NATIONAL RESEARCH UNIVERSITY

National Innovation Surveys in Russia

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International Training Workshop

R&D and Innovation Statistics

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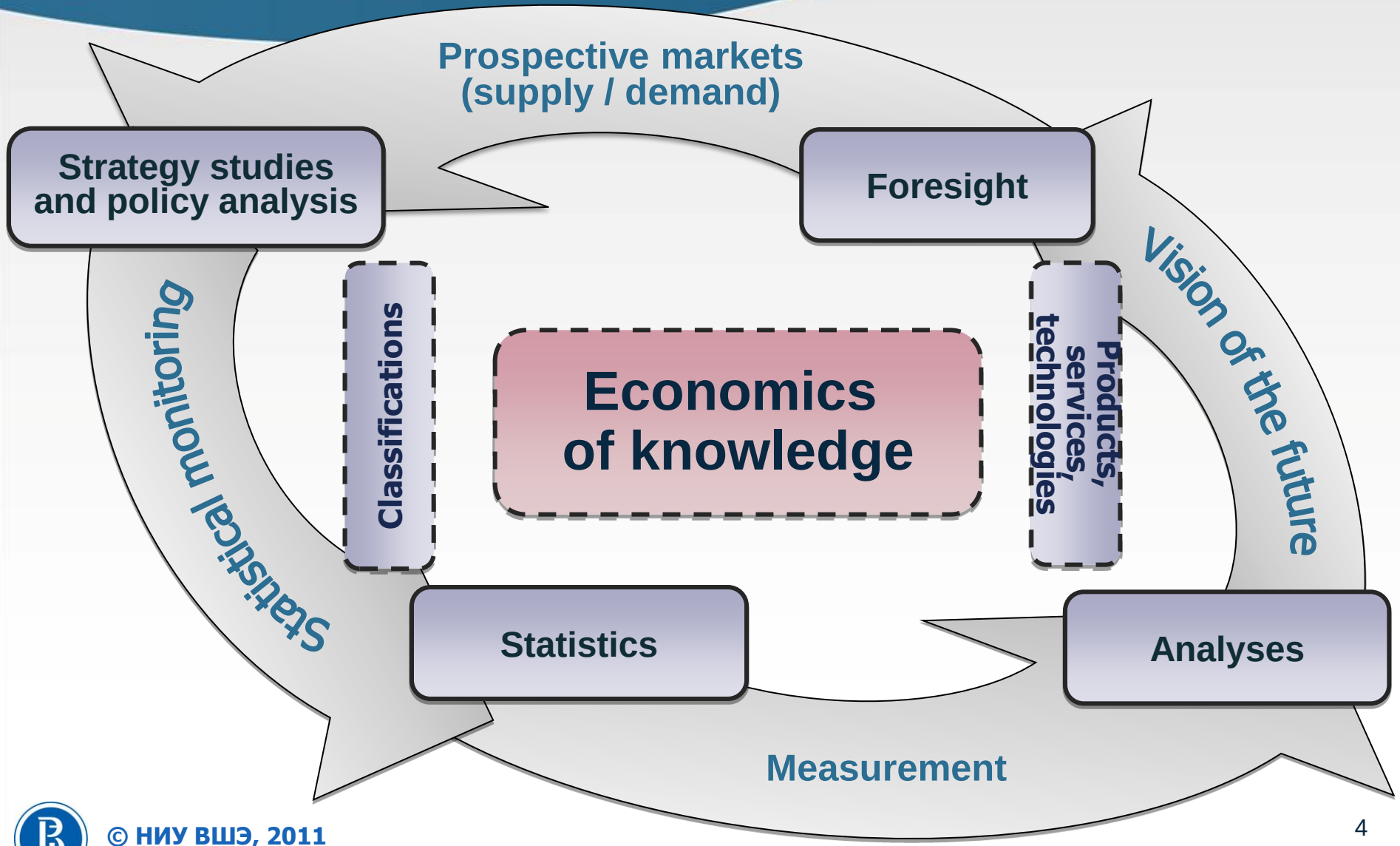
HSE Institute for Statistical Studies and Economics of Knowledge (ISSEK)

Established in 2002 (the core group – since 1989)

Objectives

- to develop statistics on S&T and innovation, education and training, information society in the Russian Federation
- to supply policy makers and general public with comprehensive up-to-date and internationally comparable data and indicators
- to provide analysis and forecast of trends in S&T, innovation, education, ICT and knowledge economy
- to develop recommendations on economic, S&T, innovation, education and ICT policies
- to promote international S&T co-operation

