Challenges and policy directions for the formation of a knowledge economy in Belarus

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Context

- The relevance of problem
- Strategic basics of Belarus's innovation policy
- The importance of international indicators
- The place of Belarus in international measurement of innovation
- The directions of innovation policy

- “The global vortex of new ideas, technologies and inventions is drawing in Belarus as well. Despite our being a middle-sized - by European standards - country without any global ambitions, we cannot think about our country separately from the world-wide processes.

  Incidentally, our choice is not that large. We can either adjust to the stormy and rapid changes, or remain off the mainstream of historic development. There is no third alternative.

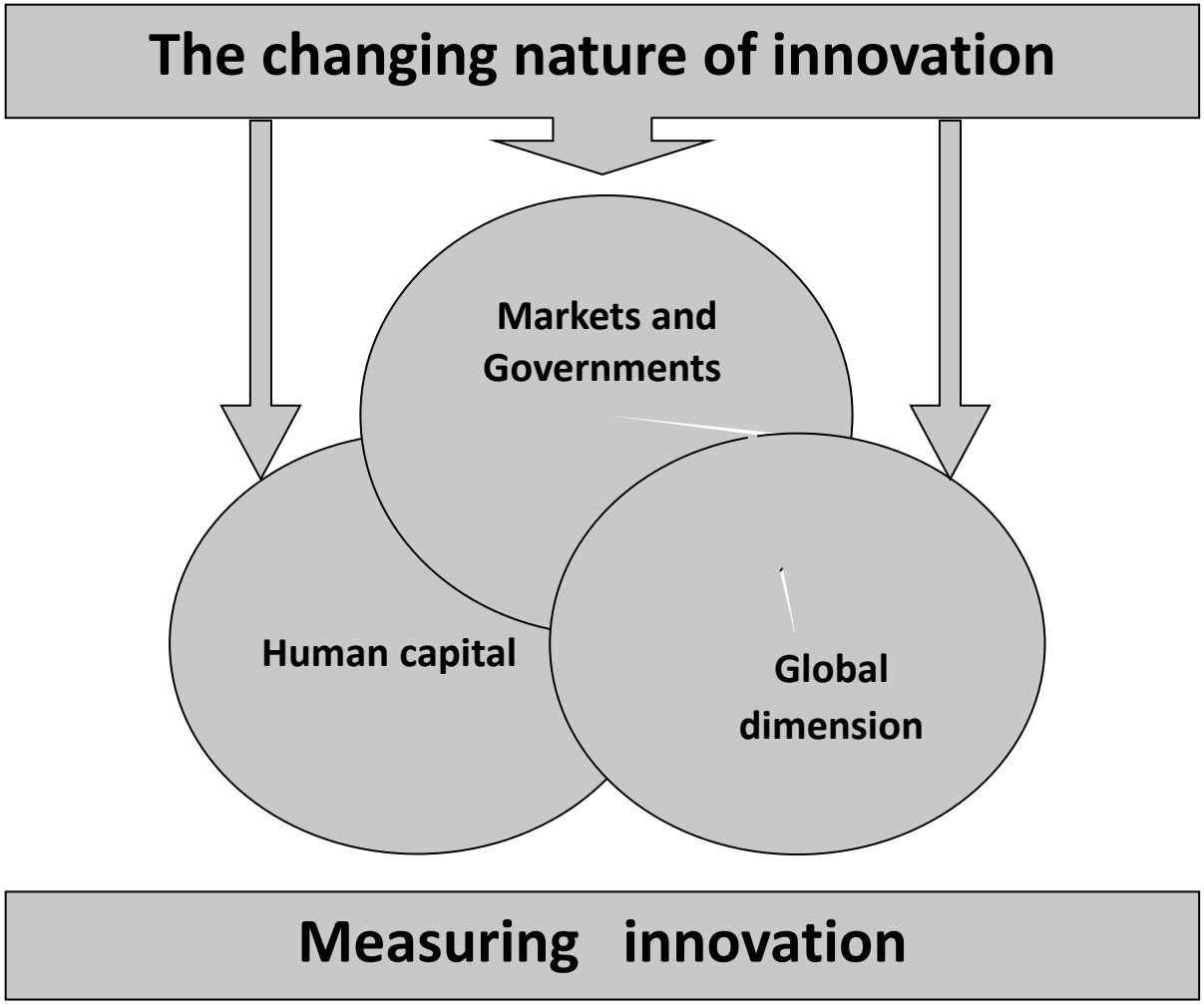
(from the Address of President A. Lukashenka of Belarus to the Belarusian people and the National Assembly, 2013)

