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Національного авіаційного університету**ВПЛИВ БЕБІ-ЕКОНОМІКИ НА ФОРМУВАННЯ ТА РОЗВИТОК ГЛОБАЛЬНИХ РИНКІВ
ВИСОКИХ ТА НАНО-ТЕХНОЛОГІЙ**

Анотація. У статті досліджуються умови впливу бебі-економіки на розвиток глобальних ринків високих технологій. Бебі-економіка розглядається як перший етап нано-економіки, коли створюються умови розвитку особистості в сім'ї, дитячому садочку, школі та університеті. Автор статті використала приклад практики Сингапуру, Фінляндії та США щодо формування системи виховання та навчання у дошкільних навчальних закладах, школах, професійній освіті та університетах. Та, окремо, визначаються умови впливу бебі-економіки на функціонування глобальних ринків високих та нано-технологій. У висновках окреслюється можливість використання досвіду перелічених країн в українських реаліях.

Ключові слова: бебі-економіка, нано-економіка, виховання, навчання, соціологізація особистості, високі та нано-технології.

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**ВЛИЯНИЕ БЕБИ-ЭКОНОМИКИ НА ФОРМИРОВАНИЕ И РАЗВИТИЕ ГЛОБАЛЬНЫХ РЫНКОВ
ВИСОКИХ И НАНО-ТЕХНОЛОГИЙ**

Аннотация. В статье исследуются условия влияния беби-экономики на развитие глобальных рынков высоких технологий. Беби-экономика рассматривается как первый этап нано-экономики, когда создаются условия развития личности в семье, детском садике, школе, университете. Автор статьи использовала пример практики Сингапура, Финляндии и США относительно формирования систем воспитания и обучения в дошкольных учреждениях, школах, профессиональном образовании и университетах. И, отдельно, определяются условия влияния беби-экономики на функционирование глобальных рынков высоких и нано-технологий. В выводах очерчивается возможность использования опыта перечисленных стран в украинских реалиях.

Ключевые слова: беби-экономика, нано-экономика, воспитание, обучение, социологизация личности, высокие и нано-технологии.

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**INFLUENCE OF BABY ECONOMY ON FORMATION AND DEVELOPMENT OF GLOBAL
MARKETS OF HIGH AND NANO TECHNOLOGIES**

Annotation. The article examines the conditions for the influence of the baby economy on the development of global high-tech markets. Baby-economy is considered as the first stage of the nano-economy, when conditions for the development of the individual in the family, kindergarten, school, university are created. The author of the article used the example of the practice of Singapore, Finland and the United States on the formation of systems of education and training in preschool, schools, vocational education and universities. And, separately, the conditions of influence of baby economy on the functioning of global markets of high and nano-technologies are determined. The conclusions outline the possibility of using the experience of these countries in the Ukrainian realities.

Key words: baby economy, nano-economics, education, training, sociology of personality, high and nano-technologies.

Formulation of the problem. The scientist born in the family. This thesis is relevant in the present. Therefore it is important to track the impact of education and conditions sotsiologizatsii child to identify opportunities to participate in global markets higher and nano-technologies. The overall objective can be formulated as follows: to determine the need for national education specialist for the development and introduction of high technologies in the global environment.

Analysis of recent research. In a globalized determined by factors that shape it. These factors are formed at different levels of the world economy, namely mega-; macro-; micro-; meso and nano. Mega factors are objective international environment factors, which include the activities of international economic organizations and functioning of transnational corporations. Macro factors are determined by activity of the State as a subject of international economic law. Meso-level activity sectors represented and internal regions and micro level - the activities of enterprises and organizations. Nano-factor, which include extreme manifestation of a micro-level, and that human activity as an

economic subject. Nano-factor forms a section of economics as nano-economy. Nano-economy (Arrow, 1951), in turn, depends on its constituents such as baby-economy (when human activity depends on how the person was brought up in childhood) (Ostapenco, 2015); Nano-economy (man as the main agent of economic activity, which depends on the efficiency of economic behavior of businesses, industries, governments and international organizations); nano-technology economy (as analysis of person who develops and implements nano-technology crown as personal fulfillment).

