strategic industries and justifying their support

Beyond the debate about their definition, there is a more interesting debate related to the actual way of finding those industries that are to be considered strategic.

Iancu (Iancu, p.6) lists the following interrelated criteria: endowment with factors of the nations, the scientific, innovation and growth potential according to the product life cycle, the intensity and extent of the connections to other sectors, the size of the value added.

The first criterion claims, in principle, that depending on the structure of the factors that accumulate over time (exploitable natural resources, physical capital, human capital, labour, technologies) and on the level of the costs at which they are capitalized the economic profile of each country and region is outlined. Currently, however, the important changes occurred in the landscape of modern economies have greatly reduced and have sometimes eliminated the dependence of the production and foreign trade structure on the structure of the endowment of the nations with natural factors.

The second criterion supports the assumption that if the industries provide products and services that meet certain needs and are demanded on the market, they can be deemed sustainable because they enjoy the recognition of the society. Aurel Iancu shows in his paper (Iancu, p.7) that we should take into account the fact that large differences occur between industries in relation to their rate of growth in the long term. They occur depending both on the size and categories of demands, as well as on their importance for the functioning of the economy and society, the possibility of substitution, the degree of saturation of the market, the evolution of the costs, and the elasticity of demand.

The inter-sectoral linkages represent the third criterion that certain authors put at the base of defining and selecting strategic industries. The idea starts from the conclusion that only certain industrial branches involve the formation and development of extensive networks of activities, called channels.

Making complex final products for consumption, export or investments induces a strong impetus to the economic development, so it would be helpful to developing countries to promote industries with strong inter-sectoral connections. The growth of these industries would lead to an increase of other industries and therefore, would stimulate the entire economy. And it seems that the economic reality has confirmed this claim.

The last criterion, the size of the GVA, is relevant not only due to its content - that of expressing in a synthetic manner the productivity level, but also due to its ability to show the productivity differences productivity between the branches. The branches with a higher level of GVA per employee bring a greater contribution to the economic development and to the wealth of the countries, which justifies the increased attention which must be paid to these branches (and among them, especially those with large weights in the export) in the strategic policy of the economic development of the countries.

The arguments on supporting these industries are related to the trade policy of the country and can be both micro and macroeconomic. Others are related to the agricultural policy, the competition policy, and the industrial policy itself. In his paper *"Trade Policies"* (Miron, 2007, p. 15), D. Miron reviews the following arguments related particularly to the protectionist trade policy: the national defense argument, the argument of infant industries, maintaining employment, the determinants of the strategic trade (as microeconomic arguments) the economic development programs, the industrial policy argument, the argument of interest groups (from the category of macroeconomic arguments).

4 The selection and the support of strategic industries in practice

There is no unitary model of economic development, and there is no unitary approach to support the strategic sectors of the economy either.

The USA

The authors of the study „Competitive potential of the economic growth: Guidelines for a new industrial policy in Romania" (Cojanu et al., 2010, p. 27) believe that in this case the least suitable thing is to assign to any governmental authority a public commitment related to supporting the economic sectors. They show that certain opinions view the industrial policy itself as a taboo in America in the latest decades.

The US trade policy analysis shows that even after the Second World War, USA was viewed as the champion and main supporter of free trade in the international trade field, and its commercial policy has also had this feature, with the worsening of its trade deficit and the increase in its foreign debt, certain changes were recorded in its trade policy. Since the mid-1970s there is an increasing extensive call for protectionist measures, primarily non-tariff barriers, which remain the favorite protection tool used in developed countries. Specialists estimated that the United States trade policy is reactive in nature, meaning that the protective measures are taken both as a result of internal pressures of various groups of interest, and in response to the practices of the external partners that are viewed as unfair. example, the "voluntary export restraints" were used as non-tariff barrier for the first time by the USA, in its relationships with Japan, for a few extremely tense decades, as a result of maintaining a significant trade deficit in their mutual relations.

There are, however, financing programmes that cannot be included in the above-mentioned categories of measures. The SEMATECH programme, *the field of semiconductors, the research in the biotechnology field, encouraging spin-offs in defense-related areas, the aerospace or electronics industry* are examples of this kind (Stevens, 1991, p. 99), benefiting from funding that often far exceeds the private ones.