Innovation policy of Belarus has strategic basics

- **The Concept of National Innovation System (NIS) of Belarus, 2006.**
- **The State Program of Innovative Development for 2011-2015.**
- **The Program of the Industrial Complex of the Republic of Belarus for the period up to 2020.**
- **The Strategy of Technological Development of the Republic of Belarus for the period up to 2015.**
- **The Strategy of the Republic of Belarus in the field of intellectual property rights for 2012-2020.**

Why we need international indicators

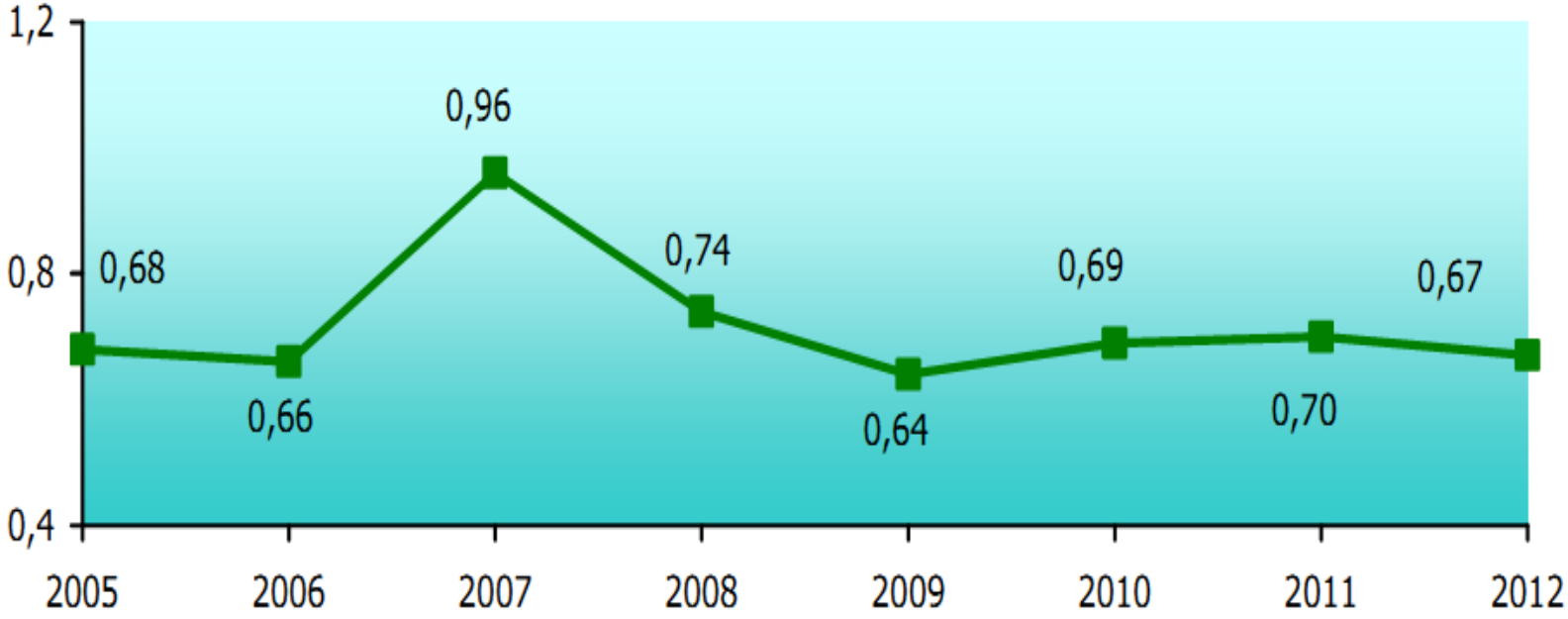
- The Government Action Program of Belarus for 2011-15 provides a set of measures for the accession of Belarus, among the leading countries, to the international ratings.
- Measurements of innovative development should be comparable; only this way one can determine whether the "innovativeness“ is high or low.
- Comparison might be made for one system or for the dynamics between the different innovation systems.
- Comparisons do not provide the existence of some "optimal" system.


