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INTERCONNECTION OF PRODUCTION PROCESSES TO INCREASE THE AVERAGE MARGINAL COST PER ECONOMY

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In the Republic of Moldova, there is practically no perception of the term – the degree of use of technologies. For these reasons, there is no yield of production and a stereotype is formed that local production would not have the capacity to become competitive with imported production. It is a perception error and we will examine the most common procedures for interconnecting processes to generate a high yield to industrialization. In such cases, it is important to make a good communication between the administrative system and the business environment in order to create this system either in the urban planning process or in subsequent legislative adjustment to simplify the processes of using production capacities. The surplus of some factors of production for one is the necessity of a factor of production for another.

Keywords: *economic development, raw material, processing, connection of processes. reserves.*

JEL: L52, L60.

Introduction

The economic development of a state has some secrets that propel the marginal cost of products for each branch of the economy. Being aware of the fact that there are several factors of production, a strategy is made whereby these factors are with a lower price, thus increasing the profitability of the enterprise and leading to the accumulation of resources for new investments.

The optimization of production costs is not only the responsibility of the business environment, because when business develops – the state also benefits, reducing social costs, but also increasing current budget revenues. The raw material existing on the territory of a state helps a lot to reduce costs, while processing this raw material generates the collective welfare of the country. For some

categories of production, some raw materials represent waste or scrap, and for other industries these related products represent important reserves that can increase profitability or competitive capacity.

It's all about connecting these processes to make each sector profitable from these interactions. In the end, a supplier obtains additional sources of income, and a buyer obtains inputs at reduced prices, which ensures the exclusion of unnecessary intermediaries, which decrease the profitability of this value chain.

It is important to understand the industrialization process at the individual level, subsequently how this process integrates into the new economic system generated by the new rules of the game. In the period of collective industrialization, deficit and surplus arise. It is generated by labor migration, migration of factors of production, migration of raw materials simultaneously to several sectors, migration of financial resources, discrepancy between investments and recovery period, basic regulatory insufficiency, insufficiency of managerial culture. In order to make an efficient process management and increase individual efficiency, but also collective efficiency, we analyze the most efficient process correlation models. It is about the private sector, the mission of the state is only to facilitate, inform, regulate these processes to start in the right direction.

Each of the industrial connection models exhibited is already working in some states and enjoying capitalization, due to the fact that there was wisdom to communicate the business environment with each other, and state institutions regulated these connections so that they fit into the legal framework and facilitate the overall economic growth of all industries involved. Each model must be regarded as an instruction per sector, and such categories of interconnections still exist several hundred models, because they represent individual products from different sectors and each production has different percentages of recovery per kg of the raw material involved.

Methodology applied

The results of the research presented in this article were obtained by using traditional research methods such as analysis and synthesis of reports on the implementation of state programs, examination of feasibility studies, development strategies, industrialization strategies, industrialization and environmental protection policies in the European Union, Japan, Singapore, Great Britain, Georgia, Czech Republic, Netherlands, Japan, China. Sectorally, some basic categories

and their potential on the economy were selected, while hundreds of categories were kept as a reserve for exact branches of economy, which can be developed on the territory of the Republic of Moldova.

Results achieved

Surplus heat [1] – starting with stage 3 of industrialization and up to stage no. 6 of industrialization, the use of advanced technologies and serial processing takes place. These processes require the involvement of energy resources – production of lime, brick, glass, OSB, sugar, ethanol, canned food, building materials, electricity, servers for data storage and processing, etc. There are very few cases when this excess heat is perceived by entrepreneurs as a factor of production and which needs to be capitalized. It is necessary to connect other categories of production or consumption, to increase the efficiency of related companies – the thermal agent can be used in district heating (sale to the centralized heating system), construction (production of dry mixtures), agriculture (greenhouses), textiles (thermal cleaning of wool from fats and impurities), etc.

