



**9th session of the Team of Specialists on Innovation and
Competitiveness Policies, UNECE,
Geneva, 3-4 November 2016**

Financing of Innovation in Ukraine

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General tendencies in innovation activities in industry - 1

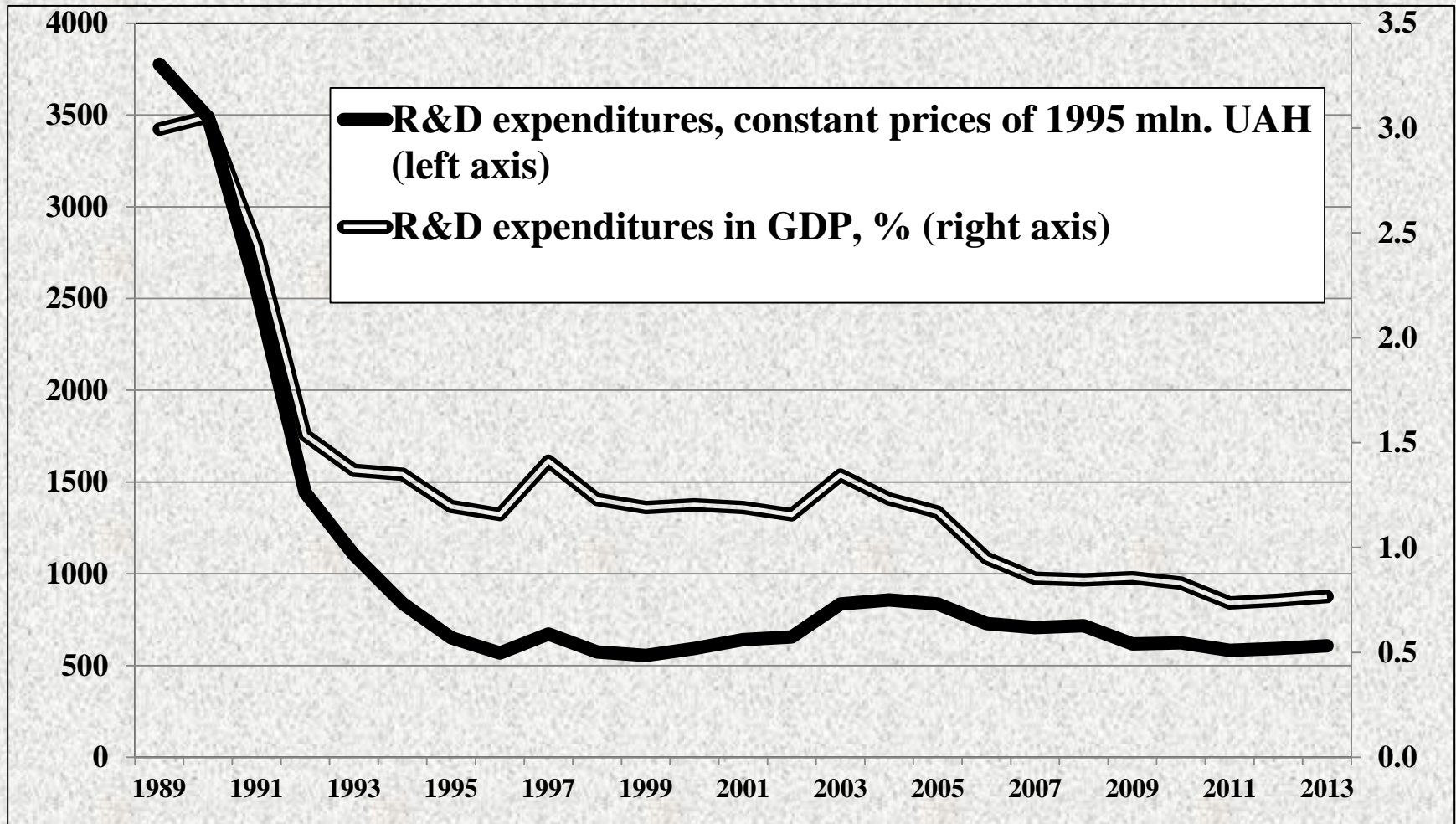
- Decline of R&D expenditures from 3% to less than 0.7% of GDP in 1990-2014, including decline from 0.85% in 2013 to 0.66% in 2014
- Worsening situation with bank's loans provision (more than 85% of innovation expenditures are made from own resources of companies) in 2012-2015
- No specialized VCs in Ukraine
- Decline of high tech production due to confrontation with Russia and wrong economic policy
- Outflow of leading specialists to other sectors and emigration