The changing nature of innovation
Markets and Governments
Human capital
Global dimension
Measuring innovation

Belarus and innovation ratings

- **The Knowledge Economy index –** 59 out of 142
- **Human development report-**50 out of 172
- **The Global Innovation index-** INSEAD, WIPO – 2012 - 78 out of 141
- **European Innovation Scoreboard-** did not participate- (Calculations are made by a team of the Belarus State Economic University in 2010)
- **The Global Competitiveness Index** IMD – did not participate

Traditional indicators: Intramural R&D expenditures



Comparisons: GERD- EC-2%; USA-2,8%, Japan-3,4%; China-1,6%

Traditional indicators: R&D personnel per 10 000 employed in economy

	2005	2010	2011	2012
Number of R&D personnel per 10 000 employed in economy, persons	**68,5**	**68,0**	**67,3**	**66,6**

EU (2009) -168

Source: Science, technology and innovation in Europe. Eurostat , 2012

Traditional indicators: **Innovation activities , %**

	2005	2010	2011	2012
Share of innovation-active organisations in total number of industrial organisations surveyed, percent	14.1	15.4	22.7	22.8
Share of shipped innovative production in total volume of shipped industrial production, percent	15.2	14.5	14.4	17.8

51.6%EU27 enterprises are active in innovation

Source: Science, technology and innovation in Europe. Eurostat , 2012

The shortcomings of traditional indicators of innovation

- Focus of innovation resources (expenditure on research and development)
- Lack of evaluation to competence building for the innovation economy
- Incomplete description of the process of innovation
- Weak measurement of innovation outputs

BELARUS and Indexes of innovation development:

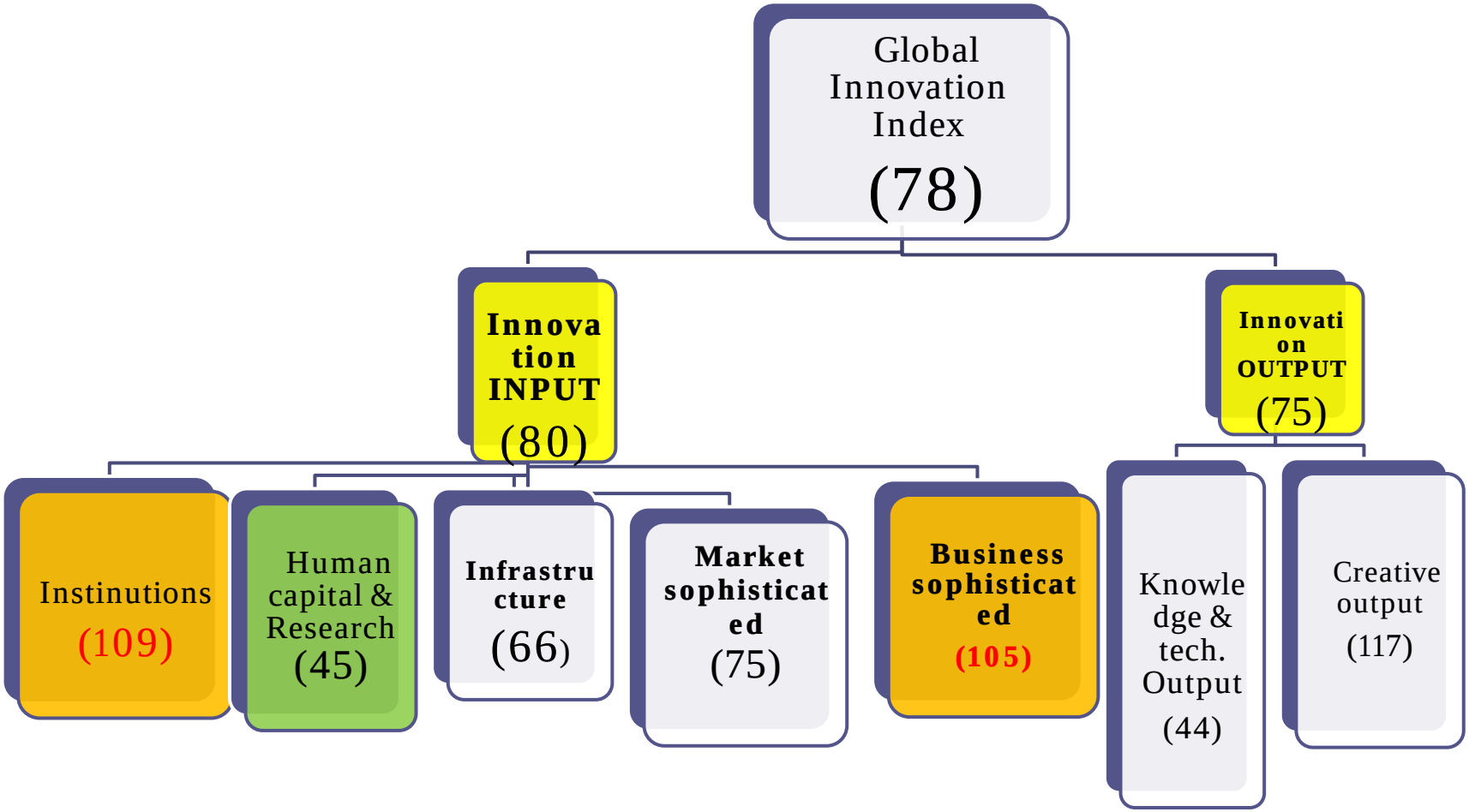
- KAM index(Knowledge economy index)
- GII index(Global innovation index)
- IUS (EIS) (Innovation Union Scoreboard)

