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## INVENSMENT, WORLD ECONOMY AND POOR COUNTRIES

### Abstract

*World income is unevenly distributed among developed and rich countries on the one side and the poor and less developed countries on the other side. Poor countries in an attempt to develop its economy faces multiple barriers, the most important population growth, deficiency of resources and capital, shortage of investment in human capital traditions, investment in infrastructure, a low productivity in agriculture and conflicts. Poor countries are trying to develop their economies exporting primary goods order to achieve the benefit of export revenue for the procurement of capital goods. However, fluctuations in the real prices of primary export goods on the world market that can range up from to 40%, disabling poor countries to fully substitute the export of primary goods import capital equipment, especially when exports focused on one primary good. To avoid decreasing a trend in real prices and large price fluctuations around this trend, the poor countries, (primary producers) can only strengthen their economies and increase economic growth of the within global economy, pooling, in order to ensure the stabilization mechanism for certain primary good. Less developed countries consider that achieve greater developments before focusing on industry than on primary production. That is why those due to a shortage of capital, unfavorable resorting to borrowing. Many poor countries cannot require repayment of debt and the rescheduling. Therefore, it is economically justified to those its economic development based on unused comparative advantages, structural adjustment through increased investment, productivity and efficiency. Poor countries require help through international transfers, because they consider that many countries have enriched the colonial exploitation of their resources.*

**Key words:** *poor countries, capital, economic growth, debt reprogramming, aid*

**JEL Clasificitation:** F43,O12,E24

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## ИНВЕСТИЦИЈЕ, СВЕТСКА ПРИВРЕДА И СИРОМАШНЕ ЗЕМЉЕ

### Апстракт

*Светски доходак се неједнако распоређује између развијених и богатих земаља с једне стране и сиромашних и мање развијених земаља с друге стране. Сиромашне земље у покушају развоја своје привреде наилазе на многобројне препреке од којих су најважније раст становништва, дефицитарност ресурса, недостатак капитала, недостатак инвестирања у људски капитал, отиције у инфраструктуру, ниско продуктивна пољопривреда и конфликти. Сиромашне земље покушавају да развију своје економије извозом примарних добара како би оствариле корист од извозних прихода за набавку капиталних добара. Међутим, колебљивост реалних цена примарних извозних добара на светском тржишту, које се крећу и до 40%, онемогућавају сиромашне земље да у потпуности супституишу извоз примарних добара увозом капиталне опреме, посебно када је извоз усредсређен на једно примарно добро. Да би избегле опадајући тренд реалних цена и велике флукутације цена око тог тренда, сиромашне земље, (примарни произвођачи) једино могу да ојачају своје економије и повећају привредни раст, у оквиру светске привреде, удруживањем, ради обезбеђења стабилизационог механизма за одређено примарно добро. Мање развијене земље сматрају да ће већи развој остварити усредсређивањем пре на индустрију него на примарну производњу. Због тога оне, услед недостатка капитала, прибегавају неповољном задуживању. Многе сиромашне земље, не могу да отплате дуг и траже репрограмирање. Због тога, економски је оправдано да оне свој привредни развој базирају на неискоришћене компаративне предности, структуралним прилагођавањем кроз повећање инвестиција, продуктивности и ефикасности. Сиромашне земље захтевају помоћ путем међународних трансфера, јер сматрају да су се многе земље обогатиле колонијалном експлоатацијом њихових ресурса.*

**Кључне речи:** сиромашне земље, капитал, привредни развој, репрограмирање дуга, помоћ.

### Introduction

The current world economy, placed through world trade and finance, adjusted to the needs of rich countries and international financial and corporate capital. In the function of these interest groups is the leading international institutions World Bank, International Monetary Fund and the World Trade Organization. These institutions apply economic policy on the world, adopted by the Washington consensus. This policy is exclusively focused on achieving the highest possible efficiency. Social and environmental consequences of this policy are ignored. Issues of social justice, unemployment, poverty and threats to the environment are left to the states and their organizations.

The implementation of global policies on the principles of the Washington Consensus endangered the many countries and leads them in a difficult economic

and social situation. The focus on this policy to prevent inflation and savings has not brought the expected results. Advice poor and some transition countries have influenced the drastic decline in their production and living standards. This led to the lagging behind of economic development. Less developed countries is recommending the purpose of restrictive monetary and budgetary policies instead of anti-cyclical policy to encourage economic growth. Insisting on the budget balance and the decreases of public expenditure, even in a period of stagnation or recession, has had devastating consequences of economic development and social situation. The policy of high interest rates has exacerbated, already sensitive situation and affected the excessive growth of foreign debt of poor countries.

The consequences of such policies are even greater stratification of world society into rich and poor. World income is unevenly distributed among the developed and rich countries on the one side and the poor and less developed countries on the other. The new world economic consensus is deepened and widened the gap between rich and poor. From 1990 to 2011, the number of extremely poor has expanded on 217 million to 415 million people. Average life expectancy, the population on these environments, it is 56 years, illiteracy 41% and the daily wage is less than \$ 1.25.

The causes of poverty is the consequence of the rest of the inherited colonial of bondage, fragmentation of space on a small number of states, with arbitrary boundaries, which are chronic sources of tribal conflict, mostly around its rich natural resources, population growth, insufficient of natural resources, the deficiency of physical and human capital, low productivity, customs and lack of investment in infrastructure. Then, the exploitation of natural resources by foreign companies that did not interested to accumulate and finance economic development already achieved profits reinvested and guides to other parts of the world. Not unusual collaboration, foreign multinationals company, with corrupt political elites on common interests and against the interests of their own countries and population.

The poor and less developed countries are trying to develop their own patterns of economic growth, using natural comparative advantages and benefits from the world environment. Many of them have attempted, through international trade, exports to primary goods; provide enough financial resources for the procurement of capital goods. Fluctuations in prices of primary products, downward, to the world market are major obstacles to development through substitution of imports with exports. The problems of price fluctuations, less developed countries are trying to solve, by association, through building stabilization mechanism for certain primary good. But trying association for other primary goods failed. A number of manufacturers, their indebtedness, and circumvention of the agreement and the time constraints on the agreement are the major reasons for the failure.

Less developed countries are considered to be greater development to achieve the transition to industrialization using a comparative advantage than the substitution of imports by exports of primary goods and products. Countries that have implemented the advice of leading world institutions and strictly applied their rules have not achieved economic development and industrialization. Countries that are acted precisely contrary to, such as China, Hong Kong, Singapore and others, opening their economies and the leading role of the state have achieved an enviable economic growth and exit from poverty.

Less developed countries, deficiency of capital, they resort to borrowing on the financial markets. Credit conditions were unfavorable. The increase in interest rates over 20%, after the postings does not pay a debt of Argentina, eighties, foreign debts of less developed countries have increased enormous. Service the debt is difficult. It has drawn world attention to a serious approach to resolving debt problems.

Many less developed countries, they cannot pay off a debt. They are forced to seek debt rescheduling or write-off. Creditors under pressure on of their governments and international institutions, in part, often are written off the debts of heavily over indebted countries.

Less developed countries often receive help. But they make remarks that such aid be insufficient. They considered that the rich countries have enriched colonization, exploitation of their natural resources, inexpensive labor force and reinvested in their own country. Rich countries now need to give them that part from their compensation. They want their rich countries open their markets decrease or eliminate high protection measures and do not intentionally cause price fluctuations of their products.