General tendencies in innovation activities in industry- 2

- Decline of share of innovation enterprises in recent 20 years from 18% (in late 1990s) to 12-14% (in 2013)
- Shrinking of high-tech sectors, the most innovative sector on a number of parameters is food industry
- Small number of innovative SMEs
- Two peaks of growth of innovation activities; 2007 (due to expansion of 'cheap' banking loans) and 2011 (due to solar energy program)

Key parameters of R&D financing in 1989-2013,

calculated by Dr. Igor Bulkin



Legislation in the innovation sphere

- **The Law of Ukraine "On innovation activity";**
- **The Law of Ukraine "On special regime of innovation activity of technological parks";**
- **The Law of Ukraine "On Scientific Parks";**
- **The Law of Ukraine "On the priority directions of innovation";**
- **The Law of Ukraine "On state regulation of activity in the sphere of technology transfer".**

Key problems of innovation and S&T in Ukraine-1

- The key contradiction is that the government and business do not utilize existing S&T potential (which is shrinking every year), and does not create adequate conditions for transformation of research system to adjust it to new realities.
- Ukrainian legal system in R&D area is not harmonized, as some lobbying groups with the help of the Law on Budget could stop implementation of the most important clauses of the laws, which are aimed at support of innovations.

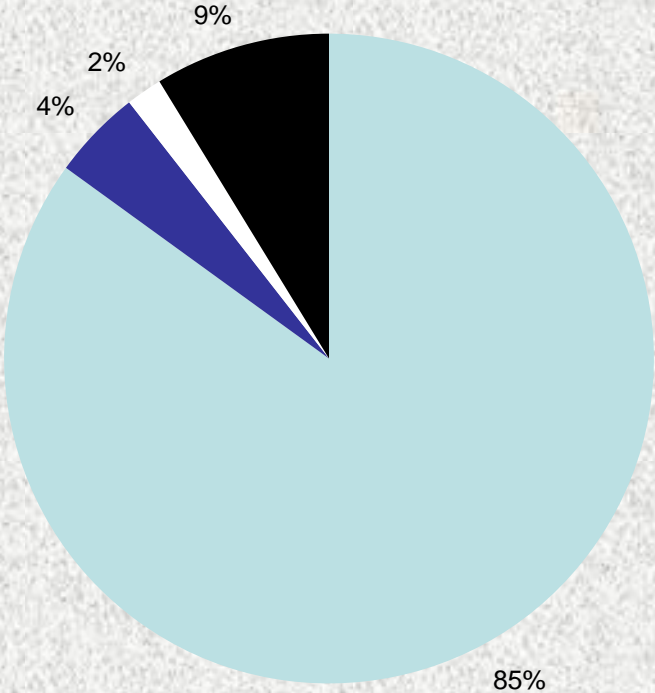
Key problems of innovation and S&T in Ukraine-2

- State agencies that have to support R&D, have overlapping functions, which are not clearly defined. The procedures of evaluation and selection of R&D projects are not transparent and fair for potential participants, some of them could receive substantial privileges thanks to their direct influence on the results of the competition.
- Support of specialized instruments and elements of R&D and innovation infrastructure are not very effective
- Low level of co-operation with foreign countries in R&D sphere