Leftovers from the food industry – in the processing of fruits (in the production of juices), vegetables (sugar beet processing, etc.), cereals (production of ethanol, starch, flour), oilseeds (production of bio diesel, production of oils, production of mayonnaise, production of margarine), grapes (production of wine, production of concentrated juice, there is waste that can be used for other purposes. This waste usually has a wide spectrum of use – in animal husbandry (it is part of compound feed), production of food colours (extracts are made), extraction of biogas (practically of each category), extraction of oils (especially from the seeds of fruits and vegetables), fertilisers and solid fuels (after drying). Already the degree of technology influences the added value that each connected company can achieve.

Waste from industrial production – usually represents big problems for the ecology component of the country. The most developed companies more easily perceive the importance of each kilogram of matter they manage, regardless of its condition.

For example:

- wood chips are raw material for chipboard production companies (and companies are located territorially in the immediate vicinity);
- scrap metalworking is widely used in the cement industry;
- Ash from waste burning is widely used in the road construction industry.

- stone flour, obtained from crushing, is used in the lime production industry and does not require additional costs for shredding;
- waste from the plastic industry is chemically processed, being transformed into "wax", which is an adhesive substitute for road production;
- up to 30% of new concrete created in EU countries contains recycled concrete, thus cleaning up the territory and capitalizing on the demolition of old buildings (Switzerland);
- The PET used is the raw material for the production of polyester, which represents over 50% of the textile industry. C;
- Recycled vulcanised rubber is a raw material for road construction and more than 17,000 car tyres are used per 1 km.

Livestock waste – in Hincesti district there is such a closed process of raw material circulation. There is an ethanol producer, which had enormous residues from grain processing (only 40% of the grain mass is converted into ethanol, 60% is scrap – bran). This entrepreneur created one of the largest cattle farms in the Republic of Moldova (4,000 heads) and one of the feed components is this production waste. The closed loop of this process is that manure is used to produce biogas (which is used in the production of electricity and ethanol). At the same time, leftovers remain to be used as fertilizers.

This model of interconnection is close to perfection, because the raw material holder does not throw 60% of the raw material mass (from 1 kg of raw material 0.4 kg ethanol is produced) to the trash, but passes several industrial steps and produces additional – electricity, biogas, meat, fertilizers and has surplus heat that in the future will be used to grow vegetables in greenhouses.

Storage of stocks in different sectors – let's admit that Termoelectrica [3] decides to switch the district heating process exclusively to alternative energy (biomass, waste, etc.). The process of supplying millions of tonnes of raw material annually needs to be well planned. If it is planned to build enormous warehouses in close proximity to the thermal power plant, it will be understood the creation of unnecessary costs. It is simpler to sign supply contracts with all suppliers who propose themselves and form a logistics of deliveries. The component of storage of goods stocks to be transferred to small suppliers of wood (natural or legal persons). Storage in several thousand locations will reduce retention risks (fire, flood, other factors).

Transport logistics – is one of the determining factors on pricing. We are examining the possibility of interconnection to several national programmes. At the national level, several private recycling units are formed, which will have a capacity of over 1.5 million tons of waste annually. The Moldovan Railways has passenger routes to many contact points in the country, but the use of transport capacities at a very low level takes place (in Soviet times 16 million tons were transported annually, now 4 million tons are transported). It is proposed to attach to these trains freight wagons, which will transport to the regions construction materials for roads (cement, sand, stone, etc.), and in the reverse direction to bring garbage from localities (including that stored in authorized and unauthorized garbage dumps). Thus, the mayoralties will have the same situation – they will take garbage to the districts, and back they will take stone, sand, cement, bitumen, metal. The enormous reductions in transport costs will allow recycling programmes and infrastructure construction to operate simultaneously in localities.