### The distribution of income and welfare

The world has a population of 7 billion people. Of this population, 80% live in developing countries, 15% in developed economies, and about 5% in countries in transition. Contrary to the territorial distribution of the population, distribution of product of the world is completely different. The richest 20% of the world population receives more than 60% of income in the world; the poorest 20% receive less than 2% and the poorest 60% receive less than 6% of world income. ( McConnell, 2012, p. 39W-2)

Table 3. Peer capita 2013 (GNI PPP per capita \$US)

Group of countries	Word	Developed country	Middle-income country	Least developed country
Per capita <sup>1</sup>	14.432	40.779	9.558	1.960
Life expectancy <sup>1</sup>	71	79	70	62
Illiteracy (2005-2014) <sup>2</sup>	15	<0,5	17	39

Source1. *The Little Data Book, World Bank Group, 2015*

Source 2. *Calculated on the basis of data from Education for All 2000-2015, (2015) Achievements and Challenges, EFA Global Monitoring Report, UNESCO Publishing*

GDP per capita, shows the unequal distribution of income in the world. In poor countries in 2014 lived 40% of the population which has achieved a \$ 1,960 per capita income. In rich countries, the average incomes per capita were \$ 40,779. The highest per capita were achieved in developed economies and the lowest in extremely poor countries. The difference is drastic which indicates level of welfare of the world.

### Economic growth

In low-income countries, it is noticeable improvement in the situation since 1965. Gross domestic product recorded a higher growth rate than the growth rate of

developed countries. Despite the evident increase in the GDP the gap between rich and poor countries is expanded even further.

*Table 4. The growth gross domestic product*

Group of countries	1965-2000	2007-2010	2011	2012	2013	2014
High-income countries		0,6	1,7	1,5	1,2	2,1
Upper-middle-income countries	2,6	5,9	5,9	5,1	4,6	5,3
Lower-middle-income countries	1,6	6,1	5,8	4,4	4,7	5,0
Low-income countries	2,2	6,1	6,2	6,0	5,7	6,1

*Source: The Little Data Book, Word Bank Group, 2015*

Increasing growth of less developed countries is the result of improving global and regional environment of relatively high commodity prices, reduced infrastructure limitations and increasing investment and trade cooperation with the emerging economies. (Word Economic Situation and Prospects 2014, p. 8) In 2013, there has been some of this slowing economic growth of a tendency towards improvement. Some improvement depends on changes in global demand, easing monetary policy and stabilization of international capital flows. The increase in private consumption, increase exports and structural adjustment in many economies middle of the poor and poorest countries influenced to an increase in growth rates.

## **The development of the export of primary goods**

Many less developed countries through trade with primary products trying to get out of poverty. Trade brings benefits. It leads to specialization based on comparative advantages. Many less developed countries dispose the most land. Some have minerals and other goods. In less developed countries, it is best to take advantage of the global economy for their own development if exported primary goods that require relatively intensive land use.

Less developed countries, mostly imported non-durable (soft goods) to consumer goods, agricultural products, such as cocoa, coffee, cotton and sugar, and minerals (hard goods) such as copper, aluminum, etc. Underdeveloped countries are constantly trying to exploit its comparative advantages in soil and minerals and achieve economic growth. Through trade, they tend to export primary products on the world market, achieved enough income how can we to import the necessary fixed capital and other resources.

Low income countries have dramatically increased their participation in world trade of the last two decades, with its share in total world exports from 21% to 43% and export growth exceeded the growth of output in these economies in the period 1992-2008. (Hanson, 2012, p. 41-46).

*Table 6. Export goods and services (% GDP)*

Group of countries	1990	2000	2013
High-income countries	19	25	30
Middle-income countries	19	27	30
Low-income countries	12	18	22

*Source: The Little Data Book, (2015) Word Bank Group,*

## Prices of primary products

Market of primary goods is unstable with large price oscillations. Fluctuations in price by 30% or more for a period of one year or more are not uncommon. These markets are unstable and dangerous for all exporters of primary goods. Especially uncertain expected export revenue. Export revenue depends on the export prices on the world market. Unstable export prices make it impossible the government to obtain the expected stable revenues for the execution of development programs in the areas of education, health and imports.

*Table 7 World price primary goods 2008-2014*

Good name	Word prices of primary goods 2008-2014				2012-2014 versus 2003-2008
	2008	2010	2012	2014	
Cocoa	32,2	8,5	-19,7	23,7	38,8
Sugar	26,9	17,3	-17,1	-1,8	86,1
Rubber	16,9	90,3	-30,5	-21,8	62,4
Aluminum	-2,5	30,5	-15,8	-5,0	-11,3
Gold	25,1	26,1	6,4	-8,5	163,7

*Source: Trade and Development Report, 2014, untcad*

Prices of primary products, the less developed countries for decades have shown a decreasing trend except for crude oils and gold. The cartel OPEC holding crude oil supply under control and the price of gold is artificially controlled. The decrease in commodity prices indicates that a higher supply than demand in the world market. Less developed the countries that export to the developed countries depending on economic trends in these countries. The recession in developed countries leaves visible squares in the exporting country. The demand for primary and other export products is declining. The fall of demand for primary goods has as a consequence decrease of their prices. During the recession 2007-2009 world zinc prices decreased from \$ 2.02 to \$ 0.49 per kilogram and the price of copper from \$ 4.05 to \$ 1.40 per kilogram. The decrease of prices and the decrease of demand for zinc and copper have been severely affected the decrease in of export revenue in exporting countries. Technical and technological advances in the production of new materials, like rubber and plastics, have contributed to the decrease in prices of many traditional raw materials in industrial countries. The largest exporters of primary goods are less developed countries.

Trade performances of the less developed countries are closely related to the dynamics of prices on the world market. Therefore, the fluctuation of prices of primary



goods the key issue for them. High fluctuations in prices of primary goods in the world market are a long-term phenomenon. In some primary, soft and hard goods, due to the perfect concentration of exports, prices are high fluctuations ranging between 30-50% on a monthly basis. Less developed countries have never been to clean when it comes to world prices of primary goods. Their export earnings depend on the price fluctuations. They are not always as safe as will achieve export earnings. This uncertainty hinders them in realistic planning of capital goods imports.

The protectionist agricultural policies imposed by developed countries are one of the causes of the decrease in prices of agricultural products. The World Trade Organization and the General Agreement on Tariffs and Trade excluded decrease in customs duties in agriculture. Whenever the less developed countries succeeded in increasing the supply of agricultural products of the world market, the surplus had to be exported and sold in countries with less developed markets. Additional services at considerably decrease market led to a decrease in prices of agricultural products. Greater access to agricultural products on the markets of rich countries would certainly have a different impact on prices. Therefore, less developed countries, with the right to complain when it comes to strict control and protection of exports to the developed and rich countries.

### Concentration of exports

Concentration of exports expresses the degree to which the exporting country concentrated on a few products or small number of trading partners. (Export Dependence and Export Concentration, Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty, 2012, p. 24). Some less developed countries in the world market, exporting a small number or only one primary product. Developing countries and less developed; had, because of the narrow range of primary products, the tendency to increase the concentration of exports. Despite an increase in the share of GDP, less developed countries in world trade, their exports are increasingly concentrated on a narrow range as compared to developed countries. (Export Dependence and Export Concentration, Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty, 2012, p. 25)

*Table 8. Concentration of exports and fluctuations in export earnings 2002-2008*

Level of development	Export concentration		% concentration	Relative deviation export earnings
	2002	2008		
Developed countries	0,07	0,06	-11,6	26,4
Developing countries	0,11	0,14	26,7	38,6
Underdeveloped contrived	0,31	0,54	71,2	52,6

*Source: Export Dependence and Export Concentration, Towards Human Resilience: Sustaining MDG Progress in an Age OF Economic Uncertainty, 2012*

The data onto the table show the volatility of the relationship between the concentration of exports and export revenues. The concentration of exports is strongly associated with an increase in volatility in export earnings. A higher degree of export



concentration leads to relatively large deviations from exports. Underdeveloped countries have the highest ratio of the concentration of exports (row 3) and the largest relative variation in exports. Research by UNCTAD, with a sample of 133 countries for the period 1996-2008 shows that increasing the concentration of exports by 1% leads to an increase of 0.5% in exports. Less developed countries that export a primary good had great development problems.

