UDC 339.544
S. V. Knyaz, Doctor of Economic Sciences, Professor,
N. H. Heorhiadi, Doctor of Economic Sciences, Professor,
I. O. Krasilych, Assistant

TECHNOLOGY OF FORMATION OF ENTERPRISE EXPORT-IMPORT ACTIVITY MECHANISMS

Urgency of the research. Under the circumstances of economic recession and unstable money it is possible to ensure successful functioning of enterprise in a way of outer markets outgoing. It will enable enterprise to enlarge the amount of realization, economize approximately regular expenses, diversify the risks connected to unfavorable conjuncture at home markets, etc.

Target setting. Realization of outer economic activity of national enterprises is inefficient. It may testify to the fact that the tools of designing technologies of formation of export-import activity mechanisms development is missing.

Actual scientific researches and issues analysis. Researchers are the following, I. A. Astapova, [1], N. V. Butenko [4], D. Yu. Ventskovsky [5], N. M. Horbenko [6], S. M. Chystova, A. Ye. Nykyforova and T. F. Kutsenko [7], O. V. Gemyoda[9] and many others.

Uninvestigated parts of general matters defining. However, none of the researchers accentuates on the problems of export-import activity development on the level of a separate branch or enterprise.

The research objective. The analysis of theoretical sources and the topicality of the issues under research develop the following aim of research: determination and realization of technologies of formation of mechanisms of export-import activity of enterprise.

The statement of basic materials. The analysis of the dynamics of export-import operations which are realized by national subjects of manage proves that average part of import operations throughout 2001-2015 yrs. was 52.23 %, while in January 2016 it increased to the level of 53.37 %, which is 3.16% more than the same index of January 2015 and 7.6% higher in comparison with January 2002. Thereby it has been considered ways of formation of the mechanisms of foreign economic activity.

Conclusions. We have determined key features of vectors sequence of outer economic activity and proved that enterprise may succeed more in polyvector strategies achievement which means outgoing on a number of markets and operative response to changes in inner and outer environments with the help of outsourcing company.

Keywords: technology development; export and import activities; outsourcing; mechanism of export-import activities
**Topicality of the theme under research.** Under the circumstances of economic recession and unstable money it is possible to ensure successful functioning of enterprise in a way of outer markets outgoing. It will enable enterprise to enlarge the amount of realization, economize approximately regular expenses, diversify the risks connected to unfavorable conjuncture at home markets, etc. Outgoing on foreign markets may take place on the basis of the application of the mechanisms export-import activity development the realization of which must coincide with particular specific vectors which mean strong hands in cooperation with foreign partners. Such vectors are the experience of cooperation with foreign counteragents, part at home markets, enterprise competitiveness level, etc.

**Formulation of the issue.** Instability of political situation and national currency affects unfavorable the dynamics of the amounts of export-import activity which is realized by national subjects of ménage. According to the data by State Institution of Statistics of Ukraine [16], during January 2016 the reduction of the amounts of export-import activity up to 26,9 % has been observed in comparison with equal data of January 2015. Pic. 1 represents the dynamics of export-import operations during the period of 2001-2015 ys.

![Graph showing dynamics of import and export operations](image)

**Pic. 1. Dynamics of amounts of export-import operations during 2001-2015 ys., mln. dol. USA**

*Done according to the data [16]*

As one may observe on picture 1, notwithstanding the tendency to increase during the period of 2001 - 2008 ys., in 2009 суттєве rise of the amount of export-import operations was observed. Since 2012 to 2015 the decrease of the index under consideration has been observed, which is relatively equivalent to 50,7 %. Thereby, on the basis of dynamics of the amounts of export-import activity of national enterprises analysis we can claim that the realization of outer economic activity of national enterprises is inefficient. It may testify to the fact that the tools to проектування technologies of formation of export-import activity mechanisms development is missing.