Structure of financing of innovation in industry in Ukraine, 2014

Sources of financing of innovation, %

Internal sources State budget Foreign investors Other sources



Financing of innovation from the state and local budgets 2000-2014, %of the total financing of innovation in industrial sector

year	2000	2005	2010	2014
%	2.4	0.8	1.2	5.0

Financing of innovation from the foreign sources in 2000-2014, %of the total financing of innovation in industrial sector

year	2000	2010	2013	2014
%	12.4	30.0	13.2	2.0

Results of CIS-type surveys in Ukraine

- 3 surveys were made in 2008-2014 (results of two of them are published)
- The shares of innovative companies in the Ukrainian economy were between 18% and 25% in these years, which was worse than the less the 'weak' innovators in the EU demonstrated in the same period
- However, these figures correlate with all major indexes of competitiveness for national economies, which are used for international comparisons.
- 'Paradox': These figures are usually higher than figures for the industrial sector. Reason: high share of ICT services in the economy

EXAMPLE of problems

:Nanotechnologies and nanomaterials

Potential:

2008-2014: 70-74 organizations were involved in corresponding activities every year

Ukraine has a number of national programs in nanotechnologies, however, the share of foreign financing was 40.7% (more than 150 research grants from abroad)

However:

- Low general level of financing
- Low involvement of private sector in innovation in high-tech sectors
- Very few specialists are trained on these disciplines in Ukrainian universities

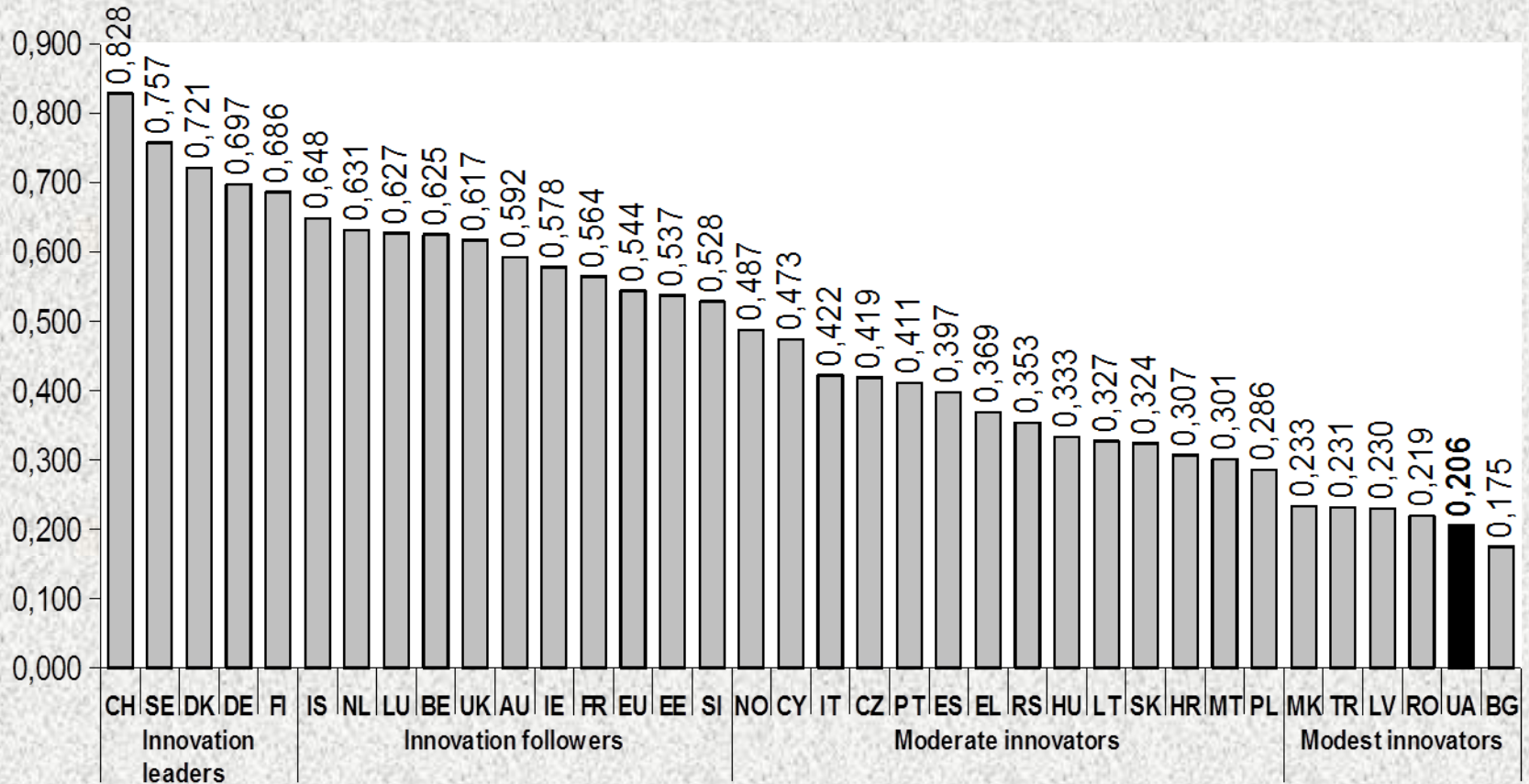
Scoreboard Indicators for Ukraine – 2011-2015