### **Schemes stabilization mechanism in prices of primary goods**

Primary producers may, in the framework of world trade achieved to benefit. The best example is members of OPEC countries. They were organized through joint action and determine the agreement's oil supply. In this way, they maintained a stable level of oil prices on the world market, and do not allow larger fluctuations. Form of organization OPEC should set an example, other countries producers of primary products, in order to organize and undertake jointaction. However they have no political power and are often faced with large purchases of monopoly. Association for producers of primary products would certainly lead to a stabilization of the prices of their goods and the stability of sources of export revenue.

Fluctuating export revenues, according to the permanent income hypothesis, can encourage savings. Unstable export may not be harmful. When the world markets are saturated primary products, the excess can be redeemed in commodity reserves and thus decreases the bids price and maintain the desired level. When demand increases, supplies with reserves can be exported and fill in the missing quantities of the market. The cost of storage, a large number of small producers and the administrative difficulties are limiting factors agreement on joint action on the global market of primary products. There are times, in some poor countries, where export-oriented industries do not spill over to the domestic economy. This is the case of enclaves in poor countries.

They dispose of agricultural plantations, mines and minerals are owned by foreign companies. Foreign companies use latest capital goods in intensive exploitation. These industries employ little labor and achieved profits accumulate abroad. These enclaves are isolated from the domestic economy, especially in sub-Saharan Africa and those countries have no use for revenue. The governments of these economies could achieve fiscal links to these industries and that tax money to finance their economic development.

Less developed countries have tried to organize mechanisms for stabilization of prices of primary goods. Countries in Africa, in the interwar zone, with primary products such as tin, rubber and tea are organized stabilization mechanisms for these products. Producers these primary products of each country were relatively few in number and produced goods are almost all gone to exports. Export is determined quotas that have changed from time. The manufacturers of these primary products are able to keep prices at the same level.

Many international agreements on during the nineties have become unsustainable, and many have collapsed. Agreement on cocoa production, which began in 1972, disbanded in 1988, they are no longer able to finance inventories. It is similar with other international agreements, for example, sugar, wool, coffee, tin, etc. Besides, effort, less

developed countries, in general, failed to organize the pattern of OPEC. The governments of these countries do not have several large oil fields, but they are forced to engage a large number of small producers of primary products. They are very difficult to organize. For example, why wheat producers cannot be organized in the United States?

## Industrialization

Development through specialization of production of primary products based on the comparative advantages not achieved the expectations of the less developed countries. Therefore, they have focused on industrialization. The arguments about industrialization are that it will facilitate a faster technological progress, decrease unemployment, increase income, to ensure stable export prices and income, encourage greater and acceleration-multiplier effects and contribute to the balance of payments.

*Table 9. The added value in the process of industrialization, the degree of industrialization and income groups*

Group of countries	Add production value (base 2005, \$ billions)			The share of the value produced%		
	1992	2002	2012	1992	2002	2012
World	4,960	6,590	8,900	100	100	100
High income industrializing	175	273	495	19	18	16
Upper middle income industrializing	57	91	163	6	6	5
Lower middle income industrializing	657	1,140	2,410	73	75	78
Low income industrializing	15	21	41	2	1	1

Source: Industrial Development Reports, Sustaining Employment Growth: The Role of Manufacturing and Structural Change, 2013, United Nations

The process of industrialization, less developed countries has been able to implement in two ways: industrialization through import substitution and industrialization which is oriented on exports.

Selection of industrialization through import substitution suppresses the principle of comparative advantage and decreases world trade. Import substitution is a replacement of imported goods to their domestic production of protection for the form of higher customs tariffs or import quotas. (Beg et. 2005, p. 617) Less developed countries have used very high rates of effective protection. Customs rates in some countries, such as India, Pakistan, Argentina and Nigeria ranged between 100 and 200 percent. High customs tariffs and quotas aimed to divert domestic resources, of primary products, which have had such a comparative advantage in industrial production for which they have a comparative disadvantage. High protection and subsidies have contributed to the excessive volume of capital-intensive technology in the industry.

Capital intensity is quickly exhausted the lack of investment funds, with which they are disposed of under-developed countries, and opened a small number of new jobs. Due to a small number of new jobs, the annual population increase and employment rates in the agriculture and service sectors. The unemployment problem is only exacerbated.

Expectations of higher salaries in industrialized societies have encouraged migration from rural to urban, which led to explosive situations. The priority was to build new plants and buying new plants. Lack of funds of the purchase of necessary reproductive material and energy from abroad has led to the emergence of excess capacity.

## **Borrowing to growth**

The traditional source of funds of financing higher exports than imports is borrowing on the world market. Terms of borrowing were always unfavorable. Less developed countries did not have sufficient sources of domestic financial capital for investment. Therefore, they were forced to borrow under unfavorable conditions. Borrowing, they are supplemented lack of domestic investment capital due to low savings.

Repayment of debts, under-developed countries, has reached large proportions. More funds go to developed countries, in the name of debt repayment, but what is the inflow of capital in the form of loans and aid to less developed countries. What a paradox. Instead of the rich to the poor, financial capital, because of the large external debt goes from the poor to the rich.

The reason for the appearance of long interest rates is low, in the seventies of the last century. As long as real interest rates negative debt does not cause major damage. Less developed countries have easily borrowed and in some ways were subsidized by their creditors. To the pays the debts enough to sacrificed real resources.

Underdeveloped countries are mainly borrowed in the hope of foreign loans to accelerate the economic development and export. Increasing economic growth and exports will enable repayment of foreign debts. However, in many cases, this scenario did not play. Many less developed countries after years of borrowing became even poorer. They have got into economic difficulties from which they can hardly go out without international assistance.

## **Reprogramming or write off the debt**

Less developed countries that have fallen into economic difficulties repayment of foreign debts have three options; you do not pay the debt, to seek rescheduling and cancellation of debts.

Do not pay the debt, it means a refusal to creditors generally pays off the debt. This is perhaps the easiest way but not comprehensively. What is the price of it? Governments of creditor may militarily intervene but it is a rare case. In the past and it happened. The United States sent troops in 1904 to the Dominican Republic government to force the payment of debt, French and British troops were forced Egypt in 1876 to pay the debt. Today the foreign debt collects no military force. There repressive methods of collection for the same or similar effects, which lead to a greater or lesser loss of real sovereignty of debtor countries. Usually, debt collection measures are implemented pressures on international negotiations, embargo, confiscation of assets abroad, limiting capital flows and the like.

Debt reprogramming is commonly applied method of the relaxation of repayment of foreign debts. The creditors accept debt reprogramming. Reprogram changing debt

repayment plans but does not change the current amount of debt that must be paid. If the economy is growing debt reprogramming is a good strategy to get out of debt bondage.

Write-off of debt is a measure that applies of certain specific cases. Most economists believe that debt cancelation should not be made conditional on specific pressure or blackmail. Iraq's Paris Club wrote off 30% of debt in 2004 in the amount of 40 billion US \$ with the conditions to pursue the full privatization and liberalization of the economy. A similar requirement is laid, Serbia and Nigeria.

## **The development of the structural adjustment**

The economic crisis of the year 2008, after decades of silence, launched a much public debate on development. How to maintain growth? How to create permanent jobs? How to generate revenues and achieve accumulation? How to eradicate poverty and prevent social polarization?