The USA has also applied and applies measures to stimulate exports. Towards the end of the 1980s it implemented a comprehensive program to support *agricultural produce* exports. Besides subsidies

granted to producers, as in this case, other stimulating tools are also used: the "draw-back" system, the export loan guarantee and others.

Japan

A study (Cojanu et al., 2010, p. 27) of the Romanian European Institute makes assessments on the industrial policies of the major world economic powers, including Japan. This is an almost singular case among advanced countries due to the traditional position of the Ministry of Economy in favor of an industrial policy and the tendency to put the benefits of free trade on the second place. The authors state that since the 1970's, the industrial and commercial development decisions were foreshadowed by the regular public release of a decennial vision. The opponents of state intervention in favour of encouraging some industrial sectors may resort to discouraging data, recognized as such even by Japanese officials: in the past 20 years, Japan reduces its share from 14% to 9% of global GDP and goes from the 3rd place down to 23rd one in the global ranking by GDP/capita. However, all officials are ready to say that Japanese society boasts the highest life expectancy at birth and with the best health in the world and their economy is known as a power of the environmental techniques, as a nation of science, technology and information technology.

At global level, the similarity of the concerns is the one that rather stands out more, particularly by supporting "regional patterns of growth" in a generic system called the system of the " special global strategic and comprehensive zone", a concept close to European projects territorial cooperation. Here too, the clarity of vision regarding the integration of the local development issues is dominated by the imperative of the strategic change as we go. Where reference is made strictly to the trade policy, in terms of tariff protection, Japan is among the developed countries with the lowest levels, but specialists (Bal, 2006) say that Japan applies the most complex and unique type of non-tariff protection.

The policy for the stimulation of exports promoted by Japan was an aggressive and highly consistent one supported by the state. It was incorporated in the strategic development concept as a main component in tandem with industrial policy. Its aims were different during the post-war period. In fact, it would be more correct to talk about the existence of a policy of "protected promotion of the export." Thus, preparing its expansion on foreign markets, the Japanese authorities have protected the industries considered strategic from this point of view - they were, in turn, at different times, *the production of vehicles, the production of electronics and semiconductors, then the production of computers* - until they were strengthened and, being stimulated by the domestic competition (usually several large companies in the same branch of industry were created), they became extremely competitive in foreign markets, where, experts say, they do not compete with each other.

Until the 1980s, among the stimulation tools that were preponderantly used there were the financial and banking ones (loans granted under preferential terms and government guarantees for them, provided by the Development Bank of Japan, the Bank of long term loans or the Export- Import Bank) and the exchange rate. With the sensitive and almost irreversible appreciation of the yen in the early 1980s, the expansion of the exports was supported especially by specific management methods practiced by Japanese companies. For example, an asset in reaching international markets is the use of low profit margins, which allows for preserving the external competitiveness based on price, even in the context of the appreciation of the domestic currency.

The EU

The isolated actions of the governments or the application of the general Community rules does not solve the problem of the vulnerability of certain sectors at international level, due to the fact that the market for these products is saturated (for example, in the case of the steel industry) or because the respective industries are not sufficiently developed at community level compared to the world market (for example, the aeronautical industry). In order to meet these needs, sectoral Community policies are needed.

The data concerning the sectors in which the EU is traditionally competitive, such as chemical industry or the mechanical engineering shows that the situation is maintained in relation to the USA. However, these sectors have to cope with new competitive pressures from emerging economies, especially those in Southeast Asia. These countries are moving in the hierarchy of major exporters of manufactured industrial products. Several European industries such as automotive industry, the aerospace one, the mechanical engineering one, and the metallurgy, face international competition is no longer limited to the finished goods market, but is extended to the purchases of production factors. These problems are added to the phenomenon of relocation of the production activities to countries where cost advantages can be obtained. The relocation tendency is not only manifested in the traditional industries, it is also extended to high-tech sectors and research activities.