G. Kleiner (Kleiner, 2004), the Russian scientist and economist has determined that one of the approaches to the understanding of nano-economics is the interpretation of its component features - Baby economy.

Bold unsolved aspects of the problem. A common problem is the formation of global markets and high nano-technology, unresolved issue is the impact of these processes is man, and man is the main subject of these processes, we note that a person creates the character of a scientist in the family framework of education in certain educational institutions, implies the existence of a level of international economic relations as nano. Process baby is actively developing the economy in countries such as Singapore, Finland and the United States. The author has allocated most of these States, as are the countries with the highest ratings in international competitiveness and high levels of innovation systems. An example of these States to the formation of the baby-economy will be useful for Ukraine to active development of education and educational systems are forming relatively young age of inventors who will become future innovators and high levels can affect global markets of high technology.

The wording of Article targets and setting objectives. Define the system Baby economy in countries such as Singapore, Finland and the United States to form areas of educational reform and education system in Ukraine for directions to define the impact on global markets of high technology.

Presenting main material. It should be noted that the baby's economy indirectly affects the formation and development of global high technology markets. After tracking the promising young generation that is able to introduce new knowledge in the economy and in technology, and the arts, players of global high technology market (international economic organizations (such as the UN, WTO, IMF, etc.) and TNK, TNB and others) form his future at the nano level using global approaches of high technology.

Nano-economy is emerging within families when a family gives birth to a child and helps her in the sotsiologizatsii. A family dependent and affects the demographic situation in the country. Consider separately the demographic situation in countries such as Singapore, Finland and the US and its impact on the baby's economy. These countries were chosen because in international rankings of competitiveness they often occupy leading positions and are states - representatives of the most active regions of the introduction of high and nano-technologies, such as South-East Asia (Singapore), Western Europe (Finland) and North America (USA).

Yes, Singapore is generally favorable demographic situation, defined by a certain set of indicators [www.singstat.gov.sg]: in 2016, the population of Singapore was 5,673,000 people, which compared to the year 2015 increased by 1.3%. The citizens of Singapore are 3933000 persons and those temporarily living in the country is 524,600 people. Singapore is not a big country (total area is 719 thousand. M sq.) And the population density is 7797 inhabitants per square kilometer.

The age structure of the population of Singapore is as follows: a person under 20 years - 835 000, from 20 to 64 - 2610100, 65 years and older - 487,000 people. The average age of residents in Singapore - 40 years. Fertility and mortality in this country are as follows: birth rate in 2015 was 42,185 children, and deaths in the same year - the birth 19862. That is more than twice the death rate. Index opportunities for women to have a child of this country is 1.24, ie the average woman gives birth to a child. Index of infant mortality is 1.7. That is a thousand newborns account for nearly two deaths of infants. Life expectancy is 82.7 years for women - 80.4 years and for men - 84.9 years.

Consider the education system in Singapore, namely pre-school, school and vocational and higher education in this country. Preschool education is fairly well developed, as the statistics [www.skoolopedia.com] 99% of preschool children attending preschool institutions. Note that the age of entry to school in this country is 7 years. It is believed that children from 2 months to 6 years are just pupils of preschool education system in Singapore. All preschool educational establishments are divided into two groups: Child Care Center (Children's educational centers), Kindergartens (kindergarten) and Game Group (Playgroups). Children's educational centers to include infant centers (of 476) and Children centers (of 1303). A kindergarten has just 495 - a three-year child care.

In Singapore use such theoretical approaches to preschool education [www.skoolopedia.com]: Montessori, Waldorf Stein, based on games, Reggio Emilia method lofty goal, the theory of multiple intelligence, holistic mental learning. In this Asian country, parents have a wide selection of pre-school institutions where they act about 1800 units [www.skoolopedia.com]. The most common is the system Sengkang, who has 90 children's educational centers. The country in 2015 spent 360 million. Singapore dollars on subsidies for 79,000 children and infants to make the educational process. The average payment for the child in a children's institution in Singapore is S \$ 1,007 (in May 2016).