Economic growth, less developed countries can achieve the structural adjustment of its economy. In principle, structural adjustment is governed by the terms of the supply and demand for products that respond to each other. (Industrial Development Reports, Sustaining Employment Growth: The Role of Manufacturing and Structural Change, United Nations, 2013, p. 3)

Less developed countries do not make full use of its built large capacities. They are not poor because of this. They are poor because of their potential product of a very low level. To maximize the potential for the product they need investments in human and physical capital. But sometimes that is not enough. They were in control of spending in order to increase investment. But it did not produce the expected results. Investments were eventually dropped to zero the economy stagnated.

Increasing productivity, less developed countries, do not have to increase from an increase in human and physical capital. One can increase productivity through better utilization of existing capacity and more efficient use of available resources. Countries that have opened their economies, and involved in global processes, achieved greater success than countries that have implemented protectionist measures.

Countries that have adopted structural adjustment, particularly in transition economies, have achieved greater economic success than before. Countries that have committed to reforms and believe in own prospects easier to accept structural adjustment and have a vision improve his welfare.

## **Help from advanced economies**

Some argue that the simplest and most efficient way to help developed economies, less developed countries, so as to reduce trade barriers. Even, and less developed countries consider that the contribution that rich countries can provide poor countries is just free access to their markets. Trades and not mercy. This would allow less developed countries to sell their products of trade barriers, achieve higher revenues. The requirements of these countries, for the elimination or mitigation of barriers to trade in primary goods and labor-intensive industrial products, such as clothing, footwear, and food industry are

justified. For example, customs tariffs are higher for imports of chocolate than for cocoa. This is a group of products for which some countries have a comparative advantage.

Some economists recommend that advanced economies, provide assistance to the less developed countries accepting the seasonal or temporary workers in their countries to work. Temporary or permanent migration allows the departure of redundant workers from less developed countries. Through emigration, they raise capital and land per worker staying. Money transfers to their families in their home country, they would improve their incomes. Discourage the sale of military equipment and weapons to underdeveloped countries. By purchasing military means, the already low consumption is diverted from infrastructure and education and increase tensions.

Public aid and grants, and technical assistance can play a major role in ensuring miss savings and investments. Many less developed countries lack the infrastructure needed to attract domestic and foreign capital. Financing infrastructure, foreign aid, can motivate a better flow of private capital.

## **Flows of private capital**

Private capitals advanced economies have significantly gone in less developed countries. The structure of investment and lending has changed. We no longer provide loans to governments but in the form of foreign direct investment. The main private investors and lenders are private companies and individuals. Direct investments contribute to development through the construction of new factories or the purchase of multinational companies or firms of the least developed countries. Many countries are seeking foreign direct investment. They see their chance to hire its workforce, to improve workers' wages and increase physical capital. The benefit of direct investment is new technologies, new knowledge and management skills. Unfortunately, the flow of private capital in the world is quite selective. The flow of private capital, after the economic crisis of 2007 has dropped significantly in the world. For example, in 2014, total external flows to Africa were estimated at USD 181 billion, 6% lower in nominal terms than in 2013. (African Economic Outlook, 2015, p. iii)

## **Conclusion**

Less developed countries that have not changed advice the world's leading institutions, have opened economy and harmonize with globalization, have achieved obvious results of fighting against poverty.

Their economies have achieved a certain degree of improvement in the quality of life and welfare. The especially, countries, Southeast Asia, China, India, Vietnam, Singapore, etc. countries, Southeast Asia, China, India, Vietnam, Singapore, etc.

Other less developed countries, in particular, the countries of South Asia and the countries south of the Sahara have become even poorer. Even extremely are poor's countries. Part of the population is not involved in world civilization. The situation is extremely alarming.

However, development opportunities, other less developed countries, except for areas south of the Sahara and East Asia, in terms of neo-liberal globalization are

not hopeless. Some Southeast Asian countries, especially China took advantage of globalization to their advantage. These countries have opened certain areas to the free operation of markets. They have approved the free flow of goods, capital, labor and free enterprise. The state has directed regulated and controlled economic development. Country's national development strategy and the control of natural resources and protect the long-term potential for national and social interests. The aim at the growth was the increase DDP already increasing education, health care, living standards and improving the social situation. This is the path and experiential model of development of less developed countries to exit the poverty zone.

Viewpoint neoliberals that international trade benefits everyone seem a myth. Fluctuation of prices of primary export goods less developed countries, up to 40% annually in some cases, down, is the most obvious proof. On the other hand, highly subsidized agricultural products in developed countries, on the world market are cheaper and more competitive and stifle export of agricultural products of less developed countries. High import customs tariffs rich countries and other measures make it difficult to import agricultural products of less developed countries. Prices of agricultural products are falling, revenues are reduced, and the vicious cycle of poverty becomes a labyrinth. Decreased revenue from preventing imports is greater than the total aid to less develop countries receive.

The liberalization of foreign trade opened the gates, the export of cheap manufactured products of less developed countries. This led to a slowdown and the blockade of the process of industrialization.

Borrowing to growth is not much helping, regardless of some initial successes. Debts are due to market disruptions and rising interest rates reached high proportions. Their annual repayment is larger than the total inflow of foreign capital in the form of grants and loans. There was a contradictory situation. Instead of capital going from the rich to the poor, he goes in the opposite direction. Therefore, less developed countries increasingly emphasize insufficient assistance.

The rescheduling and cancelation of debts have not yielded the expected results. Less poor countries see their way out of poverty by opening the rich countries' markets for their products. The decrease of customs tariffs, fewer subsidies, and stable price mechanism is the demands of rich countries.

Economically justified to less developed countries open up their economies and economic development based on the unexploited comparative advantages, structural adjustment through increasing investments, productivity, efficiency and integration into global trade flows.

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## CLUSTERING AS MODERN CONCEPT OF REGIONAL DEVELOPMENT (EXPERIENCE OF JAPAN)<sup>3</sup>

### Abstract

*In the modern conditions clustering concept became one of the most popular modern trends, especially in the Asia-Pacific region. Japan has one of the most successful experience of cluster policy. It has a great variety of different forms of clusters in its regions: technology parks, industrial parks, science parks and others. Nowadays, Japanese government provided a number of Business Startup Support Programs for supporting innovation sectors in Japanese regions. This measure became one of the most successful in regional development. Japan is actively implementing a number of programs for development of scientific and technological cooperation with private enterprise and science centers. Nowadays, clustering also became one of the main sphere of New Economic Growth Strategy of Japan.*

**Key words:** regional development, clustering, clusters, innovation policy, industrial park, Japan

**JEL classification:** O3, O2, F5

## ФОРМИРАЊЕ КЛАСТЕРА КАО САВРЕМЕНОГ КОНЦЕПТА РЕГИОНАЛНОГ РАЗВОЈА (ИСКУСТВО ЈАПАНА)

### Апстракт

*У савременим условима концепт кластера је постао један од најпопуларнијих трендова, посебно у азијско-пацифичком региону. Јапан по искуству има једну од најуспешнијих политика кластера. Она је заснована на великом*

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<sup>3</sup> The results of this research were achieved within the frameworks of the governmental assignment of Russian Ministry of Education and Science in the sphere of scientific research during the researching assignment # 26.1478.2014/К “The structural transformation of Russian Economy through the integration installation in the industrial markets of Asia-Pacific Region”

*избору различитих облика кластера у свим подручјима: технолошки паркови, индустријски паркови, научни паркови итд. Сада, је Јапанска влада обезбедила низ почетних пословних програма за пружање подршке иновационом сектору у јапанским регијама. Ова мера је постала једна од најуспешнијих у регионалном развоју. Јапан активно спроводи низ програма за развој научне и технолошке сарадње са приватним предузећима и научним центрима. Данас, су кластери постали један од главних области нове стратегије економског раста Јапана.*

**Кључне речи:** регионални развој, груписање, кластери, иновациона политика, индустријски парк, Јапан.

## Introduction

Nowadays, the economic activity of the most part of industrialized countries has the growing impact of globalization and internationalization - processes which are fundamental basement in the formation and development of the world economy. The liberalization of international economic relations and the development of information and communication technologies (ICTs) are the main engines of the global economy and economic integration of the countries. Besides, one of the most important concept of regional economic development is clustering.