Statistics - Foresight - Policy design



Innovation Surveys in Russia

- **Since 1994**
- **Compatible with international standards (OECD / Eurostat Oslo Manual, EU CIS)**
- **Key methodological principles:**
  - Initial focus on technological innovations; now – organisational and marketing innovations also; since 2009 – innovation with environmental benefits
  - Considering enterprises as statistical units
  - Classification of innovation activities
  - Distinguishing product and process innovations new for a surveyed enterprise
- **Annual mandatory survey**

Innovation activity

– type of activity related to transformation of ideas (usually, R&D results or other S&T achievements) into technologically new or improved products or services introduced on a market, technologically new or improved processes or techniques of production (transfer) of services, used in practice. Innovative activities envisage a complex of scientific, technological, organisational, financial, and commercial actions, which in a combination lead to innovations.

Identification of Innovating Enterprises

= participation in innovative activities (during the period under review)

- Research and development
- Acquisition of embodied technology (machinery & equipment) for the implementation of innovations
- Acquisition of disembodied technology – patents, licenses, industrial prototypes, utility models, know-how, engineering services
- Acquisition of software for the implementation of innovations
- Design, other preparations for production of new products or introduction of new services or methods of their production (transfer) (tooling up and industrial engineering)
- Training and retraining of personnel
- Marketing of new or improved products

Russian Innovation Survey: 2008-2010

- **Annually**
- **Statistical units = legal entities involved in mining and quarrying, manufacturing, electricity, gas and water supply, communications, computer and related activities, other business activities, R&D (since 2011)**

Major Issues

- Innovative vs. non-innovative enterprises
- Expenditure on technological innovation (by innovative activity, source of funds, type of innovation)
- Intramural R&D units
- Sales of innovative products & services (by novelty, e.g. exports)
- Effects of innovation
- Hampering factors
- Sources of information for innovation
- Innovation co-operation
- Technology acquisition & transfer
- Organisational innovations
- Marketing innovations (since 2006)
- Expenditure on organisational and marketing innovation (since 2006)
- Innovation with environmental benefits (since 2009)

Russian Innovation Survey: Harmonization with CIS-2008

- **Detailed analysis of process innovations**
  - New or significantly improved methods of manufacturing or producing goods or services
  - New or significantly improved logistics, delivery or distribution methods for goods or services
  - New or significantly improved supporting activities for processes, such as maintenance systems or operations for purchasing, accounting, or computing
- **New to the world degree of novelty**
- **India and China were added to the list of countries for R&D partnerships**
- **“Innovations with environmental benefits” module added**

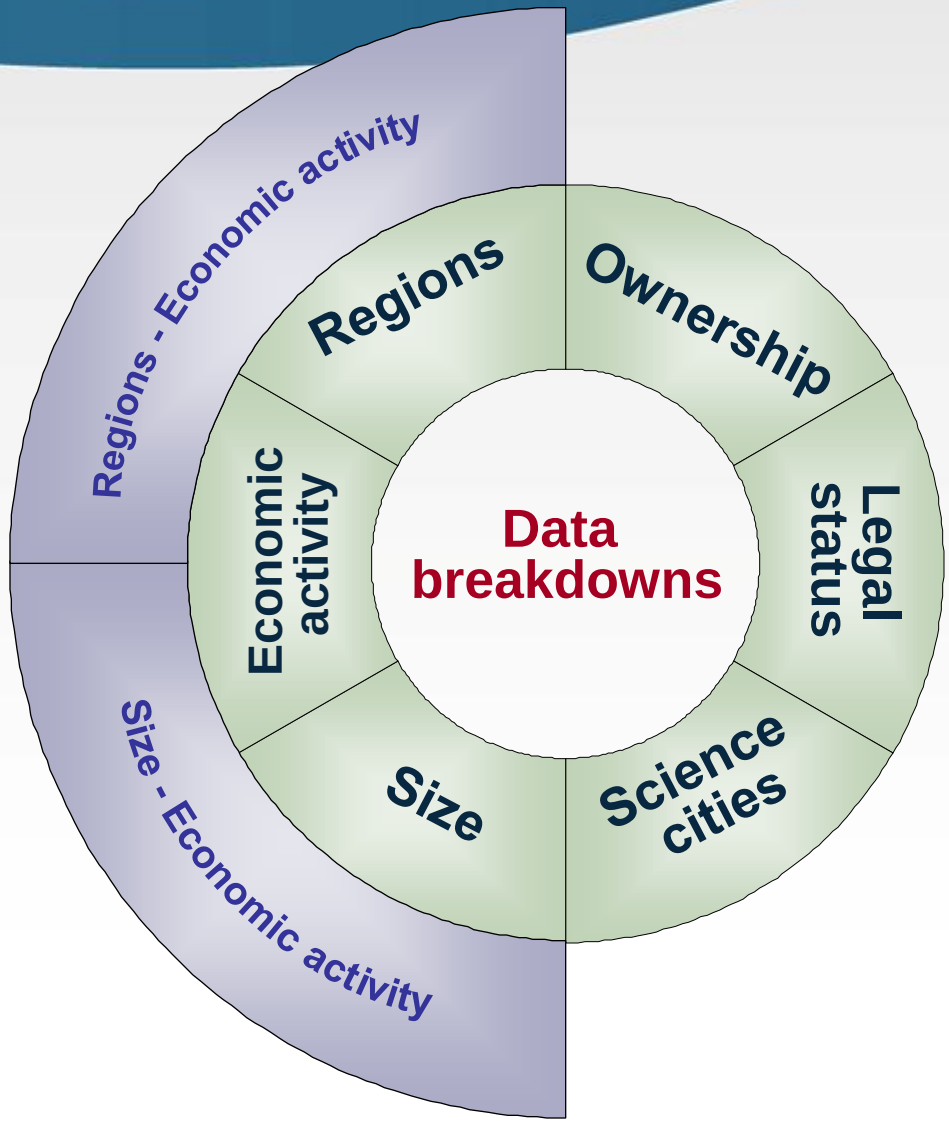
Statistical Surveying of Innovative Activity of Small Companies

