



ENERGY MARKETS

Renewables Leverage towards Competitive Development: Serbia's Perspective

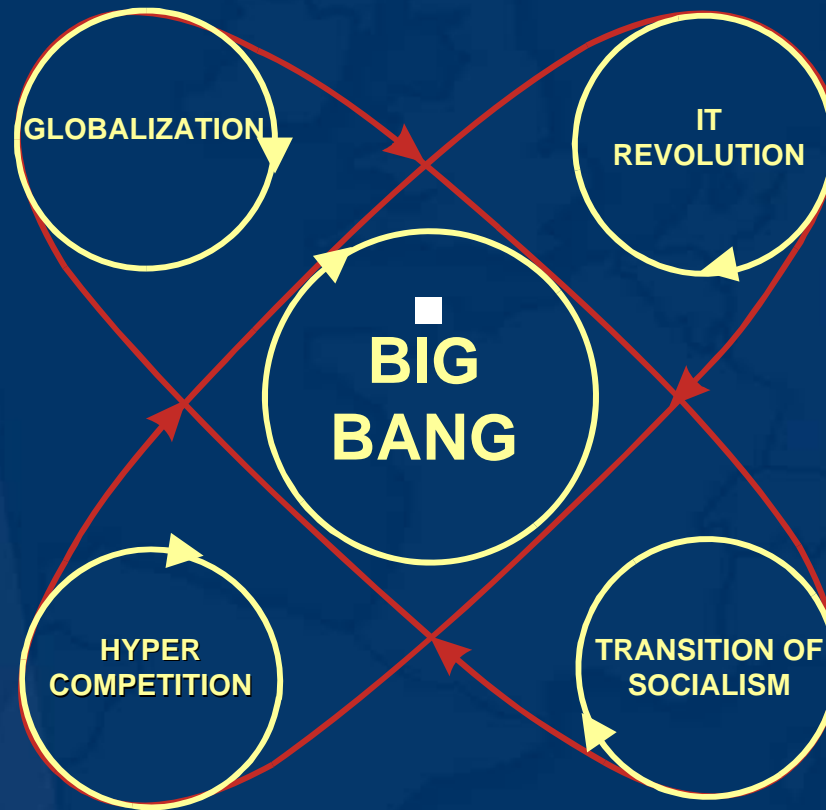
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**Regional Economic Forum
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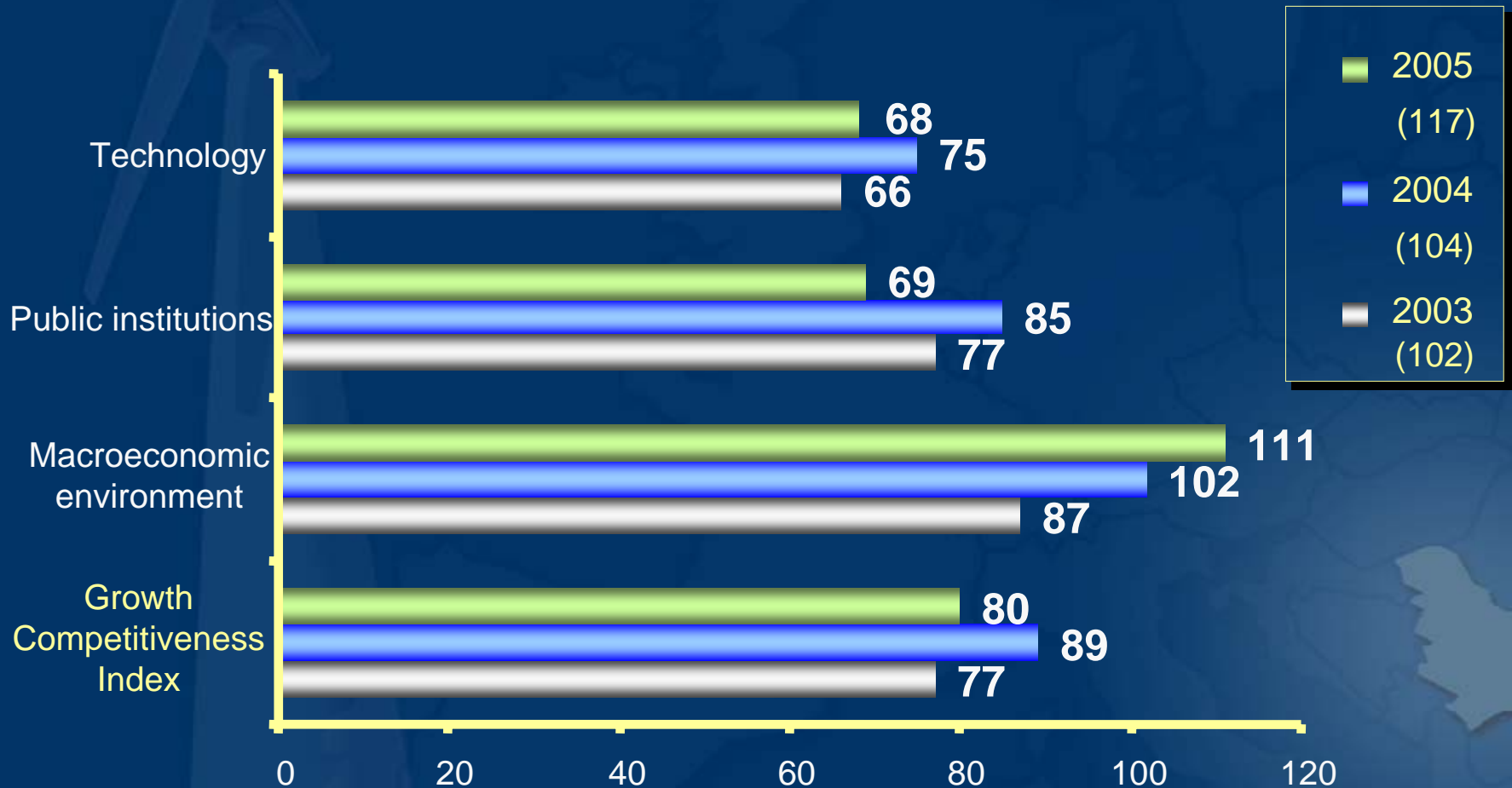
Competitiveness