Cluster is the economic agglomeration of related companies, and it is a point of growth and an important factor for sustainable socio-economic development of the region. Thus, cluster policy, firstly, creates the conditions for innovation activity in the economy and its modernization for the formation of the technological leaders. Secondly, clustering provides the possibility to solve actual social problems of the regions in the conditions of the shortage of natural resources.

According to the current global economic trends of social development the strategic perspective of the sustainability and competitiveness of the territory became the social development. Thus, the role of socially-oriented clustering became important in the regional development strategy. The aim of this strategy is to solve problems of increasing quality of life.

Clustering is not a new concept. It has a long period of historical development. The theoretical basis of this concept, which gives opportunity to explain the patterns of the world policy of economic clustering, is the theory of “industrial districts” of G. Becattini (Becattini, 1992).

The research of clusters is closely connected with the research field - the location theory. The direct impact on the development of the theory of clusters had: the theory of regional development (J. Thunen, V. Launhardt, A. Weber, A. Losch), the theory of regional specialization (A. Smith, D. Ricardo, E. Heckscher, B. Ohlin, P. Samuelson), the doctrine of autarchy (F. List), the concept of polycentric process (geopolitical regions) and the geo-strategic balance of forces (S. Cohen), the theory of zoning (W. Isard) etc.

A lot of researchers have attempted to structure the basic theoretical assumptions of the theory of the clustering creation, but based on the terminological and substantial views the phenomena of cluster is incompletely investigated.

According to the transition of competition in the innovation sphere the innovation activities of the company became one of the most important factor for future financing. The competitive position of modern companies is completely dependent on how effectively they organize the innovation activities, including research and development (R&D), knowledge management, as well as a system for collecting and processing information which necessary for innovation process. Thus, the development of the most effective system of innovation activities is a priority form for the private sector and public authorities in the country. This problem is actual for Japan, which faced with strong competition from fast-growing Asian neighbor-countries.

## **Modern concepts and forms of regional development**

It can be identified that one of the most common type of innovation infrastructure is an incubator. Large-scale programs to create incubators began in the middle of XX century in the developed countries, in the 1980-1990th in the developing countries.

Based on the definition of the European Business Innovation Centre Network, a business incubator is a specialized tool in the policy of regional economic development and regeneration policy by providing the multi-disciplinary professional support to small innovative business in an international context (IASP, 2012).

The fundamental difference of an incubator from other objects of innovation infrastructure is that it aims to support small companies with high growth potential that are at the beginning stage of the development.

The increasing risk of an incubator functioning is that in common business practice only one of ten innovative projects is successful, but, on the other hand, it is impossible to identify the successful project on the first stage of development, because it is determined during the incubation process (OECD-WB, 2011).

One of the largest facilities to support the innovation process is a technology park, which is considered in the world as the most effective form of integration for education, science and production spheres. In addition, it is common to use some other terms such as “scientific park”, “research park”, “industrial park”. Originally, all these objects of innovation infrastructure had its own specifics, but nowadays the borders between all these concepts were destroyed.

The first scientific parks appeared in the USA and in Europe in the 1960th, and in Asia - in the 1970th. According to research, nowadays, there are more than 1.5 thousand of scientific parks in the world (Albahari, 2010).

Nowadays, the scientific parks are more common in Europe (in the UK of more than 100) and Asia (Japan, Korea, Taiwan, Singapore).

A lot of researchers consider that on the basis of industrial park it was begun the process of development of clustering. For example, recently in China there are some major projects for construction of the industrial parks as the clustering type.

The different types of scientific parks can be identified based on the level of the research and production activities (Figure 1).

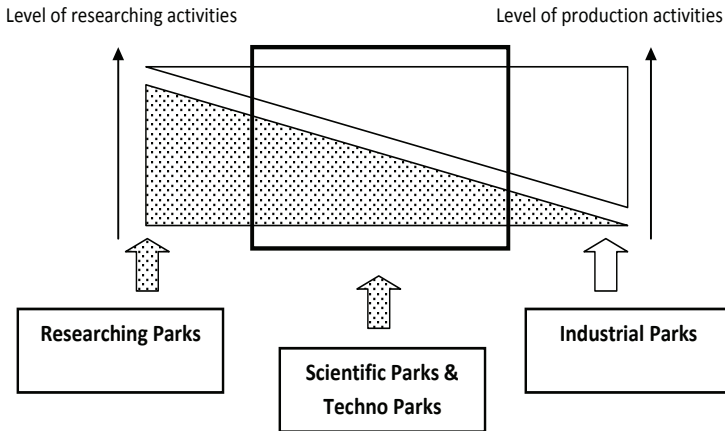


Figure 1: Characteristics of scientific, researching and industrial parks

Source: (Saitakis, 2011; Akira Goto, 2009; Toffler, 1990)

The scientific park has different main features - it is not only commercialized the research results, but it also manages and develops innovation products and services. Nowadays, the successful scientific parks increased and they turned into the scientific cities (“science cities”), and on their territory it is concentrated the several research clusters, universities, government agencies to support innovation (France, Sweden, Spain).

Occasionally, there is a concept of “technological zone” in the world practice (in the USA), the territory where it can be located several industrial parks, and these zones provide the same benefits and services that are normally available to residents of technology parks.

Clustering can be identified as a key instrument for increasing the competitiveness of industries and regions, improving the innovative capacity and economic development in the medium and long-term perspective in the countries of the European Union.

According to the world practice, in recent decades the process of cluster formation is quite active. However, each country has its own specific national features relating to public policy in the area of support and development of clusters. Clusters have been actively created in the late 1990th in Germany and Finland, and then in other European and Asian countries.

The researchers identified mainly three stages in the development of scientific concepts of clustering. The first stage of the beginning of clustering is the craftsmanship (the beginning of the XVIII century). This stage is characterized by the formation of a theoretical core of the clustering of economy, which makes it possible to explain the relationship between the co-location of firms and their economic efficiency (theory of “industrial districts” A. Marshall and G. Bekattini). The second stage (the beginning of the XX century) - the development of the theory of territorial distribution of enterprises and economic zoning (A. Weber, U. Izard and others), and the researches of the causes of formation of inter-industry complexes generated by the entering to innovation economy (R. Kouz, J. Schumpeter, F. Perry). The third stage (the last quarter of the XX century

- the modern period) - the formation of cluster theory (M. Porter) and the development of the basic theoretical concepts that support the cluster theory. It was determined that the cluster theory is developed within the framework of economic geography, regional economic theory, the theory of technological development, institutional theory.

In 2000, in Europe it was created the international project about clustering (European Research Area), the main idea was that the single European cluster can be insufficient to rely on its own forces of agglomeration to attract resources. The creators of this project based on the fact that lack of resources can be compensated by the establishment of close international relations.

The experts from different countries highlight the fact that it is focusing on the territory of a cluster of small, medium and large businesses can achieve the synergies in innovation development.