- **Coverage – industry**
- **Focus – technological innovation only**
- **Frequency – biennially**
- **Abridged questionnaire**
  - Expenditure on technological innovation (by innovative activity & source of funds)
  - Sales of innovative products
  - R&D expenditure & personnel

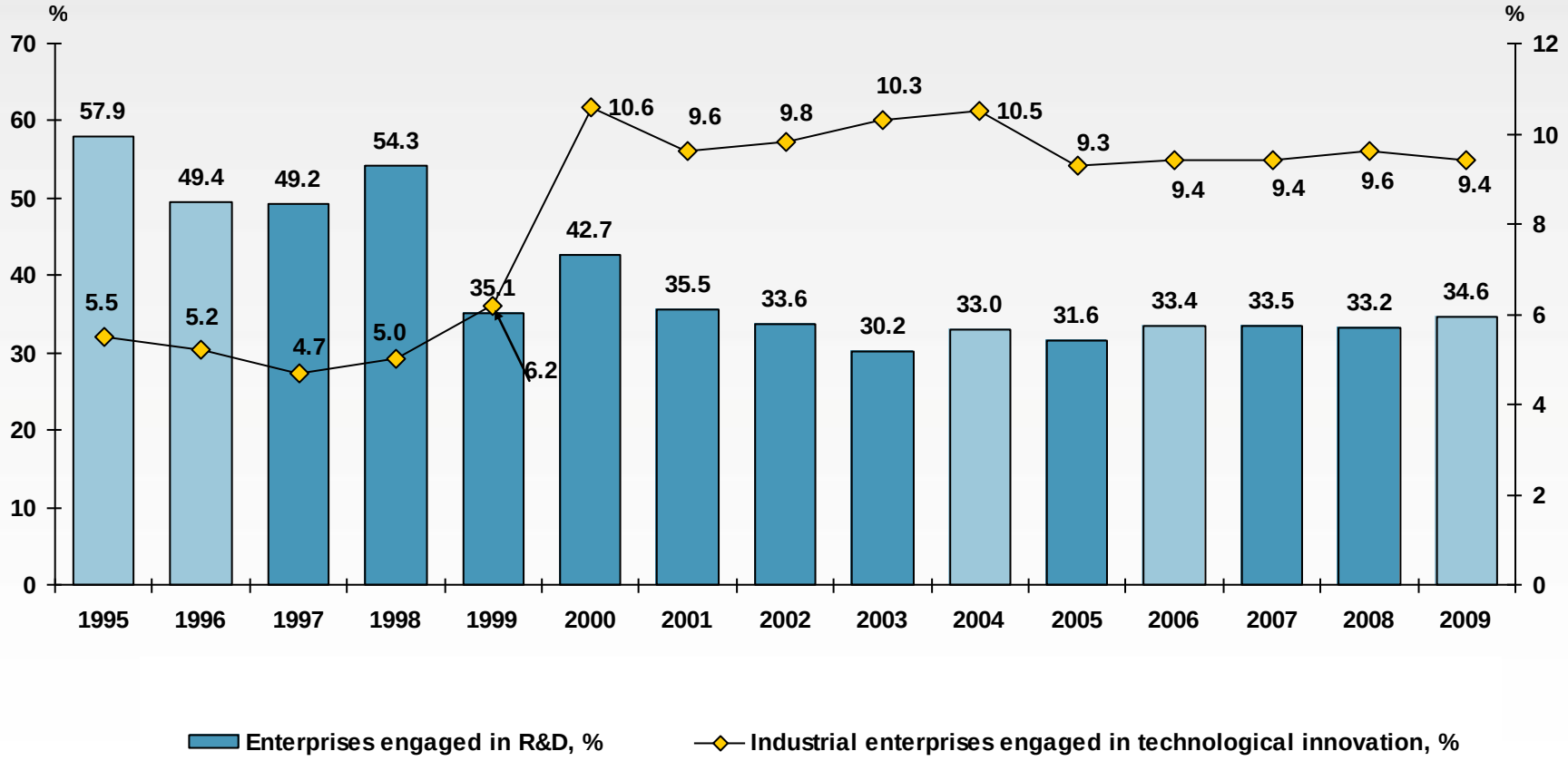
Scope

2009:	large & medium enterprises	–	35.6 thousand
	e.g. industry	–	24.4
	services (telecom, IT, etc.)	–	11.2
2009:	Small enterprises	–	22.6 thousand