- **Competitiveness is underlying source of prosperity of national economy**
- **Competitiveness allows:**
 - High wages
 - A strong currency
 - High standard of living
 - Attractive returns on capital
- **World Economic Forum (WEF) provides credible data base for measuring competitiveness of national economies by using:**
 1. Growth Competitiveness Index
 2. Business Competitiveness Index
 3. Global Competitiveness Index

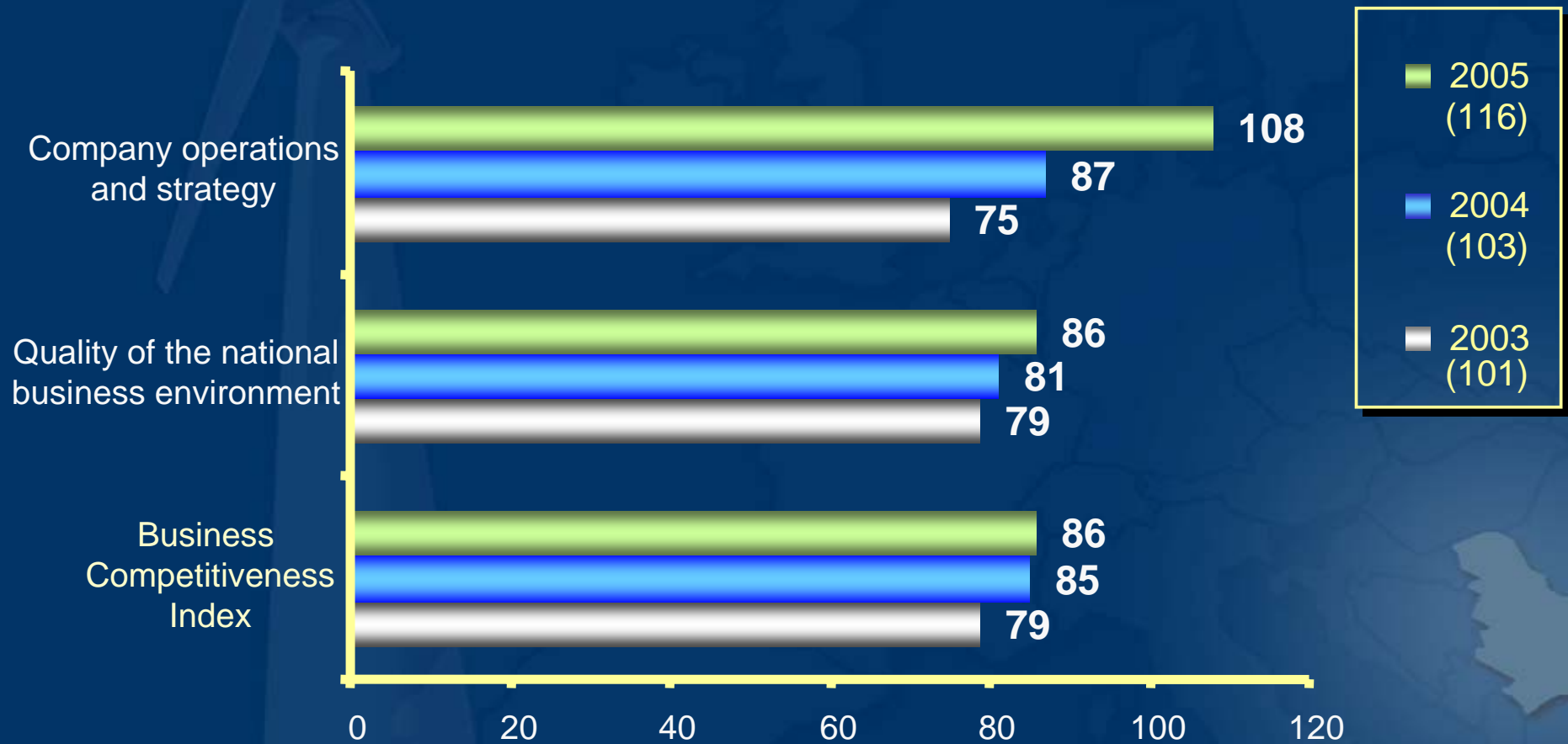
Poor Understanding of Leading Development Trends