This system of preschool education education you have enough positive aspect in shaping personality. Kids get the initial years sotsiologizatsii experience when visiting a kindergarten or similar institution, young Singaporeans get first experience with others and learning experience some competence to be with this child and adult life. Such early sotsiologizatsii provides that kids are configured to communicate with peers and older people and getting them to counter attitudes and skills. In addition, it is possible for parents to engage in their own lives and advance the career ladder. Mothers have to work and receive subsidies from the state and fully educate a child who, going to high school already has experience sotsiologizatsii, as we noted.

Note that a preschool experience you study leads to the formation of young researchers in the future may become inventors and implementers of new technologies. Global markets high-technology and nano beginning with early childhood education, when this system of education depends on the interest and the possibility of testing something new and unusual. Understanding this should happen at the state level. The system of preschool education is part of the educational system of the country. In Singapore there is an understanding of and among the parents, and at the government level.

Preschool education is gradually flowing into the system of secondary education. In Singapore, it has a structure that characterizes exit declarations school graduates in an environment of higher and professional education.

Thus, primary secondary education [www.classbase.com] lasts 6 years, from 7 to 13 years. The system is divided into four-year degree (from grade 1 to grade 4) and two-year degree (5th and 6th grades). From the beginning the seventh grade secondary secondary education, which lasts 4 years for children from 14 to 17 years. This secondary secondary education can be divided into education and enlightenment Express Normal. These levels are based on the Cambridge system. Thus, children can choose from the following levels: Special, Express, Normal "Academic" and normal "technical". Distribution studies on specific competencies going from seventh grade and continues to release from the school with 10 class. In Ukraine, we are only beginning to form a specialization in high school and the experience of Singapore would not be superfluous.

In Singapore there are statistics [www.moe.gov.sg] on the number of schools and types. For example, in Singapore, there are 366 schools, 182 of which belong to the primary school, 154 - to the secondary (middle) schools, 16 - the school of mixed type (when combined primary and secondary, or secondary to colleges) and 14 colleges. Among these 366 schools accounted for 274 government, trust the government - 76, independent - 8 specialized independent - 4 and special - 4.

Modern Singapore - is one of the world leaders in developing and implementing university programs [www.hotcoursesabroad.com]. University education the country has considerable global level, especially since trains highly qualified specialists in the field of telecommunications and information technology. Singapore is also home to a significant number of world-class universities, occupying high positions in the list of main universities.

Higher education includes institutions and universities, which are quite popular among the population. By institutes include Institute of Technical Education, polytechnics and other educational institutions. Therefore, technical education institutions offer programs that are technical. National standard authority to obtain skills to graduation certificate is the Singapore Institute of Technical Education, its training areas include: connecting science, business, design, media, electronics and information and telecommunications technology, engineering and tourism.

Polytechnics such as Nanyang Polytechnic, exercise training to obtain specific skills for working in a particular workplace. Other educational institutions are independent educational institutions that train highly qualified professionals. These institutions are independent institutions and those that are not based Singapore Ministry of Education.

University of Singapore is a unique event that provides baccalaureate education (undergraduate) and post-university (postgraduate). The universities of this country is based public, private, national and industry. These various universities students have 3-4 year undergraduate programs in two areas Bachelor of Arts (BA) and Bachelor of Science (BS). Post-university education includes two levels: the master's level (1-2 years) and PhD-level (2-5 years). Post-university education creates special requirements occur in different areas of learning and different areas of research.

Table. 1 shows the system of university education in Singapore. Other areas of research and education reflect the number of students that higher education is a very popular and widespread in the country.

