Innovative Characters of Countries

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The population of the earth is growing exponentially, while the available natural resources of our planet are continuously decreasing and are finite. The provisions can only be assured by the creation-based production of goods.
In other words the creation-based productions are the innovations. Creations are inventions and work of arts. The basic conditions of innovations are; an invention is a technical creation, it is totally new and evident solutions are not known.
All new the technical innovations are based on inventions, they are a most important and dynamic sources of the economy.
The inventions are protected by patents, utility models etc., these are the forms of the intellectual property. These properties with the trademarks, know-how are the intellectual part of the capital. In this Century the intellectual properties will become the most important part of the economy.
In 2001 private individuals, institutions, companies and others applied for more than eleven millions patents in different countries all over the world. This is shown on figure 1.

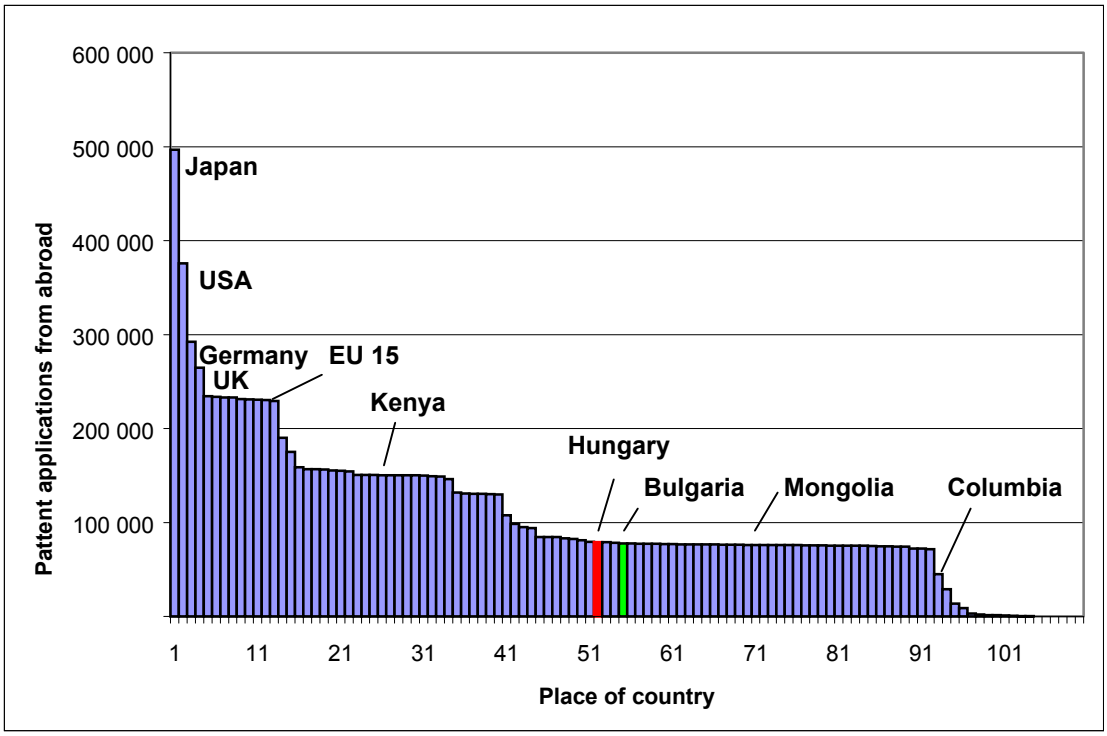

Figure 1 – Patent applications from abroad

The economical importance of the different countries is reflected by the place on this figure. The most important markets: Japan, US, and EU 15 countries. The second group of economical important countries are composed the Africans, China, Russia, Romania, Macedonia and others. The third group Bulgaria, Hungary, Mongolia and others are the less important then the formers.
These dates show the direction of innovation offensive from abroad but no the innovation capacity of the countries.

The greatest company or research institute cannot invent, the individuals the inventors create the inventions only. The creation is a first step at the innovation process. The second one is the patent application, which should be given top priority. These patent applications are practically the domestically requested in different counties. According to the WIPO research data nearly 1 million new inventions were reported in 2001. These come from 61 countries with 3,4 billion people in them the other 100 countries had no inventions reported. 92% of all inventions come from only 10 countries only (See Figure 2). This data shows that there is gigantic reserve of human intellectual power is not put to good use.