The experience in implementing the *Lisbon Strategy* left behind, however, some lessons for the areas that cause the rethinking of the industrial policy, as follows:

- First of all, the global competitiveness gaps began to be regulated by two standard measures: (1) a new concept of industrial policy adopted in 2005, which speaks of *an integrated approach*, i.e. an approach of the horizontal(support) themes along with a detailed analysis of the sectoral competitive challenges; and (2) the integration of economic policy guidelines towards the macro and microeconomic priorities and of the labour market, adopted by the Council in line with the *Strategy* by adopting them in the substantiation of *the national reform programmes and national strategies for sustainable development* for a synergistic effect and effective common policies.
- Secondly, the gaps within the EU have received attention in a more careful formulation of the regional development policy.
- Thirdly, there has been a step-by-step rapprochement between the EU policies coming from different areas of interest; all should lead to a competitive development. We can even talk about a "lisbonisation" of the structural funds on the ground that approx. 60% of these resources are already devoted to achieving the objectives of the *Strategy*. Thus, in October 2005, after a detailed analysis of 27 sectors of the manufacturing industry in the Union and in the context of the "Partnership for Growth and Jobs" of the Lisbon Agenda, the Commission launched a new industrial policy that aims to create a more favourable framework for the development of the manufacturing industries.

The horizontal initiatives refer to setting up a new forum for the pharmaceutical industry, the evaluation (mid-term) of the strategy on life sciences and biotechnology, a new high-level working group on the chemical and defence industries, the European Space Programme, a working group on ICT issues, establishing a dialogue on issues of mechanical engineering and creating a series of competitiveness studies, including for the ICT, food, fashion and design industries.

The sectoral initiatives aim mainly to the following sectors:

- The food sector (which will result in a package of measures);
- Mechanical engineering (the ELECTRA initiative with the purpose to identify the main competitive challenges faced by the sector in the long-term);
- Space (assessing the need for a European regulatory framework for the dissemination of data from satellites, the GALILEO project; stimulating an allocation of the spectrum through market mechanisms, etc.);
- Defence (the development of a European market for military equipment, technological development, increasing global competitiveness);
- Security (setting up the European Forum of Research and Innovation to develop a Common Agenda of the Security);
- The drugs sector including biotech products (legislative framework);
- Metallurgy and the forestry sector (two communications).

Against this background, on 17 June 2010, the EU adopted a new strategic agenda of growth, *Europe 2020*. This vision speaks of a concept of smart, sustainable and inclusive growth and promotes seven

key initiatives expected to have a mutual potentiation effect. Among them, the European Commission stresses the need for "industrial policy for the globalization era, to improve the business environment, especially for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally". The new decisions indicate the strategy to continue the enhanced experience of the converging trends and mechanisms for the coordination of the policy used so far. The sixth orientation of the economic policy specifically aims the industrial policy through the objective of "improving the business environment and the consumption and the modernization and the development of the industrial base to ensure full functioning of the internal market", where the list of the characteristics of this industrial base includes "modern, innovative, competitive based on low carbon emissions, efficient in using resources and energy" (Cojanu et al., 2010, p. 24).

On March the 9th 2011, the EU Parliament issues a resolution and recommends that the sectoral initiatives should be designed so that they would promote further modernization and increased competitiveness and sustainability industries. It also recommends that the focus should be the key sectors in Europe, as well as those facing major societal challenges but which simultaneously, have potential for development and employment of the labour. This conditioning indicates that the focus is shifting from supporting "sensitive" sectors under any circumstances, to supporting them only if their perspectives justify the efforts. The Parliament also recommends that the supported sectors should also be from the category of the new, innovative, creative activities, able to generate jobs.

Sectoral prospects concern areas (Cojanu et al., 2010, p.26) from aerospace, automotive and biotechnology to medical instruments industry, mining without energy purposes, ferrous metals, pharmaceuticals, railway supply industry, shipbuilding, space conquest, steel, textiles and clothing industries and wood.