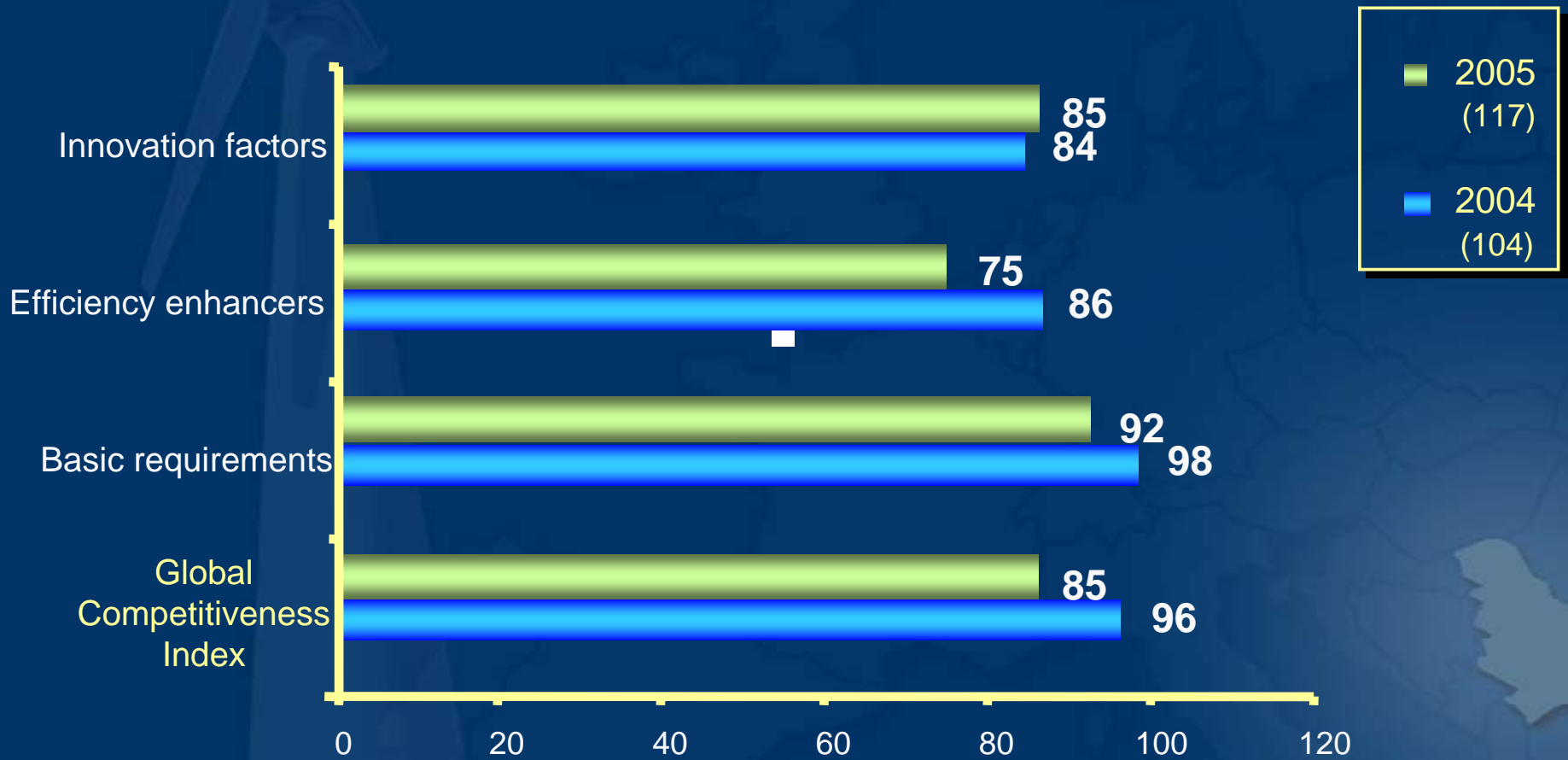
Growth Competitiveness Index 2003-2005