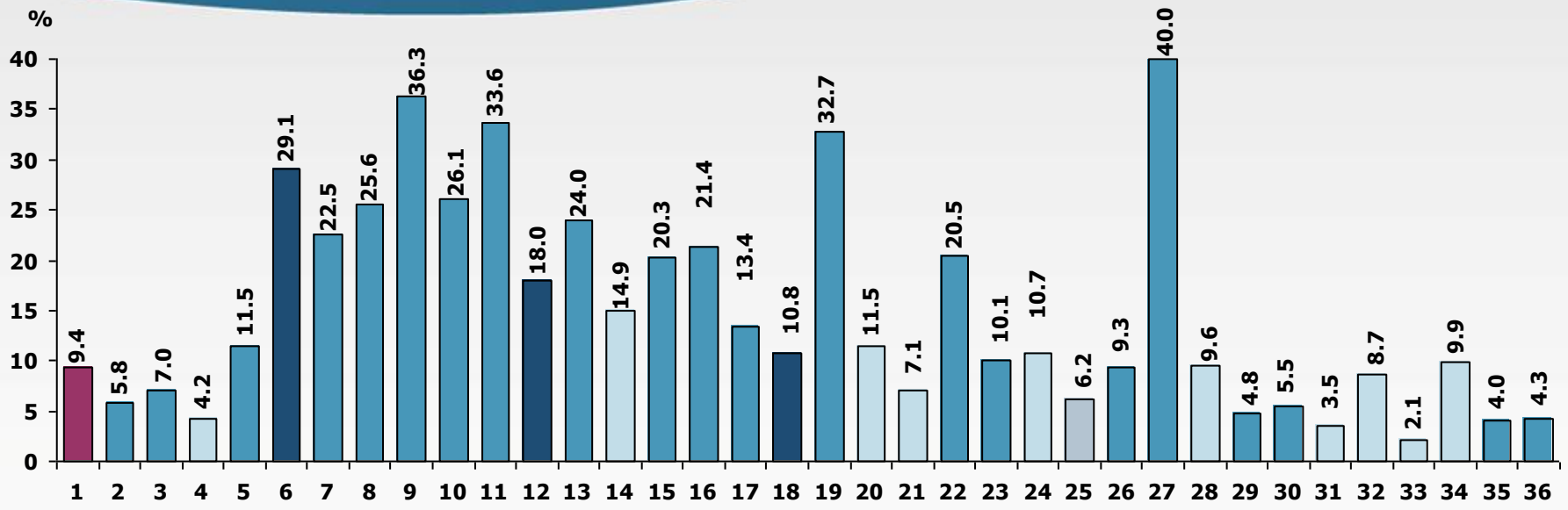
Statistical Information Breakdowns



Innovation Activity in Industry

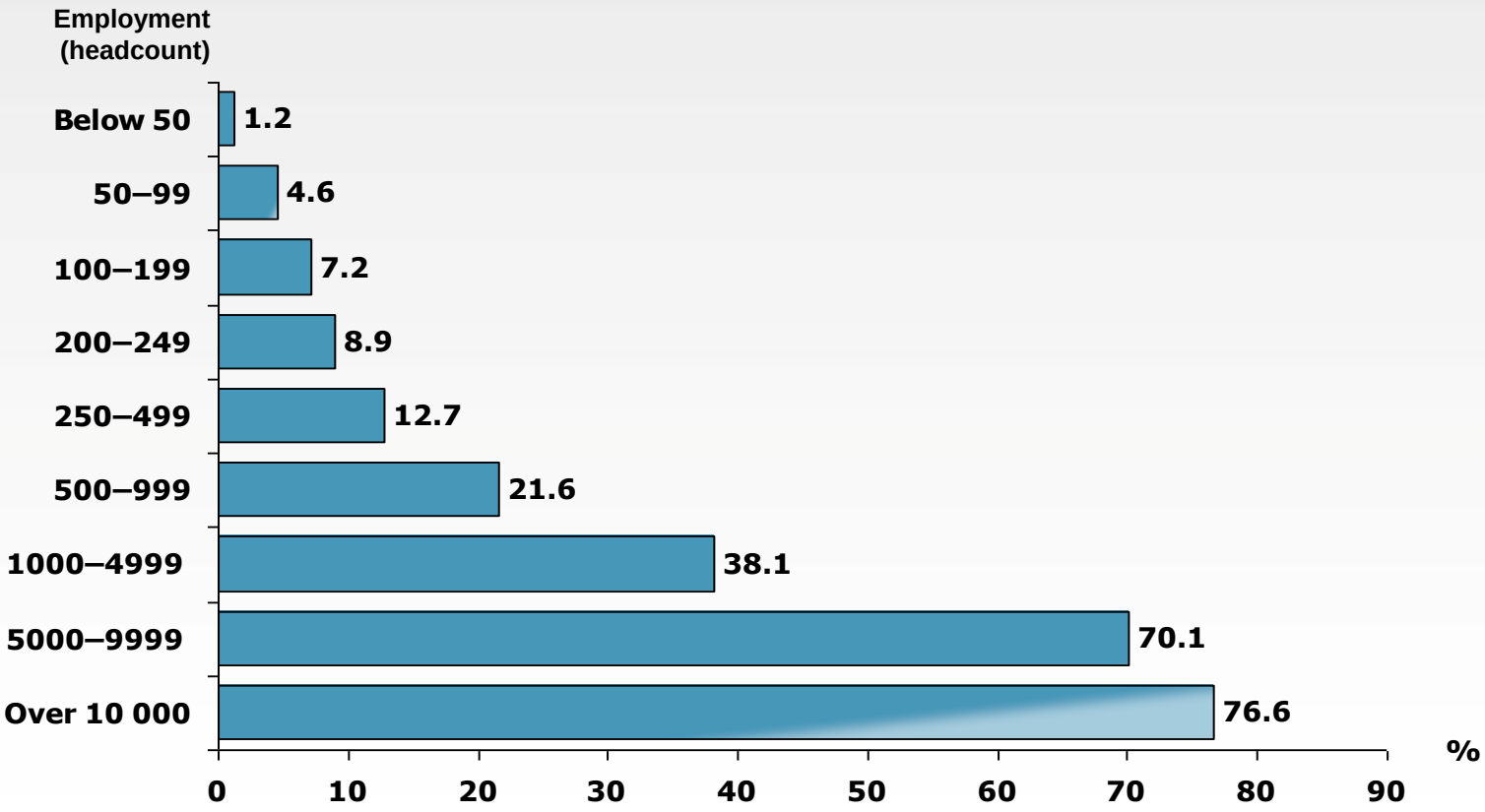


Innovating Enterprises in Industry by Economic Activity: 2009



1 - Total
2 – Mining and quarrying
3 - Mining and quarrying of energy producing materials
4 - Mining and quarrying, except of energy producing materials
5 - Manufacturing
6 - High Technology
7 - Manufacture of pharmaceuticals products
8 - Manufacture of office, accounting and computing machinery
9 – Manufacture of radio, television and communication equipment and apparatus
10 – Manufacture of medical, precision and optical instruments and clocks