Clusters were widespread in a great number of countries and in some countries they have become an integral part of the national innovation strategy. In France, in 2005 it was created a special program of the clustering “The competitiveness clusters policy”, which has the purpose to integrate the companies with training centers, public and private research institutions for implementing the innovation projects (European Commission, 2011).

The analysis of development of different theories identified the importance of government agencies and research institutions in the formation of the clustering and it was formed the main directions of clustering in the economic development worldwide (Table 1).

*Table 1: Characteristics of clustering in the economic development*

<b>Industries</b>	<b>Countries</b>
Electronic and communication technologies	Japan, Switzerland, Finland, USA
Construction and development	Finland, Belgium, Netherlands, Denmark, Germany, China
Agro-industry and food manufacture	Finland, Belgium, France, Italy, Netherlands, Germany, Bulgaria, Hungary
Oil & gas industries and chemical industries	Switzerland, Germany, Belgium, USA
Timber industry and paper industry	Finland, Norway
Textile Industry	Switzerland, Austria, Italy, Sweden, Finland, China
Healthcare	Sweden, Denmark, Switzerland, Netherlands, Israel
Transport	Netherlands, Norway, Ireland, Belgium, Finland, Germany, Japan
Power Industry	Norway, Finland, Sweden
Machine engineering	Italy, Germany, Norway, Ireland, Switzerland
Pharmaceutical industries	Denmark, India, Sweden, France, Italy, Germany
Bio-technologies and bio-resource industries	Netherlands, Austria, Great Britain, Norway

(Source: OECD-WB, 2011; European Commission, 2011)

The experts from different countries agree that there is no one unique model for creating innovation infrastructure, especially for clustering. Based on the scientific researches, it can be identified the following models: North-American model (the minimum level of government guidance and a high level of interaction between the scientific and industrial activity, Silicon Valley); French-Japanese model (creating a huge

industrial park, which is concentrated in the territory of several other objects of innovation infrastructure); Scandinavian model (creation of small parks and implementation of national development programs); South-European model (modernization and creation of new jobs, which involves the active participation of inter-governmental European funds for developing the infrastructure).

Industrial park is a unique territorial area of high technology. The core of its formation basically was universities, which should be identified as infrastructure component of the industrial park. There is typically some industrial, research and development corporation around such basement component. It forms a common industrial and social infrastructure.

Based on the world experience of industrial parks it can be identified some specific features and factors of its effective functioning.

1. It has sufficient scientific, technical and educational potential (for example, in “Silicon Valley” there are 17 universities, 23 qualified educational institutions, about 6000 PhD professors).
2. The basis of industrial parks is specialized enterprises, including plants, equipment maintenance facilities before and after production; it forms a comprehensive system of research and production. For example, in “Silicon Valley” there is a supporting industrial system in addition to a variety of electronic enterprises.
3. There is a high level of concentration of leading enterprises and large capital equipment in the industrial park. It is especially actual for “science city” (Technopolis), which has a great necessity of investment spending over a long period of time.
4. One of the most important factors for success is the location of the industrial park. As a rule, it is situated in the suburbs of large cities, which are near the equipped and accessible information channels and advanced communications network. It should be considered the location of the transport network for effective logistic operations. There is also one factor for attraction of foreign scientific researchers in the region, it is a favorable environment and good conditions for living and education.
5. The industrial parks should have a flexible policy of providing benefits which promote the renewal of production and creation of new businesses. It is usually encourage to support the development of small businesses, provide incentives for risk capital investments, as well as for investments in venture businesses.

According to the IASP (International Association of Science Parks) and Institution for the Future there is a global change in the trend of technological development. There is a change not only in the formats of industrial and technology parks, but also some changes in its role in the development of society and economy (Table 2). The competitiveness and profitability of industrial parks of old generation is rapidly decreased.

*Table 2: The main periods of world development of industrial parks*

Characteristics of the period	The first period (1947-1970)	The second period (1971-1985)	The third period (1986-2013)
The widespread type of the industrial park	University parks, regional industrial parks, scientific cities	Technological incubators, specializing industrial parks, centers of technologies transformation	Networking industrial parks, community of industrial parks
The main process	Research and development programs (R&D programs)	Commercialization of research and development (R&D)	Creation of the space of information exchange, creation of joint projects
The basement	Laboratories in the universities, complex researching bureaus of transnational companies	Complex of technological business incubators	Internet community, networking complex of industrial parks
The owners of industrial park	Universities, transnational companies	Governments, regional and administration authorities	Innovation brokers and agents, venture companies, investment funds
The product	Innovation products	Technological decisions and technologies	Researching potential
The service	Access to the source of knowledge and the source of practical experience	Competitive rental conditions (realtor business), expansion of accompanying services	Access to the professional community
The leading countries	USA, Great Britain	Europe, Asia	USA, Asia

(Source: Albahari, 2013; International Association of Science Parks and Areas of Innovation, 2012; The Global Competitiveness Report, 2015; Competitive Industrial Performance Report, 2013; World Investment Report, 2014)

There is a change of formats of industrial parks every 15-20 years, that due to the changing market trends, the economy and the transformation of the whole society.

The number of industrial parks in the world is rapidly grows. Nowadays, there are more than 700, and 43% of them are in the USA, 34% - in the EU and 11% - in China and 13% - in other countries. Silicon Valley is a the most successful standard of venture capital business area. Firstly, it means the most successful technological base - a set of the most advanced knowledge-based industries, based on a highly developed industrial infrastructure, the most modern forms of communication between science and production. As a result of the evolution of industrial parks and technological parks and clusters it was developed the basic models - American, European and Japanese.

## **Japanese Clustering in regional development**

Japan is an example of how the deficiency of natural recourses may eventually lead to a competitive advantage, because this deficit has forced the country to develop an innovation model with the basis of the energy-saving technologies.

In Japan, the formation of industrial clusters began in the late 1970th. But the active phase of cluster creation started since 2001. Until last decade, clustering was carried out only with the support of the central government, but nowadays it moved to the regional authorities. Since 2001, it was carried two projects of development of industrial and



intellectual clusters, which were developed based on international experience, especially the experience of the USA, but they have distinctive features.

As in the USA, the clusters in Japan are created for promoting the most advanced scientific and technical researchers. In Japan, these areas are nanotechnology; robotics; the “mixed sector”: biological production, ecological, and bio-informatics.

In the USA, the main influence in the creation of clusters has the leading companies, research centers and universities, which initiate and organize the whole process, but in Japan, a crucial role has local governments (prefectural and municipal authorities) and companies.

The weak point of Japanese innovation system is a disconnection between the participants of the innovation process - private companies, scientific research, education, government agencies, thus, the first key objective is the establishment of co-operation between these actors.

Another key objective of the development is recognized the venture capital business, which has the most active support from the government.

There is one of successful example demonstrating the features of Japanese policy for development of clustering - “Sapporo Valley”, it is one of Japanese first large research and production association, which was created in Hokkaido, in 1976.

In 2001, Sapporo administration established the Sapporo City Center of digital R&D, designed to facilitate software developers, web designers and other professionals in creation of venture projects. At the same time it developed a program “e-Silk Road Program”, which aim is the development of cooperation with foreign partners.

There are also some foreign Asian partners in this project - Seoul (South Korea), Daejeon (North Korea), Shanghai, Shenyang, Shenzhen, Hong Kong (China), Hsinchu (Taiwan), Bangalore (India), Singapore. As a result, “Sapporo Valley” became a cluster with a steadily growing gross income that can enter the number of the largest software development centers in Asia.