5 Correlations among the selection criteria of strategic industries and the EU strategic options

As can be seen, the European Union's attention has been directed since its origins towards stimulating, protecting and supporting certain economic areas, in this case referring to industry sectors (agriculture and fisheries are also two very important areas for the Union, but this paper does not aim to analyse them). Thus, the challenges of each historical stage required taking measures to support those sectors deemed crucial for the economic health and (importantly) the social health of the Union. What we can see at first glance is that the few sectors that are detailed above have remained on "the list" of priorities so far, but "the list" has expanded, the evolution of the global economy, the challenges of globalization, the explosive growth of emerging economies and the economic crises requiring this expansion.

On the other hand, there was a change in the way the support measures are related to these sectors. While initially it was considered necessary to support those sectors that were not able to cope with international competition, but had a significant share in the economies of the member states, including in terms of volume of directly and indirectly trained workforce, subsequently the failure of vision led to the refining of this approach which became more pragmatic, meaning that the supported sectors be chosen based on their competitive potential, their growth potential and their ability to coordinate with other economic and social policy objectives of the Union.

The four criteria for the selection of the strategic sectors proposed by Iancu (Iancu, p.6) are: (1) the endowment with factor of the nations, (2) scientific, innovation and growth potential, according to the product life cycle, (3) the intensity and extent of the connections with other sectors, (4) the size of the value added.

Analysing them and linking them with the key strategic sectors identified at EU level and detailed above, the following conclusions can be drawn:

- The 3rd criterion can be applied in most of the cases being suitable also in the case of siderurgy, shipping industry, automotive and aerospace industries.
- Another criterion that applies to several sectors is the potential for innovation and growth (2) applicable for the automotive, aerospace and pharmaceutical industries.
- The size of the GVA (4) is a criterion taken into account when choosing the automotive, shipbuilding, and textile industry sectors that are the core activities for many regions of the Union.
- The endowment with factors (1) seems to be relevant only in the case of the textile industry, for which the labour is one of the essential production factors due to its volume, structure and quality. From the point of view of the directly and indirectly involved labour, the steel and the shipbuilding industries are also relevant, but not from the point of view of other factors involved (which in many cases are imported).

Going beyond the four criteria that can be deemed ideal benchmarks in selecting strategic industries we can find many other reasons underlying the choice of these sectors and not others. Moreover, the reasons which lead to a protectionist stance one way or another are extremely numerous; many of them are not economic at all, but rather social, military or political. Thus, we can say that the structure of the labour market and its need to maintain a certain level of employment led to the selection of sectors with a long-term decrease in the competitiveness as strategic, rather than other, more competitive ones, but with a lower impact on the labour market.

Similarly, strategic-military considerations have made areas such as aeronautics be regarded as crucial for the future of the Union. It cannot ignore the fact that we are in the space conquest era, and the economic implications of having a "leader" place in this race cannot be ignored. Moreover, the challenges of the present include biological hazards, based on new diseases that seem to have a fulminating evolution and ending with the viruses specifically created to terrorize certain populations. Thus, the biology and pharmacy areas become strategic despite their somewhat negligible direct economic effects.

The economic interest groups are present in the economic decisions of the European Union too, under the most varied forms. The European legislation can bring to the foreground needs that favour such a group or another, and therefore imposing the respective fields of interest. Finally, a last aspect may be that of the need to achieve sustainable development and not an extensive, invasive and destructive one, which requires the promotion of green industries, transforming the others into less polluting ones, and generally shifting the focus towards "eco" products, whether they are food products or general consumer goods.

As previously stated, the strategic sectors in the Union as a whole may differ essentially from those selected in each member country. This happened because the Union does not substitute itself entirely to the national economic decision, the growth and development of the economies of the member countries still depend heavily on the decisions of their governments. The overall increase vision of the Union is a coordinated one, but at the level of the industrial policy, no decisional integration was made.

6 Conclusion

Without representing a favorite study theme of economists, strategic industries are an inevitable option for economic policies all over the world. Better or worse chosen, as time proves, for economic reasons or rather social ones, it is obvious that those industries will always represent one of the paths governments will take trying to reach a higher level of economic development. Pressure groups existing both on governmental and global levels will be a distortion factor of selection criteria as well as security challenges more and more present at international level. At what extent economic justifications will prevail, it will be seen only on medium and long term.

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