Knowledge economy index(1995-2012)

Source: Knowledge for Development (K4D) Program of the World Bank Institute www.worldbank.org/kam

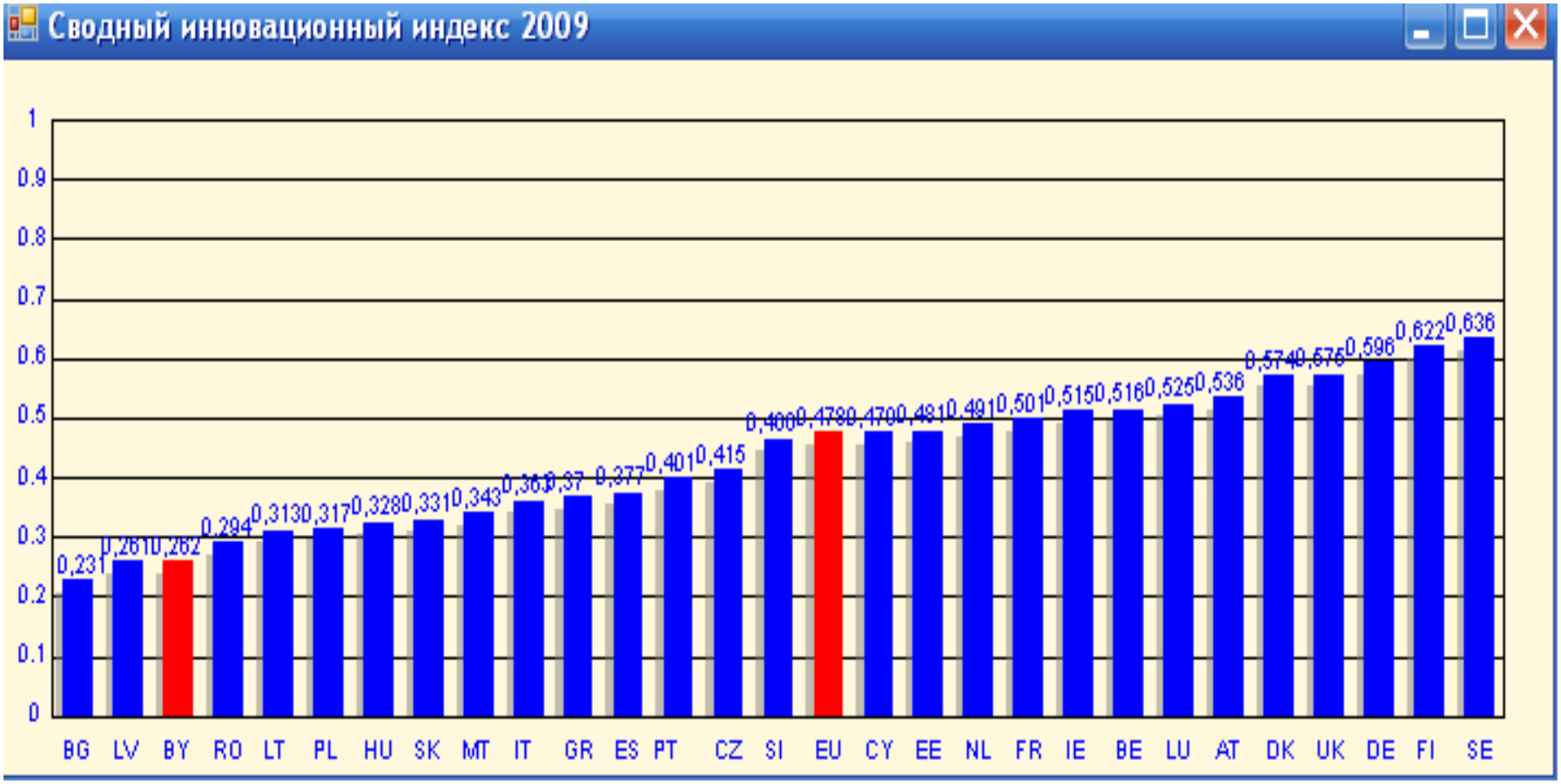
Country (RANK 1995-2012)	KEI		Economic Incentive and Institutional Regime		Innovation		Education		ICT	
	1995	2012	1995	2012	1995	2012	1995	2012	1995	2012
Russia (59-55)	5.67	5.78	2.6	2.23	5.94	6.93	7.84	6.79	6.6	7.16
Kazakhstan (79-73)	4.93	5.04	1.95	3.6	4.03	3.97	7.26	6.91	6.48	5.32
Belarus (55- 59)	**5.81**	**5.59**	**2.51**	**2.50**	**5.42**	**5.7**	**8.29**	**7.37**	**7.03**	**6.79**