**Latest research and publications analysis.** The analysis of the sources in terms of technologies of formation of export-import activity mechanisms development proves that most authors are searching the solution to the problem under consideration within the space of macroeconomic research of the perspectives of national subjects of outer economic activity concerning outgoing on foreign markets. Such researchers are the following, I. A. Astapova, [1], N. V. Butenko[4], D. Yu. Ventskovskiy[5], H. M. Horbenko [6], S. M. Chystova, A. Ye. Nykyphorova and T. F. Kutsenko [7], O. V. Gemoya [9] and many others. The researchers mentioned previously concentrate on state regulation of outer economic activity in Ukraine and suggest their own strategies.
of increasing the level competitiveness of national export. However, none of the researchers accentuates on the problems of export-import activity development on the level of a separate branch or enterprise.

We may attach special attention to the works by the researchers who try to solve the issue of outer economic relations in Ukraine at transition level (the level of separate branch). These are such researchers as T. V. Kuznetsova, [11], K. A. Lyebedyev [12], O. Ye. Lytvyn [13], T. D. Lipikhina [14], T. V. Pepa [15] and other. However, these researchers consider the possibility to improve technologies of export-import activity in the sphere of machine building, notwithstanding the fact that this branch is the priority for economic development of Ukraine. The works by V. M. Bayrak [2], S. P. Bubenko [3], O. V. Yepishkina [8] and others are worth special attention. These researchers consider the necessity to realize the strategies of outer economic activity in a way of application of the mechanisms of their development. Nevertheless, the issue of the determination of technologies of formation of mechanisms of development of export-import activity of enterprise.

**Aim of the paper.** The analysis of theoretical sources and the topicality of the issues under research develop the following aim of research: determination and realization of technologies of formation of mechanisms of export-import activity of enterprise.

**Main results of research.** The analysis of the dynamics of export-import operations which are realized by national subjects of menage proves that average part of import operations throughout 2001-2015 ys. Was 52,23 %, while in January 2016 it increased to the level of 53,37% , which is 3,16% more than the same index of January 2015 and 7,6% higher in comparison with January 2002. It testifies to the fact that the amounts of import operations throughout the period under research prevail export ones 3 % on average every year. On condition of taking the tendencies of 2015 yr. and January 2016 p. we may notify the increase of the part of import operations in general goods turnover of Ukraine with foreign countries [16]. Pic.2 represents the dynamics of the amounts of export and import during 2001-2015 ys.

![Pic. 2. The dynamics of the amounts of export and import during the period since 2001 up to 2015, dol., USA](image)

*Volume of export operations, US dollars
Volume of import operations, US dollars*

Done according to the data of the source [16]

Coefficient of correlation between the amounts of export and import during the period under research since 2001 to 2015 is 0,9882, which proves the dependence between the amounts of export and import. That process might be reasoned by national currency devaluation, which leads to the decrease its purchasing capacity at the market of imported goods, that is why a probable reason of export decrease may become the rise of, national goods consumption at inner market. It is also worth noting that in 2015 the amounts 10 times exceed the ones of import for the first time since 2005.
Taking into consideration the fact that the devaluation of national currency during 2014-2015 yrs. and January 2016 yr. has significantly slowed down, and judging by the dynamics of hryvnya rate relatively to dollar rate there is a tendency to stability (relative midquadratic deviation in 2014 was 0,1399, in 2015 – 0,0746, in January 2016 – 0,0316), so, we may conclude that the level of competitiveness of national production at inner market is high in comparison with import one. Apart from that, we may highlight that along with the process of currency devaluation the level of national enterprises-exporters production competitiveness may rise for the reason of the decrease of the value of resources and work at inner market. It leads to the conclusion that the need of projecting and application of technologies of formation of mechanisms of export-import enterprise activity remains urgent.