The cooperative system and clustering – perhaps it is the most efficient model to develop the regional economy. The important thing is that this process gives not be centrally managed by the state. It is necessary to leave everything in the private sector, where to maintain the efficiency of using machines and the permanent competition of staff, but also of finished products. The system is characterized by the cooperation of several categories of enterprises at different levels of industrialization. Where some companies will provide services or provide raw materials to large producers. Thus, regionally, the outline of specializations will be made. For example – a set of tourism enterprises will buy everything in the region – food, repair services, construction services, furniture, textiles, handicrafts, transport services, printing services, entertainment services, sanatorium spa services, etc. Clustering can also be in the industrial field – for example, leather processing companies develop the region by purchasing leather, lime, repair services, design services, specific leather processing services, equipment maintenance, maintenance of the leather training school, etc.

Migration of cadres to the private sector – any industrialization process creates an additional demand for labor. Periods of industrialization also develop cities through internal migration of population from rural to urban. But migration from the public sector to the private sector is inevitable – especially since many cadres already have the expertise of processes or databases to enhance the sales process. The state must deprive this process as a complex one and in order to avoid staff

deficiencies, it needs to plan the process, namely according to the logical order – reducing the number of acts regulating the activity, reducing the number of subdivisions within institutions subordinated to the state, decreasing the number of institutions subordinated to the state, digitizing services.

Excess investment in local infrastructure [2] – to maintain production capacities at a high level, even renovating or even building entire cities is resorted to. Another similar procedure is the permanent recycling of civil and industrial premises. Thus, the permanent occupation of the population and industry in creating more efficient constructions takes place. At the same time, the production model is restored, where recycling is one of the most important sources of raw material for new investments, it is even comparable and quantitative. The entire complex of machinery involved in recycling (demolition, sorting), production (transformation into new building materials) and construction (creation of new cities and efferent infrastructure) allows the state not to enter into an overproduction generated by previous investments.

Lending abroad with finished infrastructure objects – One state assumes the construction of roads, aqueducts, sewerage, buildings for another state (China's model of lending to African countries) and grants lending to an external borrower of these investments with a repayment term. The main difference between such investments and investments in similar local infrastructure is – migration of money supply and its repayment over time. Local production capacities are maintained by external demand. Lending with finished products, unlike simple lending, allows the involvement of companies in the field of local services provision, thus developing several business categories in complex horizontally.

Import substitution – the experience seen by the population of the Republic of Moldova can generate an erroneous perception of this process. And for these reasons, this process should not be perceived as an interventionist one, through abusive laws prohibiting or import-export quotas. The whole process should be one of mutual agreement with the business environment. All importers shall be provided with the facilities they need to produce locally the imported material or, where appropriate, a substitute thereof. We must follow the path of permanent collaboration and adjustment of legislation to achieve the desired results:

- The list of regulations undermining the activity of an entrepreneur is made and requirements, abusive control bodies, unnecessary permissive acts, certificates and other costs are removed.

- It regulates and meets the process of training new staff, simplifying employment procedures, deducting retraining and training costs, subsidizing research costs.
- The procedure for accessing raw materials, materials from recycling is simplified, stimulating the procedure for renewing old household equipment on new ones. The recycling of all categories of goods is the main source of raw material.
- Access to stagnant infrastructure is important, as the case may be, the state may waive the payment of rent of these objects, if the entrepreneur plans to develop the production. Where appropriate, it may be auctioned and sold.
- The banking financial sector – must be in enormous competition to have qualitative and cheap resources and services. Moreover, there will be unnecessary fees, unnecessary procedures and the development of much more expensive, but simple lending systems (such as microfinance organizations, bills of exchange with a high hidden commission, shadow lending).
- Media campaigns for the process and the proposed purpose – to create a collective way of thinking and correlate all administrative and civil forces in supporting the local producer, but also its production.

After the 1985 reforms of Britain's Thatcher government, based on Milton Friedman's economic theories, it was easier for everyone to understand that the presence of public enterprises in the economy blocks the country's development. These enterprises limit the potential for economic growth by maintaining monopoly status in some sectors. The withdrawal of the state from the economy leads to lower prices, leads to increased competition, leads to increased efficiency of equipment, leads to increased individual productivity of employees, leads to the development of innovation and design component in production, leads to increased exports and reduced corruption. The massive privatisation of all enterprises, some declared strategic, allowed Britain to return to the world arena and halted the economic stagnation of the 1970s.