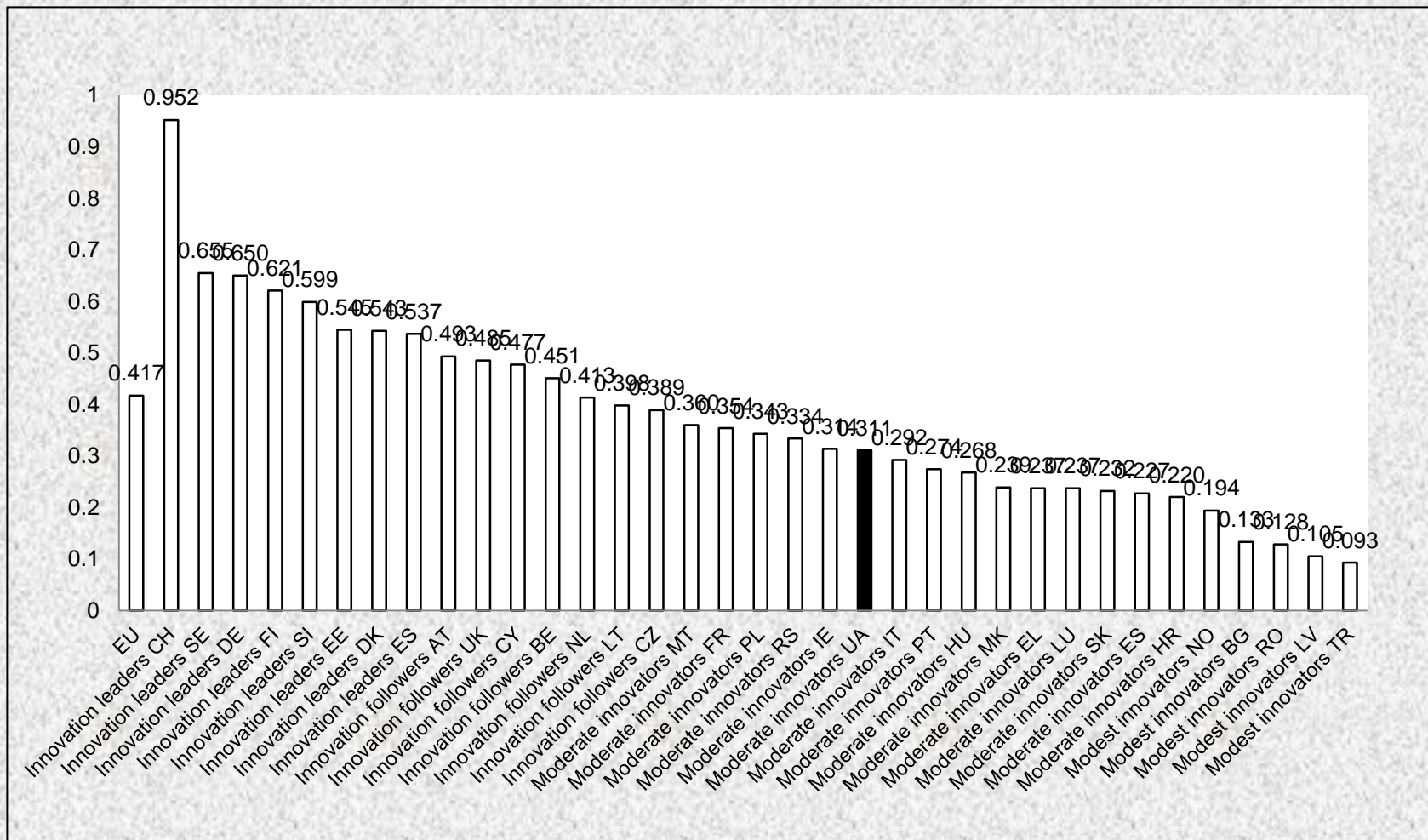
	Indicator	2011	2012	2013	2014	2015
1.1.1.	New doctorate graduates (ISCED 6) per 1000 population aged 25-34	1,0	1,0	1,0	1,0	1,0
1.1.2.	Percentage population aged 30-34 having completed tertiary education	-	-	-	47,3	50,3
1.1.3.	Percentage youth aged 20-24 having attained at least upper secondary level education	-	-	-	58,0	61,7
1.3.2.	Venture capital investment as percentage of GDP	-	-	-	-	0,002