The Global innovation index 2012- GII Belarus-78 rank



Innovation Union Scoreboard in the EU

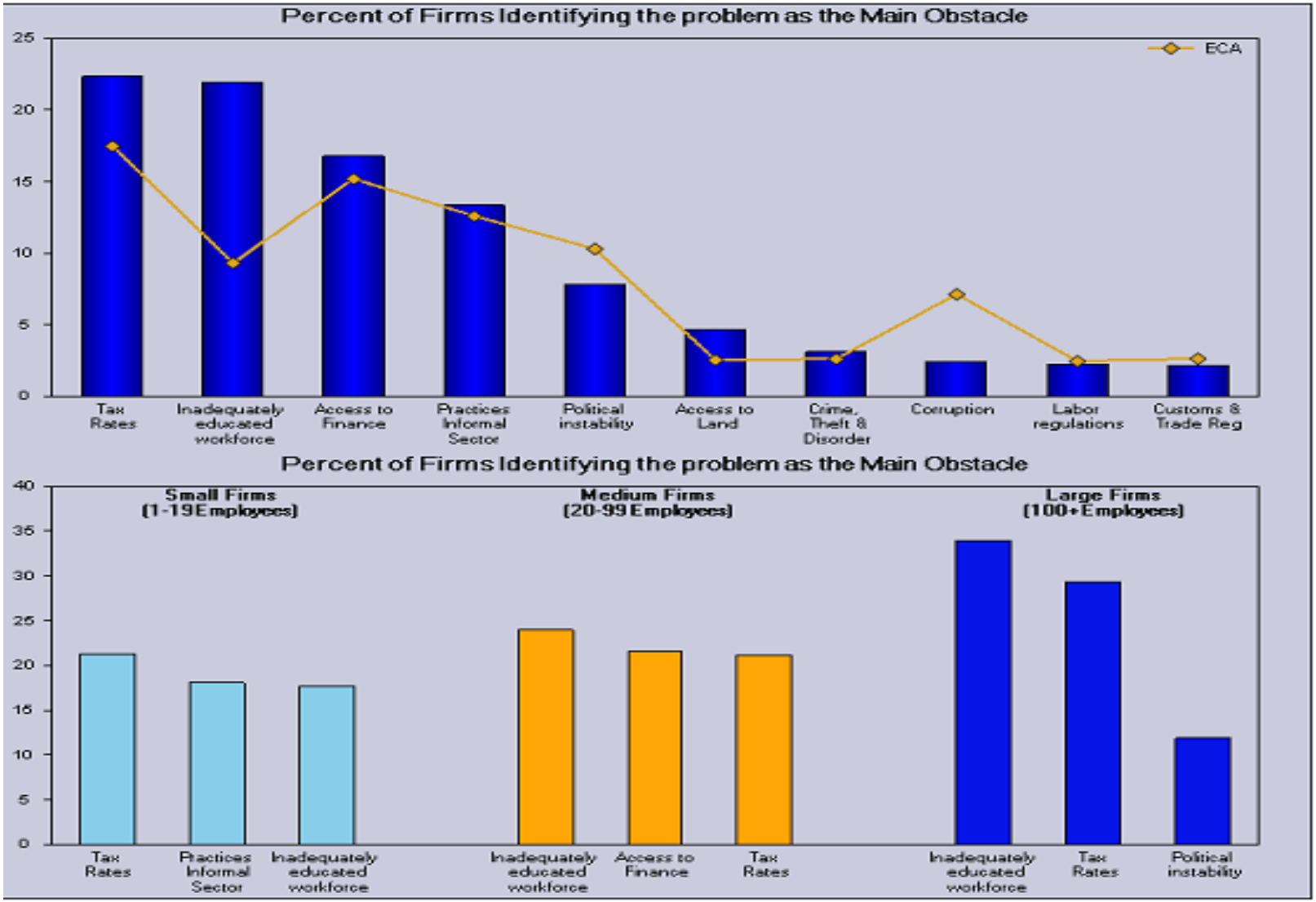
INNOVATION PERFORMANCE :Belarus in the context of SUMMARY INNOVATION INDEX SII-2009