11 - Manufacture of aircraft and spacecraft
12 - Medium High Technology
13 - Manufacture of chemicals and chemical products
14 - Manufacture of machinery and equipment n.e.c.
15 - Manufacture of electrical machinery and apparatus n.e.c.
16 - Manufacture of motor vehicles, trailers and semi-trailers
17 - Manufacture of other transport equipment n.e.c.
18 - Medium Low Technology
19 - Manufacture of coke, refined petroleum products and nuclear fuel
20 - Manufacture of rubber and plastic products
21 - Manufacture of other non-metallic mineral products
22 - Manufacture of basic metals
23 - Manufacture of fabricated metal products
24 - Building and repairing of ships and boats
25 - Low Technology
26 - Manufacture of food products and beverages
27 - Manufacture of tobacco products
28 - Manufacture of textiles
29 - Manufacture of wearing apparel; dressing and dyeing of fur
30 - Manufacture of leather and leather products
31 - Manufacture of wood and of products of wood and cork, except furniture
32 - Manufacture of pulp, paper and paper products
33 - Publishing, printing and reproduction of recorded media
34 - Manufacture of furniture; manufacturing n.e.c.
35 - Recycling
36 - Electricity, gas and water supply

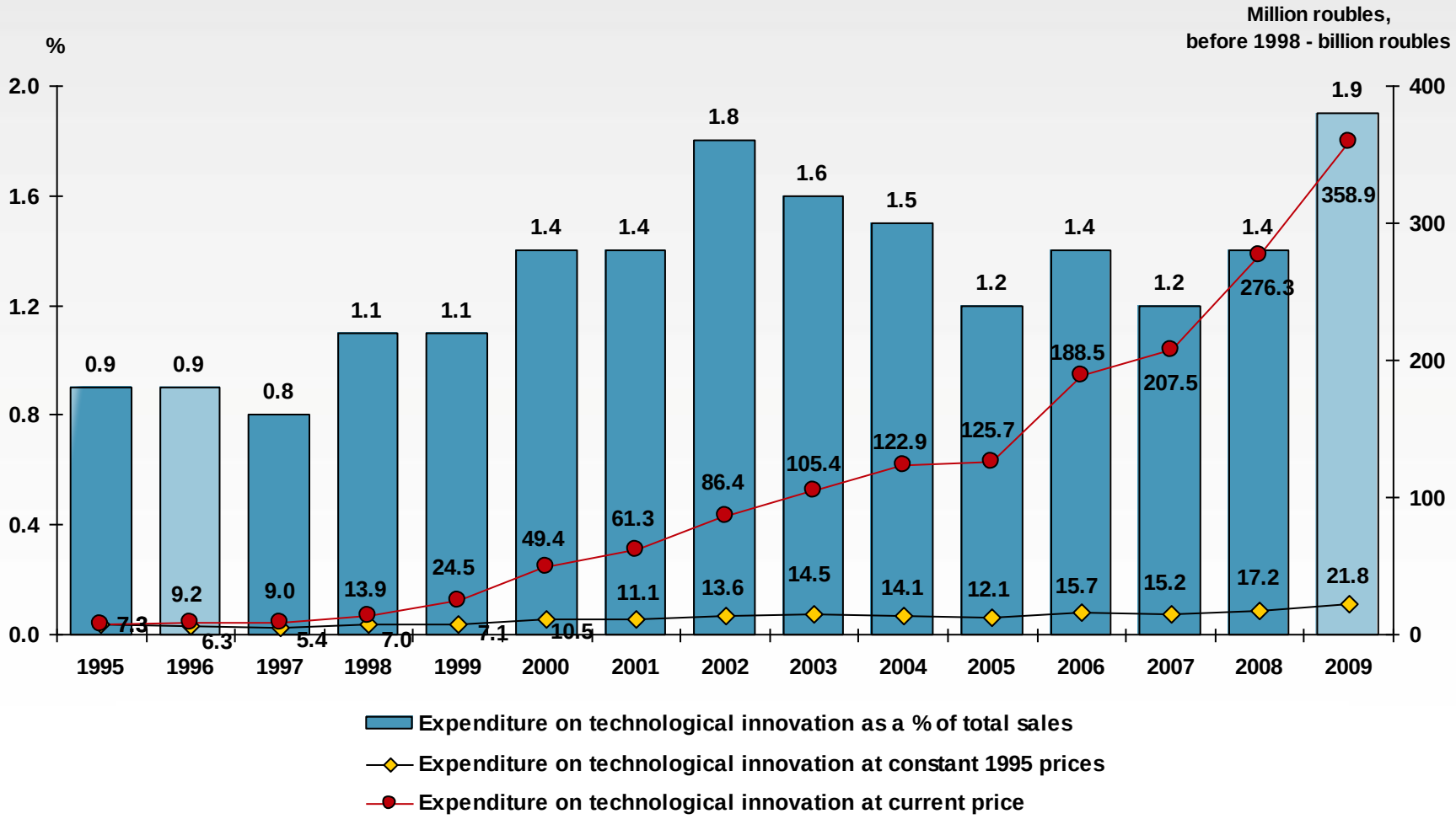
Distribution of Industrial Enterprises Engaged in Technological Innovation, by Size (2009)