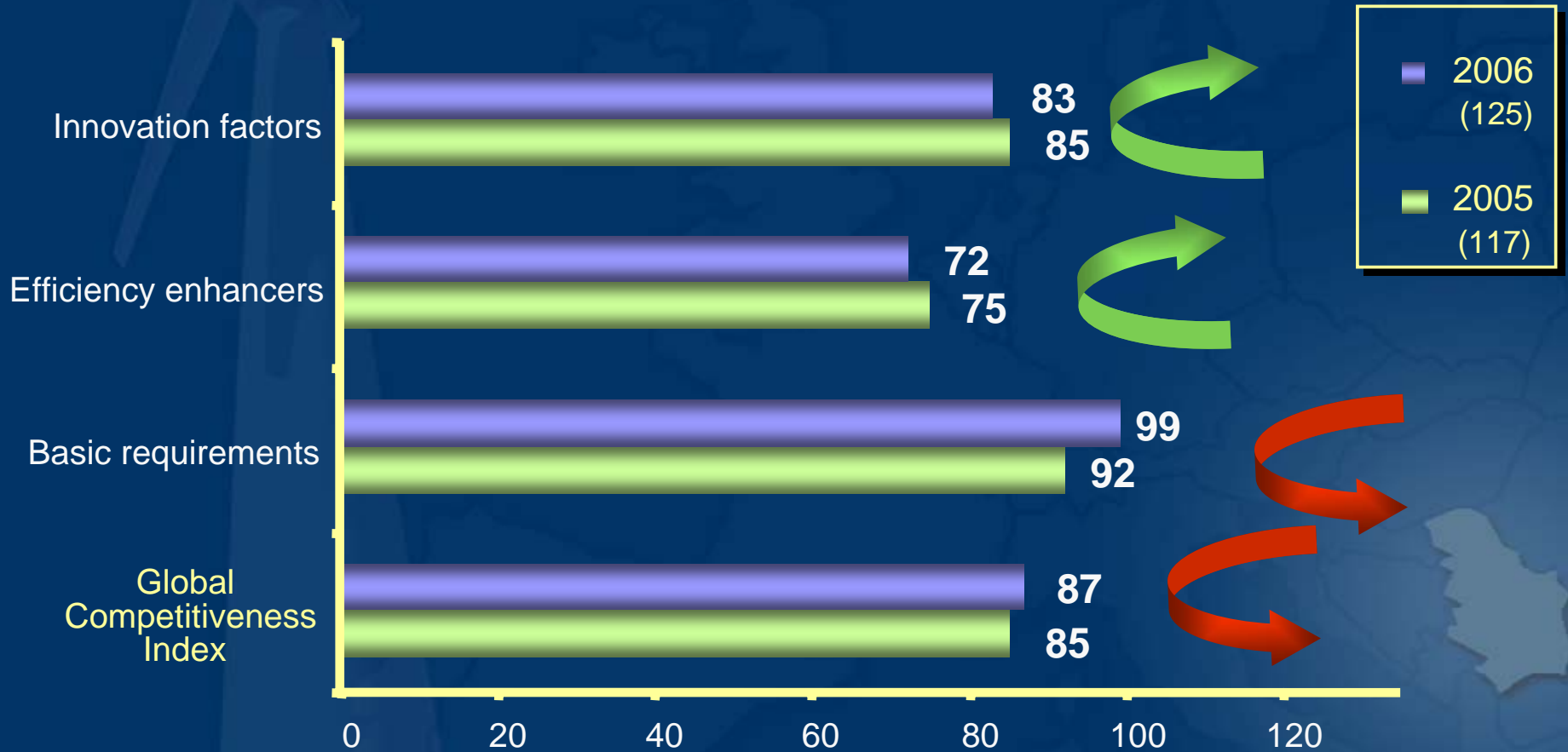
Business Competitiveness Index (2003-2005)