The City Council and Chamber of Commerce Sapporo prepared a joint proposal to attract some companies from South Korean and Britain which produced software, and they came with this proposal to the Ministry of Economy, Trade and Industry (METI), and the proposal was selected in 2004. Bureau of Economy, Trade and Industry of Hokkaido began in 2004 the realization of the second project of super-cluster in Hokkaido. It was the comprehensive support for communication and cooperation with the countries of North-East Asia, and the program “e-Silk Road Program”, according to this Sapporo is connected with other centers of information technology of Asia. It is developed and implemented programs to attract foreign firms to the Valley of Sapporo.

Nowadays, Japan has a program «Knowledge cluster initiative», stimulating the development of clusters in the 18 regions of the country in which regional universities are the basement of clusters formed by a network of small innovation firms and large industrial companies.

The process of clustering, which is typical for industrialized countries, begins to emerge with the active participation of the government and in developing countries, such as India, which is actively involved in global competition, mainly with the development in the sphere of offshore programming. The center of scientific and technical progress in India is Bangalore, which is developing as a center of intensive technologies, and its enterprises are actively working with local research centers and institutes.

The main factors for the transformation of Bangalore center in the center of intensive technologies are the following: active participation of the government and large enterprises in the public sector for more than 30 years; the allocation of central government public investment enterprises and institutions; cancellation of burdensome state licensing regime; creation of scientific training centers; orders of American firms provide the flow of foreign investments; determining at the legislative level of national priorities and the priorities of the export product.

There are also great Japanese experience of the development of industrial parks abroad under bilateral cooperation: Neemran Industrial Park (India). This industrial park, specially prepared for the Japanese producers. Investor, developer and operator is Rajasthan State Industrial Development & Investment Corporation RIICO. The total area of project is 472 hectares. The number of residents is 30 Japanese companies.

In 2001, the Ministry of Economy, Trade and Industry (METI) elaborated Plan for creation of industrial clusters. According to this plan it is necessary to promote the close cooperation of small and medium-sized businesses with research institutions in order to achieve a high level of technological development and creation of new business. With the support of the regional departments of METI and private organizations it was created 19 projects in all regions of Japan.

Plan for creation of industrial clusters has 3 stages of its implementation: the first stage (2001-2005) the initial period, the period of formation of industrial clusters; the second stage (2006-2010) a period of growth of industrial cluster; the third stage (2011-2020) a period of self-sustaining development of the industrial cluster.

According to this plan the production structure of a particular region should develop in such direction in which the product of the cluster becomes necessary for other industries of the region. Thus, there are strong relations among all the sectors in the region, which can provide future stability of the economic developments of the country.

The phenomenon of clustering is unique, it is economic agglomeration of related enterprises on the territory which has a long history of development from the period of handicraft production.

Industrial cluster is a community of economically closely related industrial companies mutually contribute to the overall development and growth of competitiveness. Mostly, it is an informal association of large leading companies with a lot of small and medium enterprises, the creators of technology, communication market institutions and consumers which are in the same value chain.

Based on New Economic Growth Strategy, which aimed at achieving sustainable economic development in the long-term period, it have been developed in 2006 some government programs - New National Energy Strategy and Global Economic Strategy by Ministry of Economy, Trade and Industry of Japan (METI). It was the basis of the current economic and industrial policy of the government and at the same time it became part of a comprehensive national long-term reform program. New strategy of economic growth determines the direction of Japanese development for the future, the main objectives and priorities of economic development.

Nowadays, innovation became the “national idea” in Japan, the terms like “innovation activity”, “innovation development”, “innovation cycle” are used in every modern government programs.

It was identified that Japanese were the first researchers who investigated the model of innovation process, which include integration of research and development (R&D) with production and manufacturing, and the close cooperation of consumers with providers. Firstly, this model used by Nissan company and it enables to develop products that exactly correspond to the necessity of the market, and simultaneously it helps to reduce the costs.

In 1990th it was developed the new model of innovation process. Its principal difference is that the innovative enterprise should not only integrate all stages of the innovation process, but also to cooperate with other sources of knowledge - universities, research centers and enterprises. This scheme provides the access to the necessary knowledge, which greatly increases its potential for innovation, and as a result, the level of international competitiveness. It was especially actual for Japan, because it faced with strong competition from some industrialized Asian countries from 1990th. The most famous Japanese specialists in this area are researchers from School of International Corporate Strategy, Hitotsubashi University, Ikujiro Nonaka and Hirotaka Takeuchi (Nonaka, I. & Takeuchi, H., 1995).

In our research we had the analysis of financial stimulation support of innovation activities of the private sector from Japanese government. There are so specific features of the Japanese concept of financial stimulation of innovation activities. Firstly, it should be mentioned such instrument as the tax benefits. The experience of Japan proved the idea that for private sector it is more efficient to provide tax benefits than direct grants and subsidies from the government. It is actual because of the fact that the company receives the relevant benefits only after the making some requirements of a particular government program, while the subsidies are a kind of so called “advance” and unknown outcome. Secondly, the tax benefits do not require additional costs for the establishment and functioning of the administrative mechanism of the allocated funds.

The main objective of tax benefits to enterprises is to stimulate the growth of R&D, which are the main indicator of innovation activity in the private sector. In addition, the government can set a tax credit to other expense items related to the innovation activity of the enterprise to meet the requirements of the state innovation program. Thus, nowadays there are tax credits for Small and Medium Enterprises (SME), conducting R&D, and enterprises engaged in innovation activities in collaboration with the research, educational institutions and government agencies, as well as companies conducting research in the fields of science.

Nowadays, Japan is actively implementing a number of programs for the development of scientific and technological cooperation with private enterprise and science. And there is a difference of the scheme of realization of such cooperation in Japan from European countries. Thus, in the developed countries of Europe, the scientific and technical cooperation between business and science is generally taken place on the basis of creation of venture companies by the researchers from universities and research organizations. In Japan, due to the factor of national mentality unwillingness of risk such scheme is not widespread. In this regard, there are special intermediary organizations - the so-called “organizations of licensing technology” (OLT), it is a kind of a link between companies and research and educational institutions.

These organizations support researchers in patenting technologies and products, which they developed and then transfer the technology to private companies, in other

words these organizations are negotiators between scientists and entrepreneurs. The new industries in Japan were created mainly with the help of OLT. The part of the revenues from these businesses is for the scientists, who conduct appropriate investigations in this sphere, and it helps to enable future research activities in the universities. The advantage of this system is that scientists can completely devote to their research without being distracted by patenting their inventions, searching of client-companies and other activities. The entrepreneurs have also their benefits by saving time and finance in searching process of scientific and technological inventions.

The characteristic feature of a new model of innovation process in the companies is the implementation of innovations in the inter-organizational level. The most effective way, which successfully organize the innovation process by involving other companies as well as various kinds of research and educational institutions, is the researching activities in the cluster.

The companies operating in the clusters have several advantages of other companies. Firstly, they have more qualified access to information of the markets, progress in technology, inventions of new concepts in service and marketing. Secondly, active cooperation with local research institutions greatly facilitates access to the latest scientific and technological achievements. Thirdly, close contact with the local educational institutions provides a unique opportunity to recruit and train new highly qualified staff. According to these advantages of the clusters, the clustering became one of the most popular governmental policy as the set of measures for supporting the existing and new clusters.

The implementation of the program of cluster development in Japan began later than in other countries, and it has its own specific features of clustering. This is due to the fact that, firstly, one of the main direction of the governmental policy was regional development, while creating a system of interaction between the private sector, science and government was not completely developed. Secondly, there is a number of institutional barriers such as the lack of legal framework basis. The active process of cluster policy in Japan began in 2001 on the basis of Plan for development of science and technology.