New directions of innovation measurement (IUS 2012 and Belarus)

	EU-27	Belarus
Human Resources		
1.1.1 New doctorate graduates (ISCED6) per 1000 population aged 25-34	1.5	0.4
1.1.2 Percentage population aged **30 -34** having completed tertiary education	33.6	59.6
1.1.3 Percentage youth aged 20-24 having attained at least upper secondary education	79.0	92.6

Snapshot of the Business Environment in Belarus



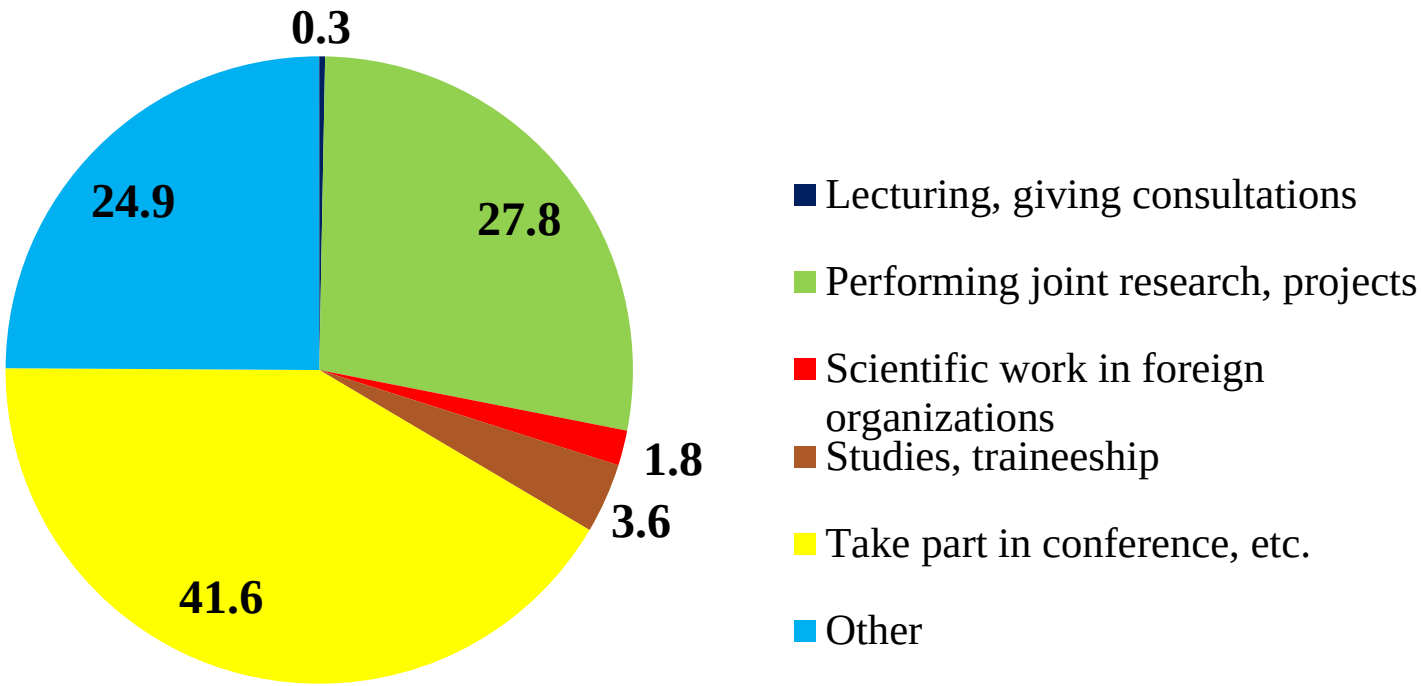
OPEN, EXCELLENT AND ATTRACTIVE RESEARCH SYSTEMS (IUS2012)