Scoreboard Indicators for Ukraine – 2011-2015

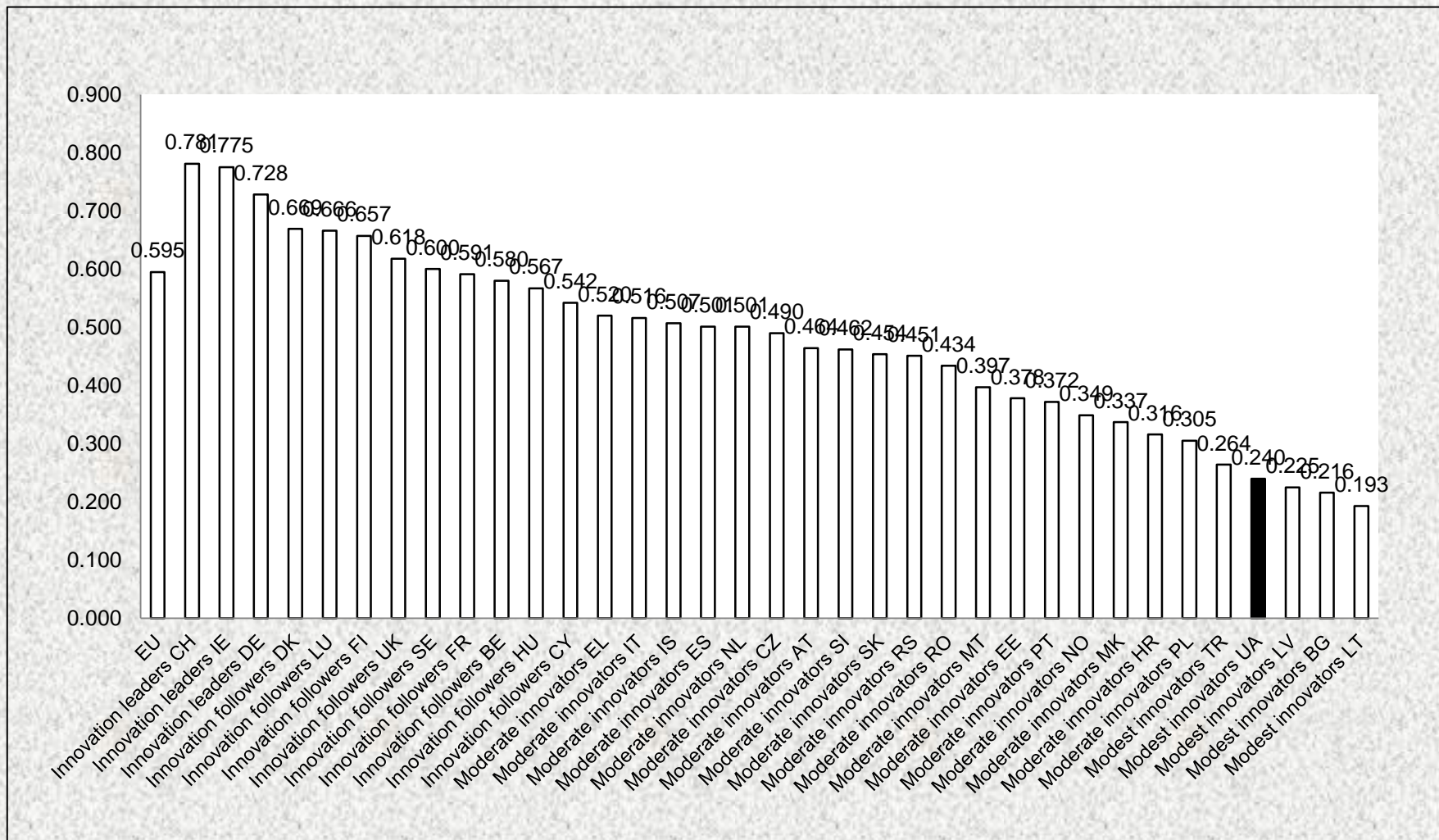
	Indicator	2011	2012	2013	2014	2015
2.1.2.	Non-R&D innovation expenditures as percentage of turnover	0,8	0,6	0,9	0,7	0,5
2.2.1.	SMEs innovating in-house as percentage of SMEs	-	-	-	19,6	18,7
2.2.2.	Innovative SMEs collaborating with others as percentage of SMEs	-	-	-	1,7	1,5
2.3.1.	PCT patents applications per billion GDP (in Purchasing Power Standard €)	9,3	7,9	7,2	7,6	8,9
2.3.3.	Community trademarks per billion GDP (in Purchasing Power Standard €)	0,1	0,1	0,1	0,1	0,1