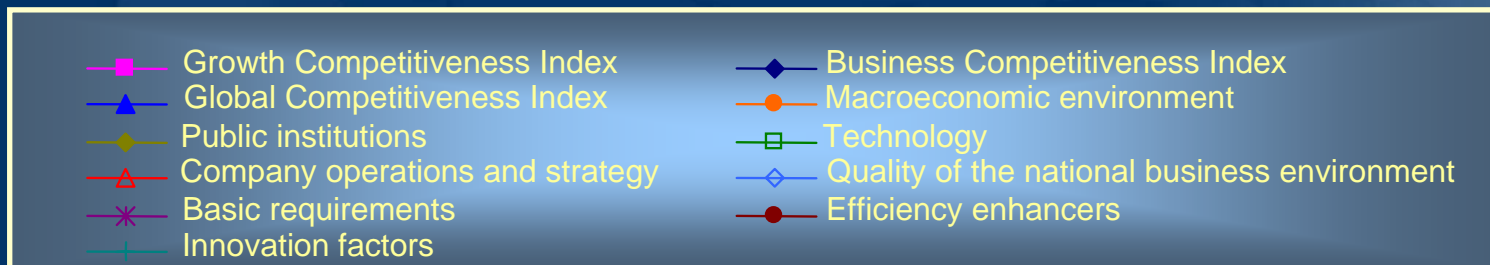
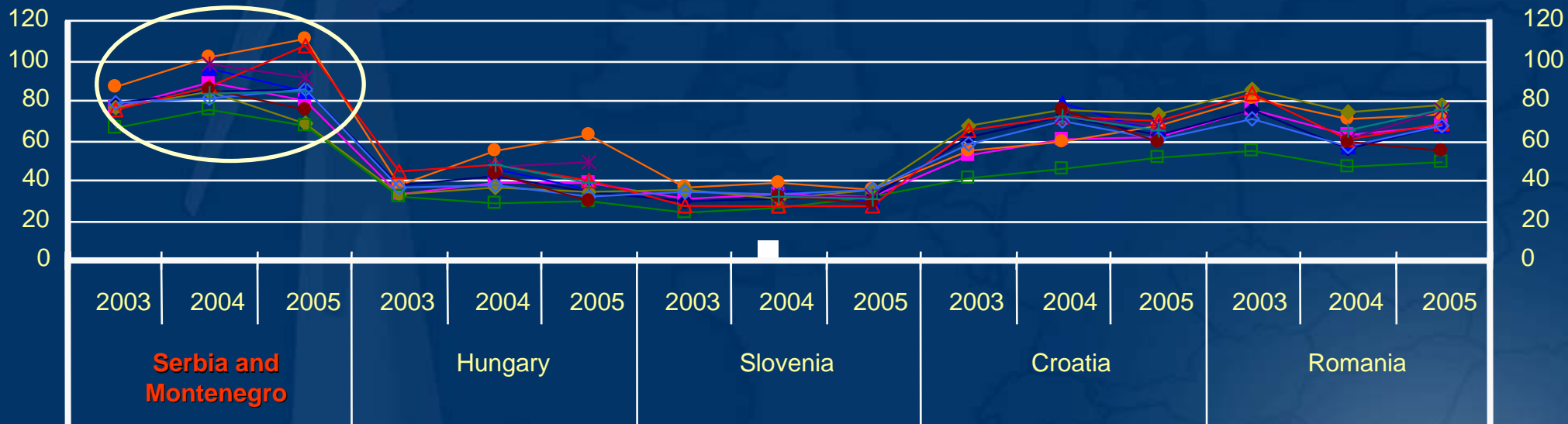
Global Competitiveness Index (2004-2005)



Global Competitiveness Index (2005-2006)



Competitiveness Benchmark (2003-2005)