Innovation in Small Industrial Enterprises

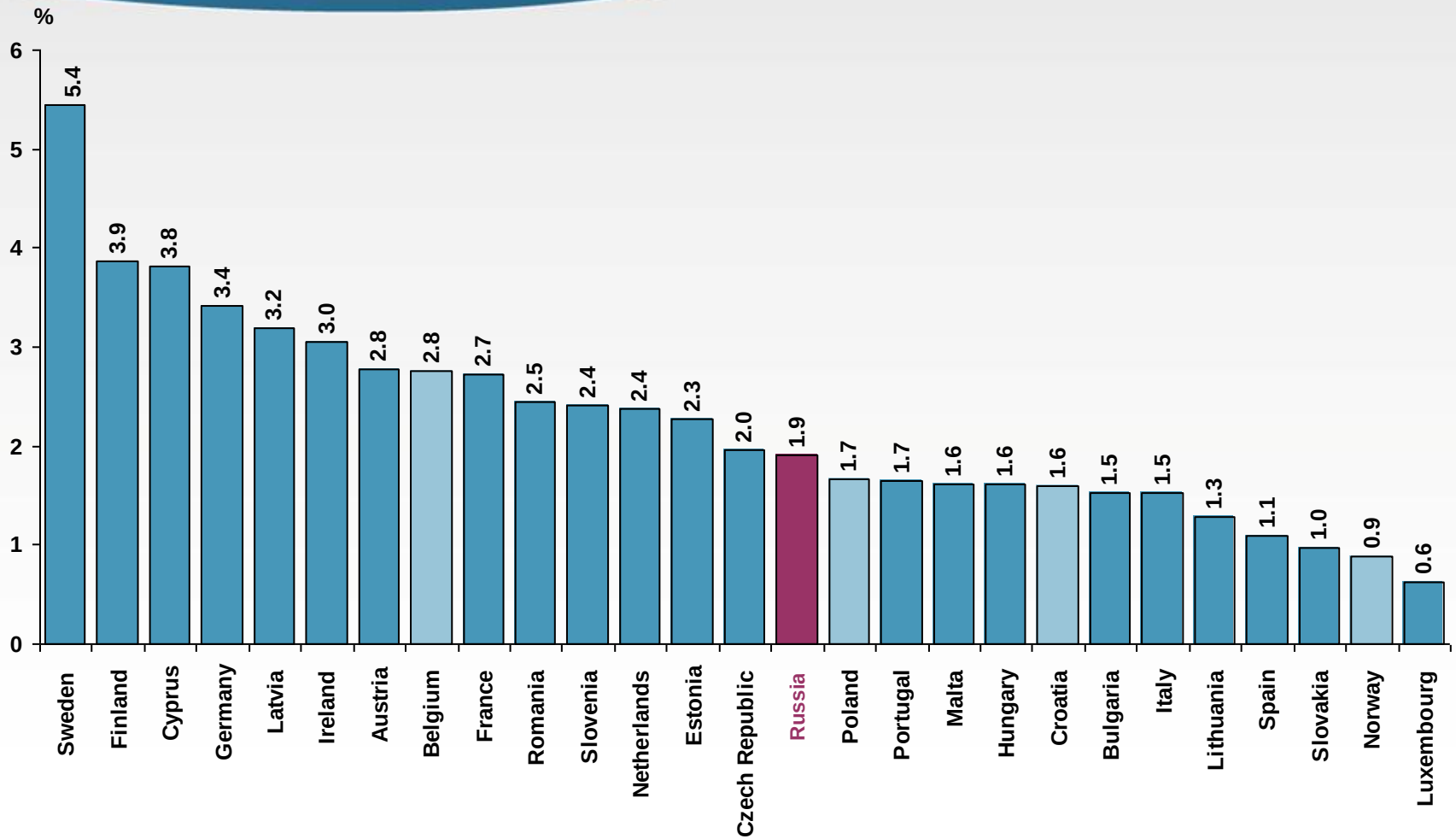
	1999	2000	2001	2003	2005	2007	2009
Number of small enterprises implementing technological innovations	722	673	729	779	919	996	923
Proportion of innovative small enterprises (%)	1.6	1.3	1.5	1.6	1.6	4.3	4.1
Innovative products and services at small enterprises, *million roubles*	766.8	927.6	1087.1	1119.7	3103.2	12644.3	10215.7
Share of innovative products and services in total sales at small enterprises (%)	0.7	0.6	0.6	0.3	0.3	2.0	1.4