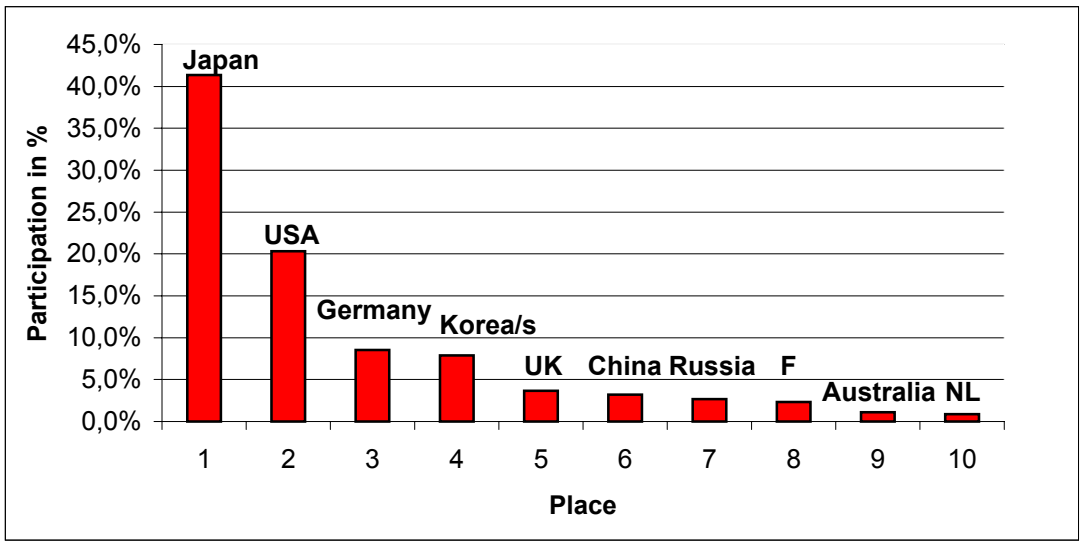

Figure 2 – Top 10 countries in 2001

Hungary has 1 019 (0.1 %) and Bulgaria 291 (0.03%) inventions in 2001.
The US inventions are 190 thousands and EU 25 has 178 thousands patent application (See Figure 3).

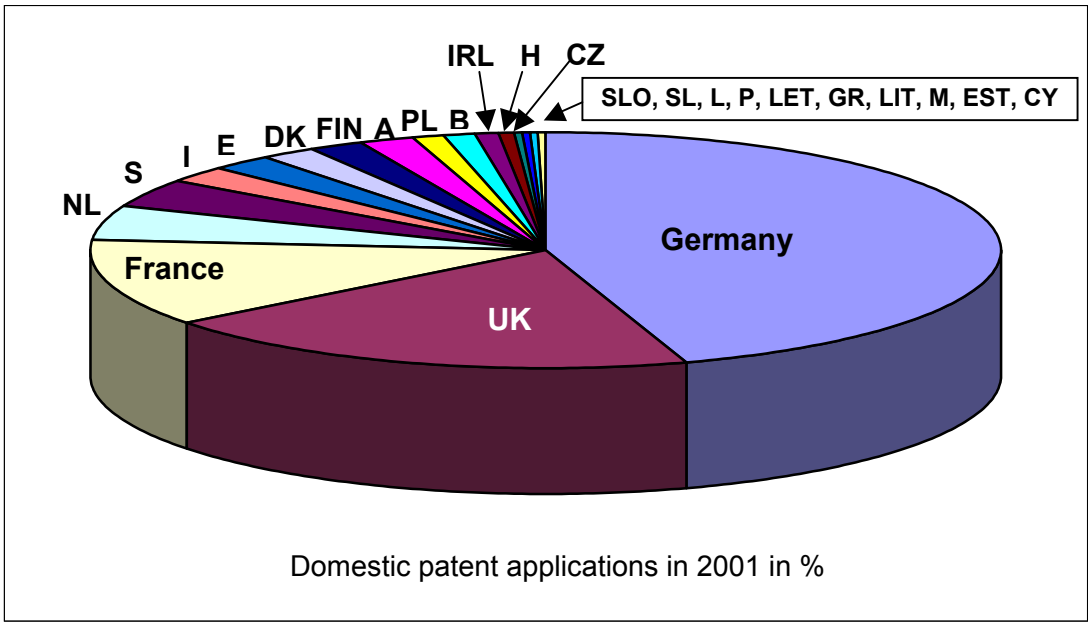

Figure 3 – Activity of EU countries

Let us turn to the dynamic of inventive activity. The Figure 4 shows the developing in this field.