Summary innovation index for EU, Ukraine and possible competitors 2014.





Ukraine among the countries surveyed by the indicator "Firm investments" 2014.



Pic. 5. Ukraine among the countries surveyed by the indicator «Economic effects» 2014.

Conclusions I

- The transformation of national innovation system with special attention to cooperation between enterprises, state research institutes and universities is critically important for the country.
- Ukraine needs much more institutions that would have potential to finance innovation sector. These institutions have to accept high level of risks for high potential profits and the same time, they will not require collateral, nor charge interest payments.
- It would be also important to provide not only short-term, but also long-term and at least medium term loans and to contribute to boost innovation activities.

Conclusions II

- It is evident, that at the current stage of development, it would be extremely difficult to obtain financing for innovative enterprises from private sources in Ukraine. That is why the state has to play more active role in stimulating creation and development of such cooperation within the national innovation system in Ukraine.
- There is a plethora of different types of incentives, that government could use, including financial and fiscal incentives, direct lending programmes and so on.
- The problem lies in choosing right combination of these incentives, as government involvement easily creates market distortions, cause problems of moral hazard and adverse selection.

Conclusions III

- Bearing in mind rapid changes in technology and markets and the increasing focus on exports, banks, private venture funds and state organizations have to develop specific expertise in project evaluation. Existing domestic technologies and know-how could be commercialized.
- At the same time, technology transfer from the foreign countries could help to solve not purely economic, but also environmental and social problems, from which Ukraine is suffering.
- Special attention has to be paid to the development of cooperation with the EU states. This cooperation brings important expertise in the most advanced areas, and it will help to compensate above-mentioned shortcomings in innovation sphere in Ukraine.

Thank you for your attention!