Cluster policy in Japan has the following objectives: development of cooperation between business and science; active support of the development of business venture; development of priority industries of science and manufacturing; strength of international contacts, attraction highly qualified foreign personnel to Japanese companies; attraction to cooperation of local administration authorities.

In 2013 Japan accepted Strategy of the development of Science, Technology and Innovation, it is a long-term perspective for ideal economic society. It was elaborated a number of support programs for development of innovation by Japanese government. Japan is known as a country which widely support venture companies. There are some Venture Support Programs in Japan, which bring necessary support for the future development of new business. The overview of specific governmental support programs is presented below (Table 3).

Table 3: Support Programs for Business Startup in Japan

I. Subsidy Programs	II. Preferential Investment and Tax Treatment	III. Loan Programs	IV. Management Consulting
1. <i>Start-up Grants</i> (this program subsidizes part of funds needed by young entrepreneurs to start local businesses based on existing family businesses)	1. <i>Business Startup Support Fund</i> (Under this program, private venture capital funds and other funds in which SME Support Japan invests provide support to venture businesses which are 5 years old or younger.)	1. <i>Funds to Enhance SME Business Capabilities Enhancement Support</i> (this program provides low-interest loans to SME companies receiving support from certified support organizations)	1. <i>Professional Support for New Business Creation Program</i> (under this program, professionals, including top venture capitalists, lawyers and accountant provide support to venture businesses with strong growth potential)
2. <i>Subsidy Program to Revitalize Small Business</i> (this program supports development of new products and services and expansion of sales channels by small businesses)	2. <i>Business Startup Support Tax Incentives (Angel Tax Incentives)</i> (this program provides preferential tax treatment to investors investing in young companies)	2. <i>New Business Startup Loan Program</i> (this program provides unsecured, non-guaranteed loans of up to 15 million yen to persons planning to start a business which are second-phase old )	2. <i>Business Creation Support</i> (under this program, a portal site for matching of SME and people receiving support will be established)
	3. <i>Investment by innovation Network Corporation of Japan</i> (Under this program, Innovation Network Corporation of Japan invests in venture businesses and projects to commercialize cutting-edge technologies)	3. <i>Guarantee related to Business Startup</i> (this program guarantees loans up to 25 million yen borrowed by persons planning to start a business and companies which are 5 years old from private financial institutions)	3. <i>Certifies Support Organizations</i> (certified support organizations provide consulting service as easily accessible consultation windows based on The SME Business Capabilities Enhancement Support Act)
		4. <i>Quasi-capital Funds</i> (this program provides long-term, lump-sum redemption funds necessary for operating new businesses)	

(Source: METI Journal Venture Businesses, 2012; Japanese Science and Technology Indicators, 2013; OECD, 2014; Kim Young Gak, Ito Keiko, 2013)

Nowadays, Japanese regions promote the formation of “industrial clusters” and “intellectual clusters”. Its aim is to create new industries by cooperation of industries and universities. It is a long-term perspective, and it takes long period of commercialization.

However, industrial cluster cannot be completely formed only by affiliation between industries and universities. M. Porter examined the sources of such competitiveness after analyzing cases of industrial integration that have resulted in high international competitiveness (Porter, 1990). He concluded that such sources should be found where companies, suppliers, connected organisations are geographically concentrated (Figure 2).

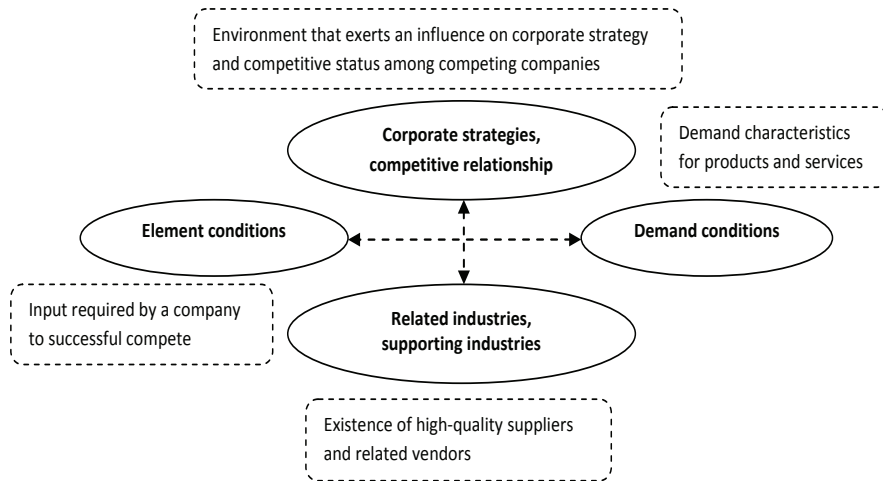


Figure 2: Diamond Framework for formation of Industrial Cluster  
(Source: Porter, 1990)

The example of highly successful cluster in Japan is the combined automobile and machine industries in three prefectures (Aichi, Mie and Gifu) located in Tokai region of Japan. Tokai region of Japan is a basis for well-known in worldwide automobile plants (Toyota Motor Corporation, Aichi prefecture; Honda Motor Co., Ltd., Mie prefecture). The development of automobile industry in this region provides the positive environment and stability in the regional economy of Japan (Table 4).

Table 4: Japanese government activities for creation of New Industries

Organization	Industrial Policies	Activities
Chubu Prefecture Bureau of Economy, Trade and Industry	Industrial cluster plan	1. establishing human networks among universities and companies 2. providing support for the development of new businesses, the creation of venture start-ups
Ministry of Education, Culture, Sports, Science and Technology	Intellectual clusters	Providing support for the creation of businesses from university-originated technological seeds
Aichi prefecture	New industry creation plans	1. creating new industries (ventures) 2. establishing appealing business environments 3. supporting the development of existing industries (global networks) 4. setting up a systems and structures to promote industrial vitalization
Nagoya prefecture	Nagoya Science Park	Soliciting company participation
Mie prefecture	Forming industrial clusters	1. Crystal Valley (liquid crystals) 2. Medical Valley (drugs) 3. Silicon Valley (semiconductors) 4. Pearl Valley (call centers)
Gifu prefecture	“Sweet Valley”	Forming a large cluster for IT-related companies, contents business and robotics industry

(Source: Iwaware Yoshihiko, 2004; Japanese Science and Technology Indicators, 2013; Saitakis, 2011; OECD, 2014)

This region became one of the most industrialized prefecture in Japan as a result of the governmental support in the process of modern industrial policy. Tokai region has also the highest level of innovation development in Japan. The innovations of this region include not only technical improvements, but also process innovations and new business models of management.

## Conclusion

Clustering is a logical step in the development of modern economy. Japan has the most developed structure of clusters, and it also has some specific forms of cluster.

Industrial clusters in Japan mostly deal with innovation activities, such as research and development and new business in new spheres of industries. There are some plans for creating the industrial clusters until 2020.

Nowadays, Japan has specific concept of regional policy. Japanese experience shows that the government support of regions remains the required form of regional policy in the market economy. Japan found mechanisms of direct and indirect methods' combination to develop and support the regions, and in future attract the private sector for participation in different government programs.

Clustering was developed in Japan in the framework of regional and industrial policy of the country by the Ministry of Economy, Trade and Industry (METI). Historically, Japanese economic system is based on planning, which is one of the most important element of the economic policy in Japan.

With the beginning of the crisis period in the global economy, Japanese government actively involved in the economic development to implement anti-crisis programs and Business Startup Support Programs for businesses. It began to change the priorities of the government policy. It was identified some specific areas of government support in Japan - social sphere, regional policy and support for small and medium enterprises (SME), especially venture businesses. Regional policy based on clustering was selected as one of the priority element of support by the government in the crisis years, this support is provided with the help of additional budget program.

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