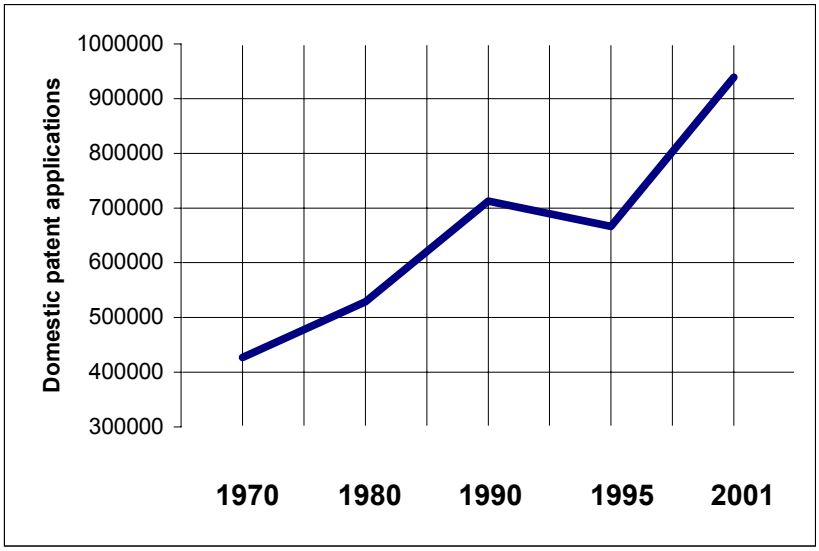

Figure 4 – Domestic patent applications in 2001

You can see two symptoms: First symptom, in 2001 there were 2.2 times more inventions than previous 30 years, while the population of the world increased only 1.5 times from 1970 to 2001. The second symptom is the sharp decrease from 1990 to 1995. Due to the collapse of the Soviet Empire a recession of invention was a sad result. A similar recession accrued after the Second World War.
The 20th Century was the Century of Inventions, and a fierce competition between US, Japan and Soviet Union (See Figure 5).

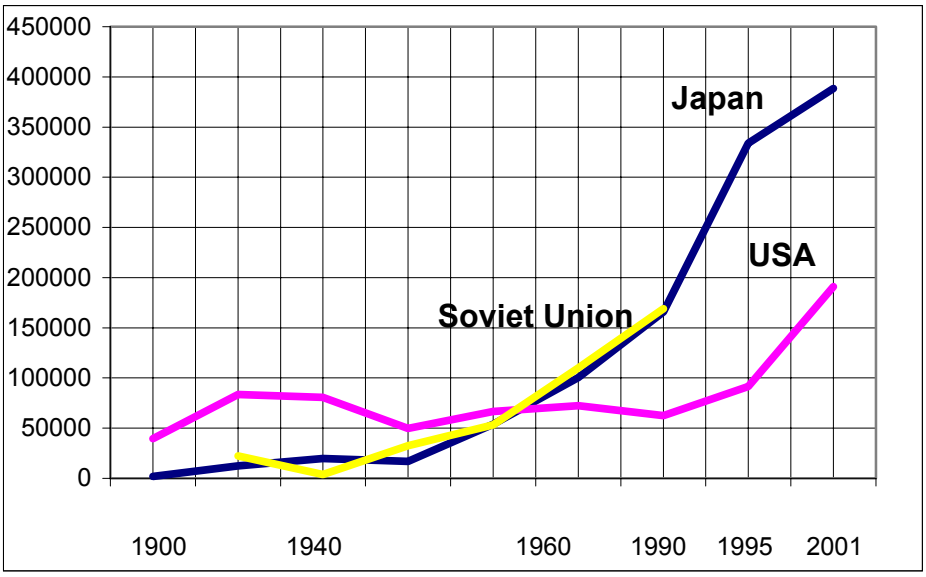

Figure 5 – US, Japan and Soviet Union activity in 20th Century

If we would like to compare the innovation characteristics of countries the number of inhabitants must bee take account. Therefore the domestic patent application per 1 million inhabitants is the characteristic value (specific invention). The other important element is Gross National Product GDP per capita (specific GDP) of the various countries. The next table shows this data.