Table 1

Number of university students in Singapore in 2015. *

Course	Applications for entering		Passed students		Released graduates	
	Total	Women	Total	Women	Total	Women
Total	18124	9192	64303	32890	15236	7547
Accounting	1470	830	4723	2684	1036	556
Architecture, construction and real estate	419	262	1973	1189	539	351
Business and administration	2190	1272	7138	4027	1619	848
Dentistry	54	34	219	134	51	32
Education	294	247	955	751	401	305
Engineering Science	4934	1429	16677	4970	4374	1296
Fine and Applied Arts	466	244	1599	934	420	233
Health Sciences	569	417	1567	1126	481	353
Humanities and Social Sciences	3191	2158	11915	8054	2193	1450
Informational technologies	1247	389	4541	1452	1066	377
Law	405	171	1950	706	335	168
Mass communications	221	181	776	602	172	130
Medicine	390	176	1719	859	252	115
Natural, physical and mathematical sciences	2147	1288	8276	4909	1835	1145
Services	199	94	725	373	342	188

*Source: www.moe.gov.sg

From Table. 1 shows that the largest number of students enrolled in the specialty "Engineering Science", "Humanities and Social Sciences," "natural, physical and mathematical science." By studying these areas a significant number of women. A large percentage of women studying for women inherent directions - "education," "medicine" and "health sciences". In general, the womenfolk approximately half of all applicants, current students and alumni.

In general, the active position of women determines the effective direction of baby when realizing that a working mother can be well implemented, provides enough attention to their child. Model behavior within the family becomes a projection for the successful development of the individual, which can prepare, develop and implement efficient and high nano-technology and distribute them around the world.

Finland - European country that has the features of the demographic situation. Thus, the population of this country in 2016 is 5,523,904 persons [www.worldmeters.info]. This figure increases each year by nearly 0.37%. The net migration rate is from 21500 to 11601 people a year, when arriving in Finland more than leaving it. The average age of the population is 42 years. Indicator give birth to a child is 1.75 per 1,000 women. The average population density is 18 people per 1 square. km. The urban population of Finland is 83.6% and the share of the population of this country in the world is 0.07%.

Sexual structure of the population in 2016 is as follows [www.countrymeters.info]: 49,1% men (2,722,249 people) and 50.9% of women (2,822,885 people). Traditionally, European countries, in Finland more women than men. Women of childbearing age birth year 5911 babies (98 babies born on the day). 50,457 people die each year (88 each day). As we see more births than deaths and the rate of natural population is positive, because it comes every year more than dying.

These indicators are positive for the development of nano-economy as demographic changes in population is one that actively affect the life of the individual. Thus, the fertility of the population is determined by the ability to have children and to rear worthy members of society. This training takes place in the educational system of the country, we will consider further.

Usually educational system consists of pre-school, secondary and university education. Overall pre-school education in Finland lasts for 6 years in the Finnish children. Like Singapore preschoolers Finnish children attend educational centers and kindergartens [www.expat-finland.com]. These educational institutions may be municipal and private. Finnish parents have the right to choose on preschool education and it should be noted that 98% of children of appropriate age attend kindergartens. Education Programs provide employment for the whole day and part-educational den.70% children attending educational institutions with a full day.

Nanotechnology inventors formed in kindergartens and in working mothers, so in Finnish families are all prospects for training and transfer of skills to children in the future is the potential for the development of high technology.

When going to school to learn a little fin in elementary school for 9 years and three years in high (secondary) school [www.classbase.com]. Primary school is universal school, which lasts from 1st class to 9th, when the baby of 7 years come to this school and studying for 16 years. The first four years of primary school education is for the individual programs and students acquire skills sotsiologizatsii. After primary school student a certificate.

School is a specialized and can be professional, which taught kids from 16 years to 19 high school classes are small - 20 people, friendly atmosphere and free travel in the municipal transport. In the Finnish high school after graduation also provided a certificate (certified diploma) and child acquires competence for further studies at university or polytechnic institute.

Higher education in Finland is characterized in that it consists of universities and polytechnic institutes [www.euroeducation.net/prof/finco.htm]. Thus, the Ministry of Education and Culture of Finland has 14 universities, two of which are based state and the rest - a public corporation. Total in Finland there are 170 000 students to universities. Since 2010 universities have been separated from the state, but the state continues to initial funding of universities. State funds make up 64% of the budget of universities. The remaining funds come from external (usually private) donors.