During the process of new markets outgoing enterprise faces a range of problems: necessity of market investigation and revealing tendencies in consumers’ demand change, competitiveness level determination, marketing strategy formation, choice of partners, etc. The process of such problems solution lies in vector section choice which becomes the main feature of future strategy of outer economic activity development. Since enterprise analyses a large amount of factors, it is advisable to apply the theory of sets, specifically the axiom of accession which claims if x and y are sets, then there is such a set as w, the accession of x and y, whose elements are only y and x elements. Then formalized description of the stage of formation of mechanisms of export-import activity development may be represented with the help of term (1):

\[
\forall \left\{ X_{a1} \right\} \forall \left\{ X_{b1} \right\} \exists \left\{ X_{z1} \right\} \forall d \in \left\{ X_{z1} \right\} \leftrightarrow \left\{ d \in \left\{ X_{a1} \right\} \vee d \in \left\{ X_{b1} \right\} \right\}
\]

(1)

where \( \left\{ X_{a1} \right\} \), \( \left\{ X_{b1} \right\} \) - elements sets of \( R_{1}, V_{1}, C_{1}, R_{2}, V_{2}, C_{2}, \) i \( R_{1}, V_{1}, C_{1}, (C, - the aims of export-import activity development according to vector (V); R_{1} - are the decisions in terms of export-import activity development aims according to vector (V), relatively, which have time and expansion limits which emerge from the strategies and tactics of enterprise export-import activity development, specifically: deadlines and ways of realization, production and management resources, etc.;

\( \left\{ X_{z1} \right\} \) - set of element of machine-building enterprise export-import activity development which contains elements of sets only \( \left\{ X_{a1} \right\} \wedge \left\{ X_{b1} \right\} \).

The term (1) reflects the operation of set joining \( \left\{ X_{a1} \right\} \) to set \( \left\{ X_{b1} \right\} \), as a result of which new set appears \( \left\{ X_{z1} \right\} \). Element d is common for sets \( \left\{ X_{a1} \right\} \) and \( \left\{ X_{b1} \right\} \) which relatively belongs to set \( \left\{ X_{z1} \right\} \).

It is obvious, when enterprise forms mechanisms of development of export-import activity in accordance with the same scheme or algorithm, then every new vector connected will not differ from others in section of consideration of the factors of inner and outer environment and decision making and realization process in accordance with previously formed system of goals. In a formalized form it may be proved by the term (2):

\[
\forall \left\{ X_{a1} \right\} \forall \left\{ X_{b1} \right\} \forall \left\{ X_{z1} \right\} \forall \left\{ X_{z1} \right\} \forall \left\{ X_{z1} \right\} \left\{ X_{a1} \right\} \leftrightarrow \left\{ X_{a1} \right\} \rightarrow \left\{ X_{z1} \right\} = \left\{ X_{b1} \right\}
\]

(2)

Apart from new vectors joining, the sequence of goals with fixed strategy of outer economic activity development at enterprise take place. As a result of such sequence, not only aims, but also methods may be corrected. In accordance with the axiom by Tsermelo-Frenkel (ZFC), the phenomenon of sequence may be described with the help of the scheme of highlighting (y set corresponds to every x set and F features, the elements of which are x elements only which possess F feature). In formulae the phenomenon under consideration is represented in term (3):
The research of the experience of national enterprises on new markets outgoing proved that in the process of development of outer economy it is practically possible to introduce new vectors which do not coordinate with a typical system of goals, strategy marks and tactic tasks. It is due to the changes in structure of consumers’ demand, extensive fluctuation of market conjuncture, competitiveness rise, geopolitics change, etc. It causes the situation when managerial decisions become autonomous and independent, demand non-standard approach and depend on managers’ initiative. This supposition is especially urgent while investigating the problems connected to export-import operations fulfillment, as they mean applying productive, logistic, financial, intellectual potentials of business partners on the basis of outsourcing. Outsourcing is the process of passing of secondary functions of enterprise and all shares connected to it to a professional contractor (outsourcer). The word «outsources» originates from English «outsidersourcing» — «the use of outer resources» and is often translated as «cooperation», «subcontract» and even «management functions, warrants and responsibilities delegation within the task».[10]. Outsourcing provides enterprise with a range of advantages, namely enterprise orientation on main tasks fulfillment in a way of delegation of a part of responsibilities to a company-outsourcer, also decrease of cost of those operations which are realized on the basis of outsourcing which is achieved through a limited specialization of enterprises which serve as outsourcers. One of the advantages is the access of enterprise to new resources. Outsourcing is especially urgent for enterprise when there is a necessity of a non-standard solution to certain problems, namely outgoing on untypical for enterprise markets, successful application of modern technologies, etc. Outsourcing company possesses extensive advantages and experience of twin tasks fulfillment owing to limited specialization in comparison with enterprise which may find it a one-time task or not profitable. Uniformity and limited specialization provide outsourcing companies with advantages of following modern tendencies in technology development which allows to be ahead of other enterprises and whose specialization does not lie in the plane of outsourcer’s activity direction. Accounting may serve as one of the examples of this. In addition to that, outsourcing company is responsible for all the risks connected to incorrect counting.