Country	2001				1992			
	Specific invention		Specific GDP		Specific invention		Specific GDP	
	Place	**Value**	*Place*	**Value**	*Place*	**Value**	*Place*	**Value**
Japan	1	3263,8	4	41,2	1	2841,2	3	36,9
Korea (South)	2	1681,8	25	14,5	9	362,7	28	9,0
Switzerland	3	1126,6	2	50,0	2	783,1	1	45,1
Germany	4	971,2	11	30,8	4	555,8	9	27,2
USA	5	816,9	5	39,4	8	402,3	8	29,5
Sweden	6	801,5	8	35,6	5	535,5	7	29,8
Denmark	7	698,1	7	38,3	10	341,5	5	30,6
Australia	8	669,5	9	31,9	3	556,7	13	22,5
Finland	9	654,8	15	29,6	6	425,6	16	21,7
United Kingdom	10	584,7	22	23,4	7	408,3	20	17,9
Israel	11	580,0	18	28,3	11	341,5	19	19,5
Luxemburg	12	570,0	1	60,0	27	105,0	2	40,0
Netherlands	13	500,4	16	29,1	18	238,6	14	22,5
EU 15	**14**	**460,6**	**19**	**26,3**	**14**	**305,6**	**17**	**21,6**
Norway	15	434,1	3	44,9	17	263,2	4	32,7
Austria	16	409,5	10	31,1	12	324,8	10	25,9
French	17	365,6	13	29,9	16	268,1	11	24,9
Ireland	18	342,1	14	29,7	19	202,1	22	14,6
New-Zeeland	19	287,5	21	23,8	13	322,5	21	17,5
Canada	20	230,4	12	30,3	23	128,8	15	22,0
Island	21	213,0	6	39,1	24	121,7	6	30,4
Belgium	22	189,6	17	29,0	25	115,9	12	24,1
Slovenia	23	172,0	28	11,5	29	94,0	29	8,5
Russia	24	170,4	41	3,1	15	269,0	36	3,6
Ukraine	25	139,1	54	0,9	42	5,9	48	1,6
Moldavia	26	101,6	60	0,5	60	0,0	55	0,7
Hungary	**27**	**99,9**	**34**	**5,5**	**22**	**147,6**	**34**	**4,2**
Spain	28	96,3	23	18,1	32	57,2	23	14,0
Croatia	29	95,0	36	4,8	28	99,8	35	3,8
Kazakhstan	30	94,7	48	1,6	36	25,5	47	1,7
Byelorussia	31	94,5	46	2,0	54	0,0	45	1,9
Italy	32	67,7	20	24,5	21	162,3	18	21,0
Malta	33	65,0	30	10,0	40	7,5	60	No data
Czech Republic	34	59,9	32	6,0	50	0,0	31	5,0
Poland	35	57,5	37	4,6	30	75,0	38	3,0
Latvia	36	53,9	43	3,0	26	109,1	42	2,6
Brasilia	37	51,6	31	6,6	37	16,3	30	5,0
Romania	38	51,0	50	1,5	31	64,8	49	1,3
Slovakia	39	48,1	38	4,4	51	0,0	39	3,0
Armenia	40	47,0	59	0,6	59	0,0	59	0,3
Georgia	41	46,7	57	0,7	58	0,0	54	0,7
Serbia-Montenegro	42	44,8	51	1,3	55	0,0	46	1,7
Uzbekistan	43	40,2	56	0,8	57	0,0	53	0,8
Macedonia	44	33,0	45	2,5	53	0,0	43	2,5
Bulgaria	**45**	**32,7**	**52**	**1,2**	**34**	**37,1**	**51**	**1,2**
China	46	29,9	53	1,2	38	9,9	57	0,5
Lithuania	47	20,0	44	2,9	33	38,3	40	2,9
Kirghizistan	48	19,5	61	0,5	61	0,0	56	0,7
Portugal	49	18,2	26	12,5	41	6,9	25	9,8
Estonia	50	17,9	39	4,3	52	0,0	41	2,9
Iran	51	12,6	47	1,8	44	4,1	50	1,3
Bosnia-Herzegovina	52	11,8	55	0,9	56	0,0	61	No data.
Turkey	53	9,0	40	4,0	45	4,0	37	3,3
Egypt	54	8,4	49	1,6	43	5,5	52	1,0
Mexico	55	8,1	33	5,6	39	7,7	32	4,3
Greece	56	7,1	27	12,2	35	35,2	26	9,6
South-Africa	57	5,8	35	5,4	20	183,3	33	4,3
Cyprus	58	5,7	24	15,7	49	0,0	24	11,4
Saudi-Arabia	59	2,8	29	10,5	48	1,3	27	9,4
Columbia	60	1,9	42	3,1	46	3,6	44	2,5
India	61	0,3	58	0,7	47	1,7	58	0,4