In that the Ministry of Education and Culture of Finland, there are 24 polytechnic institutes. Since 2015, these educational institutions are independent education centers that combined with practicing companies of the country. Today polytechnic education is in the process of reform. The number of students of polytechnic institutions in Finland in 2012 was 140,000 people.

The higher education system of Finland provides for three cyclical programs: The first cyclical program - bachelors (3 years at universities, polytechnics to 3.5-4.5 years); second cyclical programs - Bachelor specialized training in foreign language (usually English); third-cyclical programs - training PhD students.

There are data [www.tilastokeskus.fi] Statistics of Finland that the total number of students (157,436 people) 53.1% - women. In sectors such as administration and commerce, health and social services sector, culture and humanitarian and educational sectors are female students - more than 50%. Technology and transport, renewable resources sector study increasing number of men. A gender perspective is one that decided in favor of women and female influences the child, she educates. Yes, the baby's economy, beginning in kindergarten, developed in higher education and child turns to a full member of society and an employee who develops the economy as a whole.

Higher education in Finland is that has developed a system of pre-school and secondary education. Higher education is a highly specialized and aimed for work in different sectors. The system involves training doctors PhD implementing high technology and influence the development of knowledge and nano-nano-making.

Baby in the US economy develops efficiently, because it is a country of many opportunities and prospects. This country is attractive to people from different countries. The demographic situation is characterized by the following data [www.infoplease.com]: in 2015 a total population of 281,421,906 people, including 138,053,563 (or 49.1%) - men, and 143,368,343 (or 50.9%) - women. The age structure of the population is also colorful: the largest segment of the population accounted for by age from 25 years to 34 - 14.2%; in age from 35 to 44 years - 16.0%; in age from 45 to 54 years - 13.4%. That person aged 25 to 54 years is the basis of population. The average age of the US population - 35 years. This is a rather young population has enough potential.

Natural population movement is shown by the following figures: in 2012 births in the US were 3,952,841 people, and died in the same year - 2.513 million persons. As you can see, there are more births than deaths, it confirms the positive demographic situation in the country. And also shows that young potential parents have every opportunity (physiological, physical, psychological and mental) on the birth of a child.

As we noted, the United States is a country of immigrants. Thus, according to 2015 the number of immigrants in the United States amounted to 1,051,031 person [www.dhs.gov]. Immihrovanyh largest number of people came to this country from other states of America: 439,228 people. Somewhat fewer immigrants from Asia (405,854 persons) and Africa (98 677 people). And the traditional supplier of immigrants in the US sent 90,789 visits Europe in 2015. Living standards and requirements for training and education provide that child immigrant to the United States may have more prospects than in their country and to develop their skills and competencies so as to become a progressive member of American society and promote the traditions of the nation that people of immigrant represents in new world. Of course there are negative aspects of immigration, but the US progressively cope with them.

Baby economics begins with pre-school education and training. In the United States come to school at the age of 6-7 years, before the kids are educated at home or in kindergarten. The number of children attending preschool is growing, but not as large as in Singapore or Finland. So in 2013 the number of children aged from 3 to 5, visiting the children's institutions amounted to 65% of all children of this age. Statistics confirms [www.nces.ed.gov], that in 2013 a three-year children attending child care was 42%, four years of children - 68%, and five-year - 84%.

In 2011, parent education young Americans who attend kindergartens had the following structure: less than higher education - 10%; higher education - 21%; professional college level - 32%; bachelors - 20%; education more than Bachelor - 18%. The ability to transfer their knowledge and increase their is also a factor in the development of the baby-economy, which in turn affect global markets and the development of high and nano-technology.

Note that the US population is to have a sufficiently high level of income per capita. Thus, the statistics shows that parents with income that is below the poverty line is 26% of income, which is 100 and 199% above the poverty line - 22% of revenues, which is 200% or more above the limit - 51% . Thus, parents can pay garden, with a high level of education. Overall value for money are important when choosing a school for the little American.