To sum up the above mentioned facts, one can conclude that under the conditions of outsourcing enterprise possesses a wide range of possibilities concerning the development of export-import activity according to vectors which are independent of already home adopted. On the basis of set theory the given supposition may be illustrated with the help of the axiom of regularity (any non-empty set A has element B, where intersection of A and B are empty set), formalized illustration of which is supplied in term (4):

\[ \forall \left( \frac{\delta}{\gamma - 1} \right) \exists \left( \frac{\gamma}{\delta_{j = 1}} \right) \left( \frac{\delta_{j = 1}}{} \right) \in \left( \frac{\delta_{j = 1}}{} \right) \rightarrow \exists \left( \frac{\gamma}{\delta_{j = 1}} \right) \left( \frac{\gamma}{\delta_{j = 1}} \right) \in \left( \frac{\delta_{j = 1}}{} \right) \wedge \exists \left( g \in \left( \frac{\delta_{j = 1}}{} \right) \wedge g \in \left( \frac{\delta_{j = 1}}{} \right) \right) \] (4)
where \( g \) is such an element \( \left\{ \frac{3}{x_{i,t}} \right\} \), section is empty set. Element \( g \) is an independent vector in accordance with the aims and methods of their achievement.

At the final stage of technology realization of the formation of enterprise export-import activity mechanisms the scheme of turning is applied (completion axiom), whose formulae is illustrated in term (5):

\[
\forall V_i, \exists C_i : P(V_i, C_i) \rightarrow \forall \left\{ \frac{3}{x_{a,t}} \right\}, \exists \left\{ \frac{x_j}{x_{b,t}} \right\}, \forall C_i : C_i \in \left\{ \frac{x_j}{x_{b,t}} \right\} \Rightarrow \exists V_i \in \left\{ \frac{y}{x_{a,t}} \right\} : P(V_i, C_i)
\]

(5)

Successful realization of polyvector strategy of enterprise export-import activity development needs timely and rational decisions and relies on a improved system of information about the state of market conjuncture, demand changes, new opportunities and threats which enterprise may face. Thereby, a decent level of enterprise competitiveness is achieved with the help of management decomposition which is based on continuous improvement of the system of information collection about the state of inner and outer environment and also tactical analysis and use of data received to successfully achieve strategy goals.