	EU-27	Belarus
1.2.1 International scientific co-publications per million population Thomson/Scopus	301	73
1.2.2 Scientific publications among the top 10% most cited publications worldwide as % of total scientific publications of the country Thomson/Scopus	10.73	-
1.2.3 Non-EU doctorate students per million population- Eurostat/OECD	19.19	4,62 1)

1) Доля иностранных граждан в общей численности лиц, получающих послевузовское образование,процентов.) Source: BelSTAT. 2012

MOBILITY

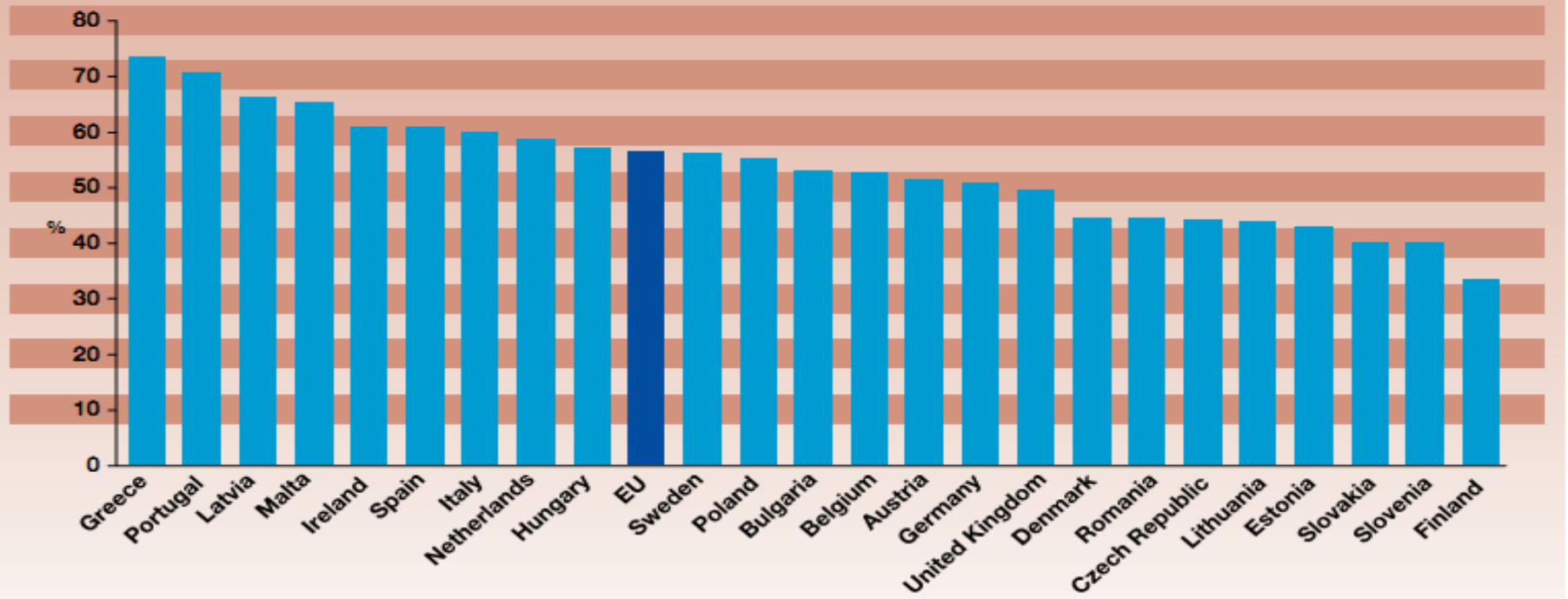
RESEARCHERS WHO WORKED ABROAD (BY PURPOSE OF DEPARTURE): 2008, Belarus