Table 1 – Innovation character of the countries

The innovation character of a country is determined by domestic patent application per 1 million inhabitants (specific invention) and GDP per capita (specific GDP) together. The results are graphically shown on the next figure.

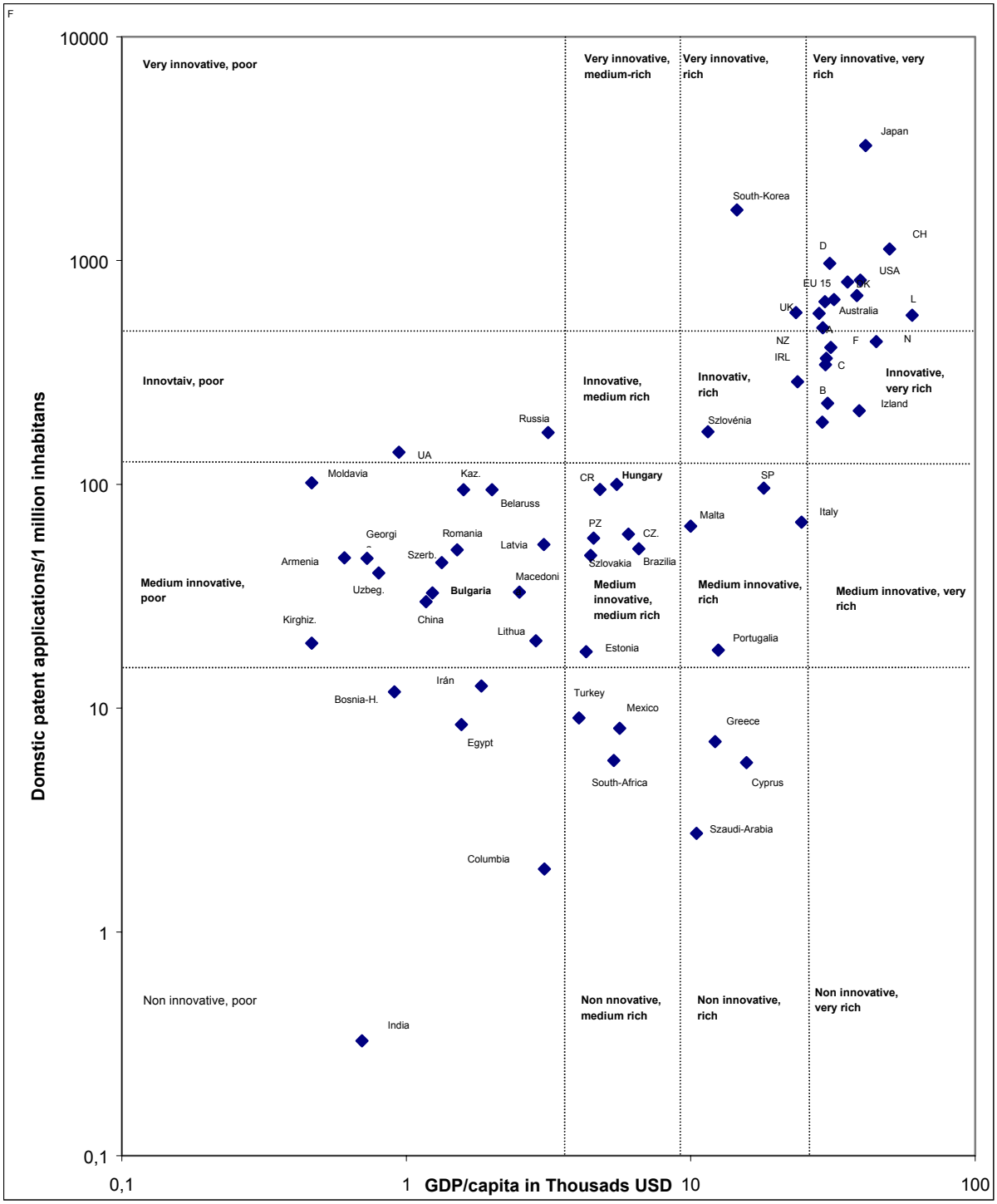

Figure 6 – Innovation character of the countries

You can see that Bulgaria is a group of medium innovative and poor country, while Hungary is medium innovative and medium rich one. The EU 15 countries are very innovative, or innovative except Italy, Spain and Portugal which are medium innovative. Out of the new EU countries Slovenia is the only one, which is innovative and rich.

The last 10 years of the former Century shows an interesting picture concerning the development of the different countries. It is interesting because exactly 43% of countries did increase their innovative capacity and 43% of countries regressed. The rest 16% of countries were stagnated.

First of all the innovative capacities increased to the highest degree in South-Korea, US, Denmark, Slovenia, Slovakia and several former Soviet countries.