The Dutch model of reducing the administrative apparatus – the audit of each subdivision of public institutions (sections, departments, agency, state-owned enterprises, etc.) takes place. If the net effort of these institutions is very small (they actually work 2 months out of 12 months), then the transformation of these institutions into an LLC and placed on the services market takes place. Services are contracted on an auction basis and it is cheaper to contract outsourcing compared to 12

months maintenance of these services. This model takes unnecessary costs off the shoulders of the state budget and creates more institutions that contribute and spend less. Every year it is possible to reduce the administrative apparatus by 10-15% of state employees. More manufacturers – less costs.

The centralized control system is changing towards the private sector – It seems unfeasible the model by which the state gives up institutions such as ANSA, the Consumer Protection Agency, the National Institute for Standardization and allows the private sector to exercise similar services. And most importantly – these services should not be mandatory. The law is amended in favor of the Affidavit and whoever violates should risk imprisonment. This stops all speculation about corruption in the system. Yes, corruption disappears because there is no longer a monopoly and free competition will regulate relations and will not allow price increases. In addition, there is the interested party in the lawsuit – who will sue any deviation from the norm. Such models can be found in Georgia (renunciation of ANSA) and Czech Republic (renunciation of PCA).

Doing Business System – This set of indicators deserves permanent help, because the inclusion of the Republic of Moldova in the top 10 in the world according to the World Bank's Doing Business rating [4] will allow attracting many foreign direct investments, which will become the engine of the economy. Without budgetary resources, the national economy will develop.

Horizontal cooperation of companies with similar status – especially in the field of agriculture a low return on investment is felt. It is due to the fact that there is a lack of a culture of cooperation between small farmers. Many farmers with 50-300 hectares access individual loans for agricultural machinery. But this technique works only 2-3 weeks out of 52 weeks of a year. Respectively, the vast majority of profit is consumed to pay bank installments. If the cooperation of several small farmers takes place – they with 1 machine can ensure efficient processing of all land. At the same time, the bank rate is distributed proportionally among all beneficiaries. If 10 people cooperate, then they each save 90% of the profit of the companies instead, because they do not pay each installment to 10 tractors, but pay 1 single installment jointly. The situation is similar for other categories of investments.

Each locality should support itself – such an attitude will allow the development of communities, because public procurement for schools (food, district heating, repairs, landscaping will be accessed locally), energy (own electricity, biodiesel as a substitute for diesel, E85 as a substitute

for gasoline, biomass as a substitute for coal, biogas produced from waste), afforestation, food products to be local – will lead to maintaining circulation of enormous amounts of money for the community and, respectively, will not need state allowances. All we need to do is simplify procurement procedures.

Conclusions:

1. It is necessary to create the adapted National Industrialization Strategy, where these important details of interconnection of processes are taken into account.

2. It is necessary to start the process of media coverage of industrialization, existing regionalization, existing infrastructure, untapped resources, regional human potential. This process will decisively influence entrepreneurs to invest, as they will feel the government's openness to collaboration with the business environment.

3. There is a need to adjust the Doing Business standards of the regulatory system in the Republic of Moldova. This will open doors to new international investments in most branches of the economy.

4. Transparency of information will protect entrepreneurs from surplus investment in some sectors and insufficient resources in others. The balance of supply and demand will keep the economy in a competitive environment and will not allow the formation of artificial crises.

5. There is a need to create performance control points of the industrialization and connection process. The checkpoints will be based on macroeconomic indicators and they will already indicate the need to adjust the country strategies, where priorities change, being directed especially to the qualification of staff so that they can bring added value to the business environment and respectively to the economy.

6. It is necessary to create a platform for verifying information on the potential of internal resources and to create new policies with the online update of existing information.

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