Sourse: Belstat

Mobility researcher in HES, EU -27

FIGURE II.5.6 **Share of researchers in the higher education sector with international mobility experience (of at least three months duration), 2009**



Source: Innovation Union Competitiveness Report 2011

Enclave NIS of Belarus

The lack of integration into the global scientific and technical space

3.2.5 Licence and patent revenues from abroad as % of GDP (IUS-2013)

- EU- 27- 0.58% Belarus-0.036%

(lagging is 14-fold)

The weakness of small business in innovation (comparison IUS-2013 and Belarus 2012)

Linkages & Entrepreneurship	EU-27	Belarus	Source
2.2.1 **SMEs innovating in-house as % of SMEs**	**31.83**	**4.21**	Eurostat Belstat
2.2.2 **Innovative SMEs collaborating with others as % of SMEs**	**11.69**	**0.99**	Eurostat Belstat

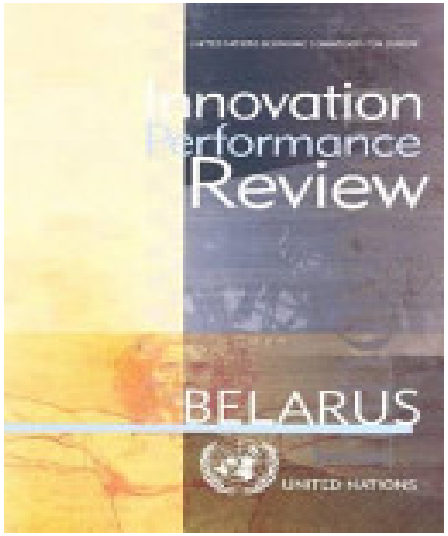
Structure of innovation expenditures, %

Type of innovation expenditures	Kazakhstan(2010)	Belarus(2011)	Russia(2010)
Research and development	10.9	25.4	20.5
Acquisition of machinery and equipment	27.8	65.6	54.3
Acquisition of new technologies	6.7	0.1	1.3
Technological innovation-related personnel training	1.5	0.0	0.2
Technological innovation -related marketing research	0.0	0.3	0.5
Other expenditures	53.1	8.6	23.2
Total	100	100	100

Challenges of innovative development of Belarus in the context of international indicators

- National innovation system is based on a linear model of innovation (STI- concept), underestimation of model based on learning (DUI-concept).
- Underestimation innovation as a global, complex, dynamic and non-linear system
- International indicators provide guidance for the development of new mechanisms for innovation policy and enables to evaluate its effectiveness
- Transition from the ***technocratic*** model of innovation policy to the ***holistic model***.

Innovation Performance Review of Belarus / UNICE 2011



The law "The state innovation policy and innovation development in the Republic of Belarus (July 10, 2012)

R&D RATIOS IN SALES FOR state ENTERPRISES /Ministerial Council 28.02 2014. №187

compulsion to innovate

Presidential Decree **May 20, 2013 N 229**

CERTAIN MEASURES TO STIMULATE implementation of innovative projects

Budget subsidies for startups (venture capital) through **innovation grants** and **innovative vouchers**

The concept of formation and development of **innovative industrial clusters in the Republic of Belarus** / CM on **January 16, 2014 № 27**

Regional innovations

Program of improvement of the **scientific sphere 2014**

Innovation policy directions

- increasing GERD in GDP
- conditions for dialogue and check the results of the reached agreements;
  • new indicators reflecting the impact of innovation on economic performance;
  • initiatives to create a business environment conducive to innovation;
  • proposals for the dissemination of best practices
- evidence-based analysis and benchmarking

Benchmarking

It is important to combine creating general pro-business environment with the support of innovative projects, but with a focus on demonstration effects, learning, participation Belarus in international comparative studies of the knowledge economy (GCI, Global Talent Competitiveness Index, PISA, ANELO..)

Thank you for your attention!

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