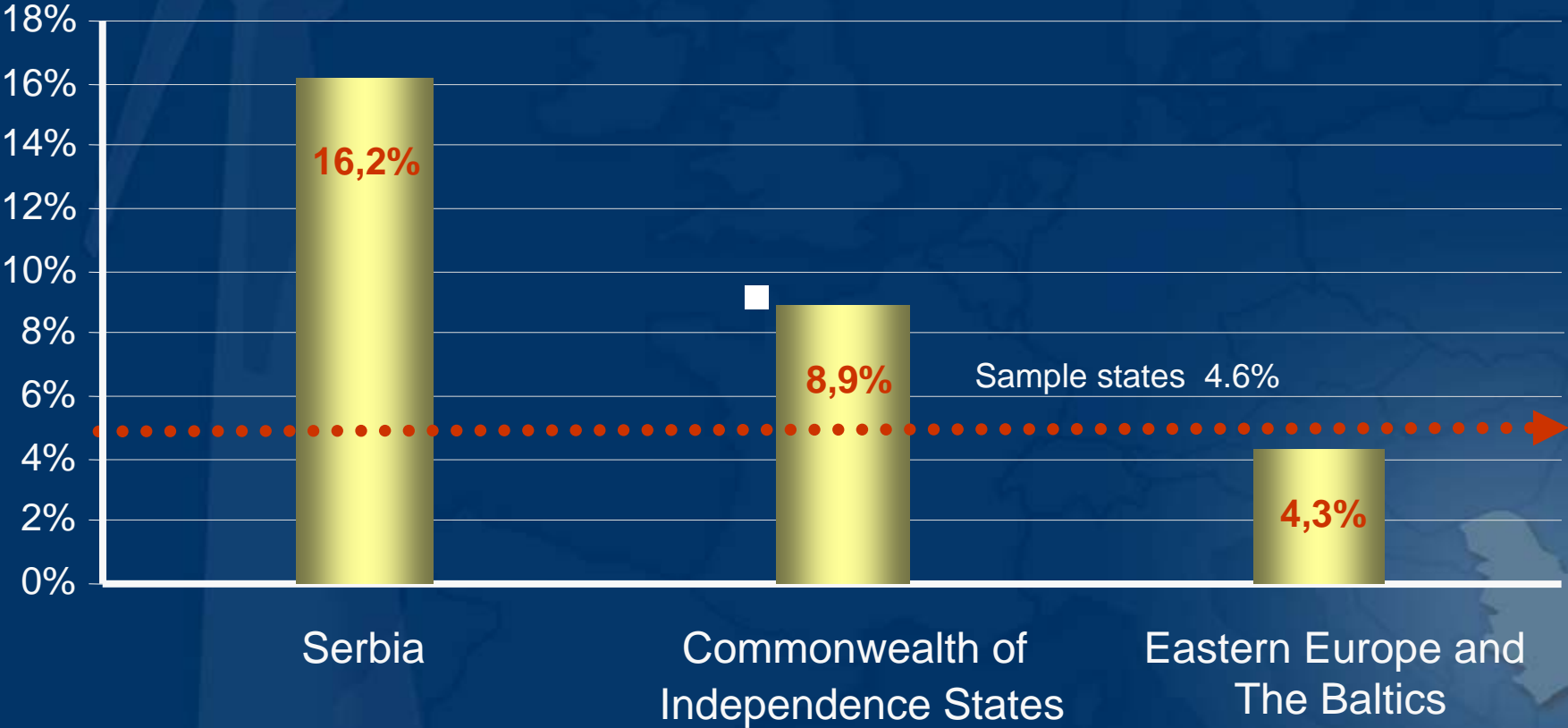
17 Years of Deep Economic Crisis

- **Three stages of crisis:**
 - Geopolitical shock
 - Transitional stagflation
 - Transitional shock
- **Law level of competitiveness:**
 - Bust of economic activities
 - Inflation pressure
 - Indebtedness
 - Current account deficit

Bust of Economic Activities

	GDP_{01}/GDP_{89}	GDP_{02}/GDP_{89}	GDP_{03}/GDP_{89}	GDP_{04}/GDP_{89}	GDP_{05}/GDP_{89}
Serbia and Montenegro	0,47	0,50	0,51	0,54	0,56
Hungary	1,09	1,12	1,15	1,20	1,25
Slovenia	1,14	1,19	1,20	1,25	1,30
Croatia	0,85	0,88	0,91	0,93	0,97
Romania	0,83	0,88	0,91	1,00	1,05

Inflation in the Year 2005



Inflation in the Year 2006

- **Inflation rate**
 - *October 2005- October 2006 - 9,7%*
- **Consumer price index**
 - Projection –below 10%



Transitional Stagflation

	Serbia & Montenegro		Hungary		Slovenia		Croatia		Romania	
	Inflation Rate	Growth Rate	Inflation Rate	Growth Rate	Inflation Rate	Growth Rate	Inflation Rate	Growth Rate	Inflation Rate	Growth Rate
'90	580,4	-6,6	28,9	-3,5	550,0	-4,7	136	-8,6	5,1	-5,6
'91	118,1	-8,2	35,0	-11,9	118,0	-8,1	149	-14,4	174,5	-12,9
'92	<i>mega</i>	-27,9	23,0	-3,0	201,0	-5,4	937	-9,0	211	-10,0
'93	<i>mega</i>	-30,8	22,5	-0,6	33,0	1,3	1550	-8,0	256	-1,5
'94	3,3	2,5	18,8	2,9	21,0	5,3	97,0	5,9	136	3,9
'95	78,6	6,1	28,2	1,5	13,5	4,1	2,0	6,8	32,3	7,1
'96	94,3	7,8	23,6	1,3	10,0	3,5	3,5	6,0	38,8	3,9
'97	21,3	10	18,3	4,6	8,4	4,6	3,6	6,5	155,0	-6,1
'98	29,5	1,9	14,3	4,9	8,0	3,8	5,7	2,5	59,1	-5,4
'99	37,1	-18	10,0	4,2	6,1	5,6	4,2	-0,9	45,8	-1,2
'00	60,4	5,0	9,8	5,2	8,9	4,1	6,2	2,9	45,7	1,8
'01	91,1	5,5	9,2	3,8	8,4	2,7	4,9	4,4	34,5	5,3
'02	21,2	3,8	4,8	3,5	7,5	3,5	2,2	5,2	22,5	4,9
'03	11,3	2,7	4,9	2,9	5,6	2,7	1,8	4,3	15,4	5,2
'04	9,5	7,2	6,8	4,2	3,6	4,2	2,1	3,8	11,9	8,3
'05	16,2	4,0	3,8	3,5	2,5	3,8	2,9	3,5	9,2	5,5