As a result, the combination of different vectors of enterprise activity a power set appears. Given phenomenon is illustrated in term(6):

\[
\forall \left\{ \frac{x_i}{x_{a,t}} \right\} \exists U \left\{ \frac{x_i}{x_{a,t}} \right\}, \forall \left\{ \frac{x_j}{x_{b,t}} \right\} \Rightarrow \forall \left\{ \frac{x_i}{x_{a,t}} \right\} \leftrightarrow \left\{ \frac{x_j}{x_{b,t}} \right\} \Rightarrow \left\{ \frac{x_k}{x_{c,t}} \right\}
\]

(6)

where \( \left\{ \frac{x_i}{x_{a,t}} \right\} \) - power set, which contains subsets \( \left\{ \frac{x_j}{x_{b,t}} \right\} \), \( \left\{ \frac{x_k}{x_{c,t}} \right\} \), which represent specialization and diversification rise within a certain vector of export-import enterprise activity development;

- \( \varphi \) - common element for sets \( \left\{ \frac{x_j}{x_{b,t}} \right\} \) and \( \left\{ \frac{x_k}{x_{c,t}} \right\} \);

- \( \mu \) - common element for sets \( \left\{ \frac{x_j}{x_{b,t}} \right\} \) and \( \left\{ \frac{x_k}{x_{c,t}} \right\} \).

Thereby, according to the results of research conducted, we have determined the stages of technological process of the formation of mechanisms of export-import enterprise activity (Pic. 1). Given process develops accounting the data of enterprise inner and outer environment state. The research of the experience of national machine-building enterprises and their inner and outer environment factors proved that normally enterprises are oriented on information about the level of consumers' demand gratification, revealing the tendencies in its change. The analysis of these phenomena may influence enterprise competitiveness and the stability of its positions at the market.
Технологія формування механізмів експортно-імпортної діяльності підприємства

Рис. 1. Стадії технологічного процесу формування механізмів експортно-імпортної діяльності

Примітки: Авторська внесок
On the basis of research results of inner and outer environments the management of enterprise reach the decision connected to strategy correction and goals tactic achievement. The analysis of national enterprises experience proved that the given decisions are normally characterized by a number of alternatives:

- introduction of new type of outer economic activity as completely a new one, not connected to other vectors;
- aggregation formation due to local features of some vectors;
- elimination of unprofitable vectors of outer economic activity.

Thereby, we may conclude that the realization of technology formation of enterprise export-import activity development means a number of stages and is not a complicated process which may need non-standard and timely decisions by enterprise managers.

**Conclusions.** The paper analyses literary sources on the issue of determination of technology of formation of enterprise export-import activity development. We have determined key features of vectors sequence of outer economic activity and proved that enterprise may succeed more in polyvector strategies achievement which means outgoing on a number of markets and operative response to changes in inner and outer environments with the help of outsourcing company. We have investigated the regularities in the interaction of the components of mechanisms of export-import activity and proved that experience and timely response to changes in information technologies allow enterprise to successfully achieve the goals posed at the stage of formation. Further research may concern formation of information supply of export-import activity mechanisms development.

**References**


**Література**

1. Астапова, І. А. Формування чинників ефективної реалізації експортного потенціалу вугіллядобувних підприємств України: автореф. дис... канд. екон. наук: 08.06.01 / І. А. Астапова; НАН України. Ін-т економіки пром-сті. — Донецьк, 2000. - 24 с.

2. Байрака, В. М. Організаційно-економічні механізми підвищення експортного потенціалу інвестиційного комплексу України: автореф. дис... канд. екон. наук: 08.06.02 / В. М. Байрака; Укр. акад. зовніш. торгівлі. - К., 2002. - 20 с.

3. Бубенко, С. П. Організаційно-економічні механізми експортної орієнтації використання ресурсного комплексу України: автореф. дис... канд. екон. наук: 08.06.01 / С. П. Бубенко; Харк. держ. екон. ун-т. - Х., 2003. - 20 с.


9. Жемойда, О. В. Фінансово-економічні регулювання експорту-імпорту яловичини: автореф. дис...
УПРАВЛІННЯ ПІДПРИЄМСТВОМ

Economics [in Ukrainian].

Scientific bulletin of Polissia № 3 (11), Р. 2, 2017

Knyaz S. V., Heorhiadi N. H., Krasilych I. O. Technology of formation of enterprise export-import activity mechanisms

Received for publication 23.02.2017

Бібліографічний опис для цитування :