The innovative capacities significantly decreased in Hungary, Bulgaria, Poland, Russia, Finland, UK, France and Austria.

Finally we would like to present an instructive example for the technical-economical development. Let us see the comparison of South Korean and Hungarian's situation between 1986 – 2001 (See Figure 7).

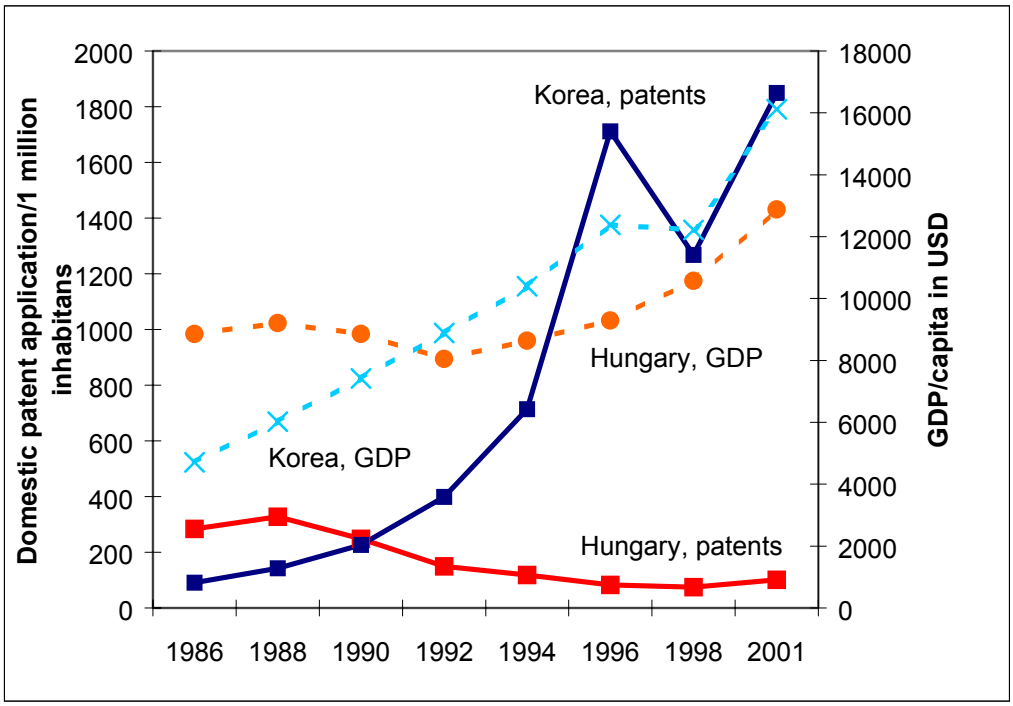

Figure 7 – Competition between Korea and Hungary

As you see in the above figure Hungary was in a better situation concerning the technical and economical aspects then South Korea from the beginning to 1990. After this period the South Korean inventive activity with GDP begin a strong increase. The Hungarian innovation continuously decreased. For this reason South Korea has one of the most inventive economies and their possibility for strong economical development is excellent. Consequently South Korea has become a much richer country then Hungary.

I hope my lecture demonstrated the importance of a strong inventive activity and the innovative characters of countries for the economic development.
I wish with all my heart that Bulgaria would follow the South-Korean example and become a part of European Union as soon as possible.

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