Indebtedness

- **US \$ 15.1 billion external debt as of December 31, 2005**
 - High level of indebtedness:
 - Debt/GDP=0.57 (<0.8)
 - Debt/Export=3.36 (<2.2)
- **US \$ 18.5 billion external debt as of September 31, 2006**

Current Account Inbalances

- **Trade deficit:**
 - US \$ 7 billion for the year 2004
 - US \$ 5.1 billion for the year 2005
 - > US \$ 6 billion for the year 2006 - *projection*
- **Unfavorable structure of export:**
 - More than 60% raw materials and unprocessed agriculture products

SWOT

STRENGTHS

1. PRIVATIZED COMPANIES
2. NEW COMPANIES
3. REMITTANCES
4. AGRICULTURE LAND
5. POSITION TO MARKET

OPPORTUNITIES

12. ORGANIC FOOD
13. CLEAN ENERGY
14. "CRITICAL MASS" OF MARKET

WEAKNESSES

6. STRUCTURAL DEFECTS
7. HIGH LEVEL OF INDEBTEDNESS
8. THE RELATIVELY SMALL PRIVATISED SECTOR
9. TRADE DEFICIT
10. ECONOMIC FREEDOM
11. MACROECONOMIC INSTABILITY

THREATS

15. GEOPOLITICAL INSTABILITY
16. ENERGY PRICES GROWTH
17. TECHNOLOGY PROGRESS

Renewables

- **Three levels of problem:**
 - Policy level
 - Business level
 - Academic level