Secondary education in the United States provides the following levels: elementary, middle, secondary and post-secondary (vocational) education. There are statistics [www.nces.ed.gov], which defines that the US secondary schools of all levels in 2016 were included 7,613,600 people, including elementary school - 556200. In public schools taught US 5,037,850, among which, in its all in schools for children up to 8 years studying 35402 babe students from 9 to 12 years, there were 14983. in private schools enrolled 5235 people. And vocational schools enrolled 205,160 students. It should be noted that very popular in the US is education in Catholic schools. Thus, in 2013 these schools were trained 2,055,140 children in schools and other religious directions - 2,030,930 people. Assignment of children to biblical truths through education is a positive factor in the education of identity and sotsiologizatsii.

Productive secondary education is the basis for study at the university and university education in the US has its own characteristics and common features inherent high school education centers worldwide. Thus, the US higher education system is structured [www.aacc.nche.edu]:

1) Community College - a two-year institutions, also known as technical or junior college. This 1200 two-year institutions in the United States, which trained 11 million. Students. For those inherent colleges may transfer to universities for undergraduate education and start a career after college;

2) four-year colleges and universities that produce Bachelor (Bachelor of Arts and Bachelor of Science). These institutions are also preparing specialists with higher education, namely, bachelors, masters and doctoral students in fields such as law, medicine and business. In the US there are more than 3,300 accredited regional colleges;

3) Educational professional masters program, carried out in universities in the country;

4) doctoral program to train PhD.

US universities are different in terms of teaching. In the US does not have a separate system of accreditation of higher education institutions. Each university has its own autonomy and only the name of the University is an indicator of the quality of education. Each year seems ranking universities in the US, the last in 2015 is as follows (top 10 universities) [www.statista.com]:

1. Harvard University	98% (level educational institution)
2. Princeton University	97%
3. Brown University	96%
4. Columbia University	96%
5. University of Norte Dame	96%
6. University of Pennsylvania	96%
7. Yale University	96%
8. University of Dortmund	95%

- | | |
|---------------------------|-----|
| 9. Duke University | 95% |
| 10. Georgetown University | 95% |

US universities do not overlap with the high school and there is a gap between secondary and higher education. However, the prestige of some universities require students to study in secondary schools with high efficiency. American education in general, aims to practice and scientific developments made at the application level. However, basic science also has supporters and government subsidies for the implementation of such studies. The feature of US higher education is also teaching at Master with a practical orientation.

Conclusions. So the baby's economy is a factor and a consequence of the global market of high technologies. Depending on the demographic situation developing systems of different levels of education and entry into adulthood and sotsiologizatsii. Man in adulthood may be researcher, engineer or technician to be an entrepreneur and to exercise their skills and efforts. Entrepreneurial talent is brought up in a family and educational institutions, which leads to the formation of economically active individual. And the more these individuals better economically developed society and its branches.

For Ukraine it is necessary to use the experience of Singapore in the formation of pre-school education at a tender age when a child is brought up in special pre-school education and this is very popular. School is a specialized and one which forms the competencies and translates into high school with the received research skills. Higher education is a popular and common among young people appropriate. High school associated with industrial and other enterprises and prepares professionals is specifically for them.

The experience of Finland could also be useful for Ukraine, for example, the average education of the country is also one that focuses on competence and children aged 10-14 years to pass those classes that are specialized. Higher education is also built on training for industries such as forestry, management, medicine and so on.

The experience of the United States should use the practice of research areas of universities. Certainly Bologna system involves the creation of uniform conditions for universities, however, as in the US, would be desirable to provide a certain autonomy of universities is to research areas and opportunities for closer cooperation with the business sector.

Baby's economy has developed in order to create conditions for the cultivation of professionals, researchers and innovators who would become the replacement of senior scientific generation. Today is the fifth class of technology transfer and innovation in modern conditions of world economy and individual countries it will the next generation of scientists and could thus affect global markets and high nano-technology.

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