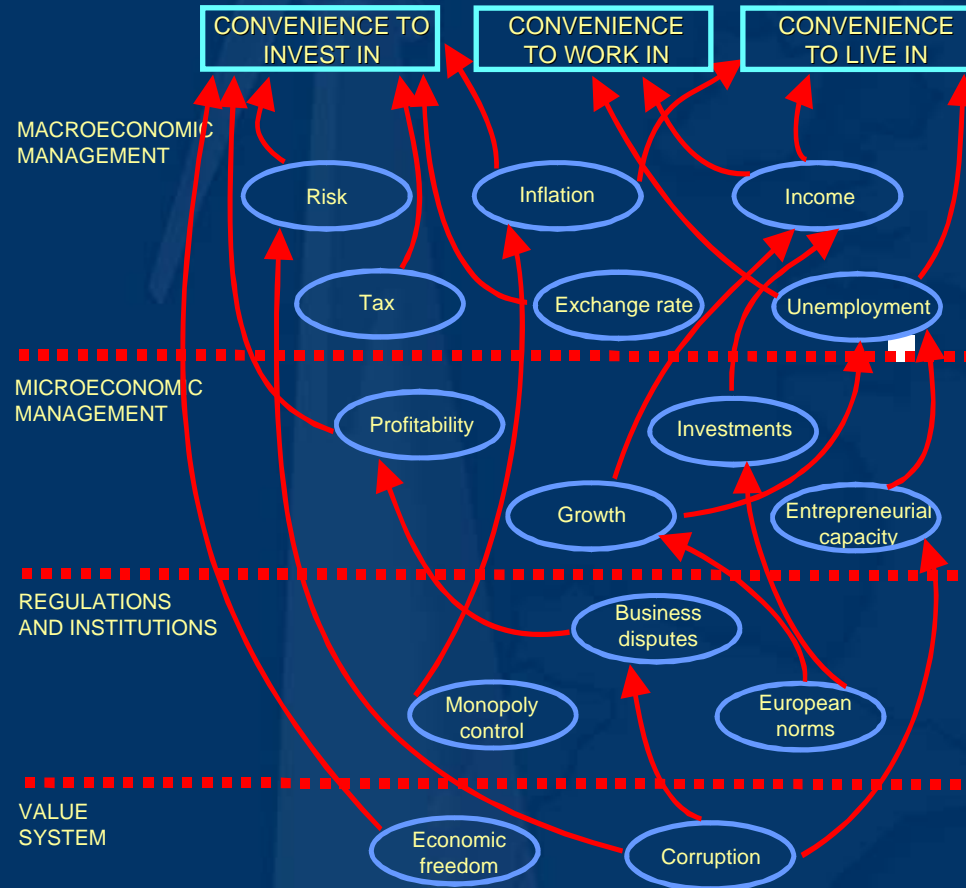


Strategy Process



Strategy of Competitive Development

STRATEGY MAP



BALANCED SCORECARD

MEASURES	OBJECTIVES	INITIATIVES
<ul style="list-style-type: none"> Discount rate Tax burden Consumer price index Exchange rate GDP p.c/PPP p.c. 	<ul style="list-style-type: none"> <12% <50% PI <10% Fluctuated > USD 9000-12000 	<ul style="list-style-type: none"> BOT projects Public sector restructuring Tourism development
<ul style="list-style-type: none"> ROI Real growth rate FDI Value creation % New enterprises 	<ul style="list-style-type: none"> >8% 6-8% USD 3 bil > 8% > 20% 	<ul style="list-style-type: none"> PPP projects Cluster development Technology parks Business incubators
<ul style="list-style-type: none"> Market shape Bankruptcy procedure Consumers standards Ecology standards 	<ul style="list-style-type: none"> >50% <6 months > 80% EU norms 	<ul style="list-style-type: none"> Renewables Organic food IPO
<ul style="list-style-type: none"> Heritage index Transparency index 	<ul style="list-style-type: none"> >5-6 2.5-2.6 	<ul style="list-style-type: none"> Demetropolization

RS without K&M – Energy Balance 2004

		REALIZED 2002.	ESTIMATION 2003.		PLAN 2004.	
		Mtoe	Phys. units	Mtoe	Phys. units	Mtoe
1	PRIMARY ENERGY PRODUCTION	7.84	-	8.01	-	8.07
	Coal	5.98	-	6.18	-	6.18
	Oil	0.67	682	0.68	668	0.68
	Gas	0.27	341	0.27	302	0.24
	Hydropotential	0.93	10118	0.87	11214	0.96
	Other sources (biomass, geothermal, solar energy, wind)	0.00	0	0.00	0	0.00
2	NET IMPORT	4.60	-	4.75	-	5.34
	Coal	0.32	-	0.33	-	0.37
	Oil	2.69	2897	2.90	3287	3.29
	-Crude oil	2.56	2998	3.00	3332	3.00
	-Oil derivates	0.13	-101	-0.10	45	-0.10
	Gas	1.42	1884	1.50	2209	1.76
	Electricity	0.17	180	0.02	-840	-0.07
3	TOTAL PRIMARY ENERGY CONSUMPTION	12.44	-	12.75	-	13.40
	Coal	6.30	-	6.51	-	6.55
	Oil	3.36	3579	3.58	3954	3.95
	Gas	1.69	2226	1.77	2511	2.00
	Electrical power	0.17	180	0.02	-840	-0.07
	Renewables (hydropotential+other sources)	0.93	10118	0.87	11214	0.96
4	IMPORT DEPENDENCE(%)	39.96	-	37.22	-	39.88
5	SHARE IN TOTAL CONSUMPTION (%)		-		-	
	Coal	50.63	-	51.08	-	48.90
	Oil	27.01	-	28.07	-	29.51
	Gas	13.54	-	13.91	-	14.94
	Renewables (hydropotential+other sources)	7.50	-	6.82	-	7.20

RS without K&M – Energy Balance 2004

		REALIZED 2002.	ESTIMATION 2003.	PLAN 2004.		
6	TOTAL ELECTRICITY PRODUCTION**	2.57	31040	2.67	32080	2.76
	Thermal	1.61	20241	1.74	20249	1.74
	Hydro	0.93	10118	0.87	11214	0.96
	Geothermal	0.02	9438	0.06	617	0.05
7	ELECTRICITY PRODUCTION BY SOURCES	5.75	-	5.70	-	5.77
	Coal	5.59	-	5.46	-	5.67
	Oil	0.12	-	0.24	-	0.10
	Gas	0.04	-	0.00	-	0.00
8	SOURCES FOR OTHER TRANSFORMATION	4.08	-	4.44	-	4.54
	Rafinery	3.36	-	3.68	-	3.68
	Heating plant*	0.54	-	0.54	-	0.63
	Other non-specified sources	0.18	-	0.22	-	0.23
9	OWN CONSUMPTION	0.52	-	0.45	-	0.50
10	NON ENERGY CONSUMPTION	0.63	-	0.78	-	1.04
11	LOSES IN ELECTRICITY TRANSMISSION AND DISTRIBUTION	0.45	5302	0.46	4988	0.43
12	FINAL ENERGY CONSUMPTION	6.94	-	7.31	-	7.61
13	PRIMARY ENERGY EFFICIENCY	0.56	-	0.57	-	0.56
14	ENERGY INTENSITY	1.03	-	0.94	-	0.88

*Fossil fuels (natural gas, fuel oil, coal...) are included in final consumption

** Surplus of available electricity in relation to energy gross consumption is used for compensation

Thank you!

*“We may not be able to predict the future
■
but it doesn’t stop us preparing for it”*