Expenditure on Technological Innovation

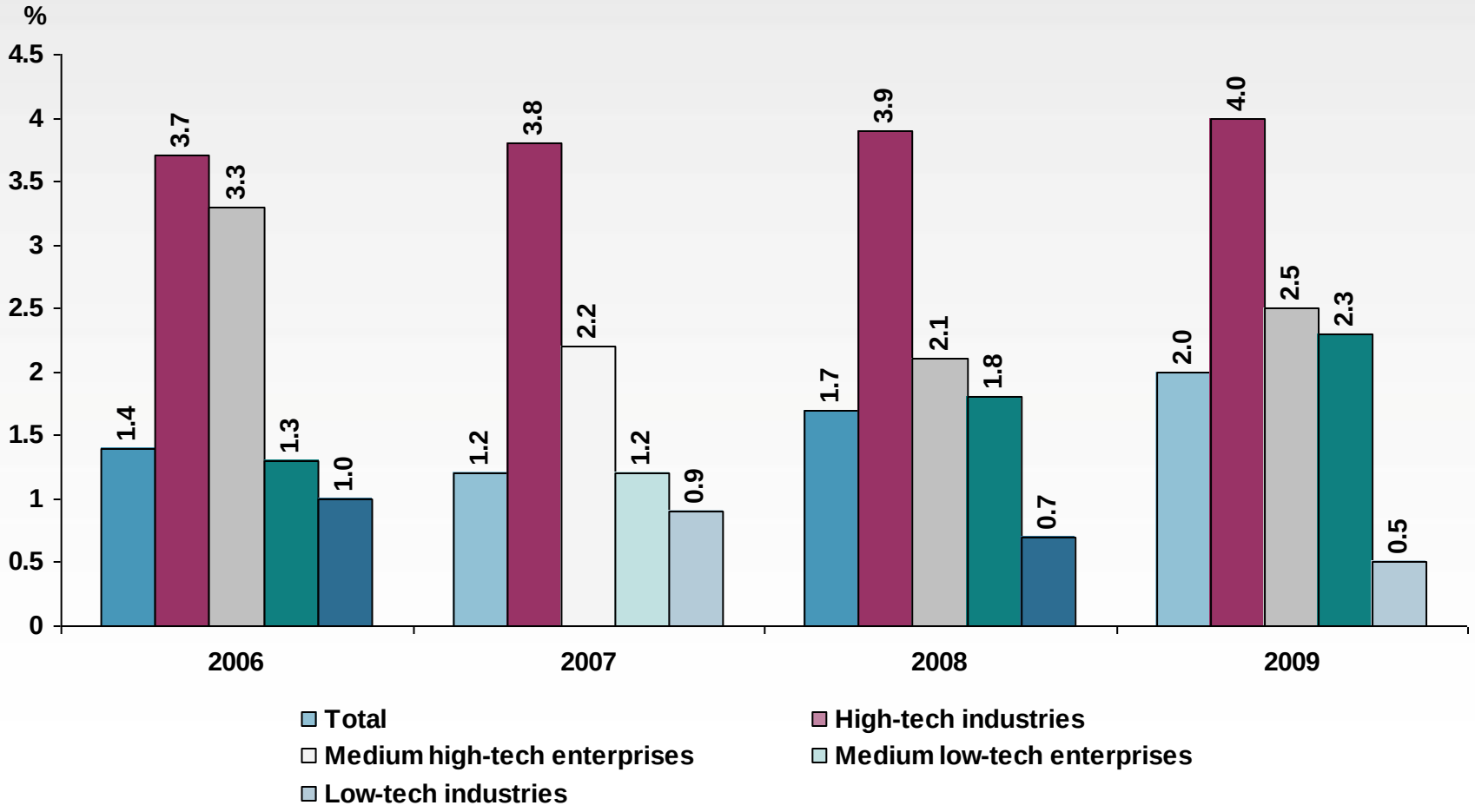


Intensity of Technological Innovation Expenditure in Industry, by Country (2009)

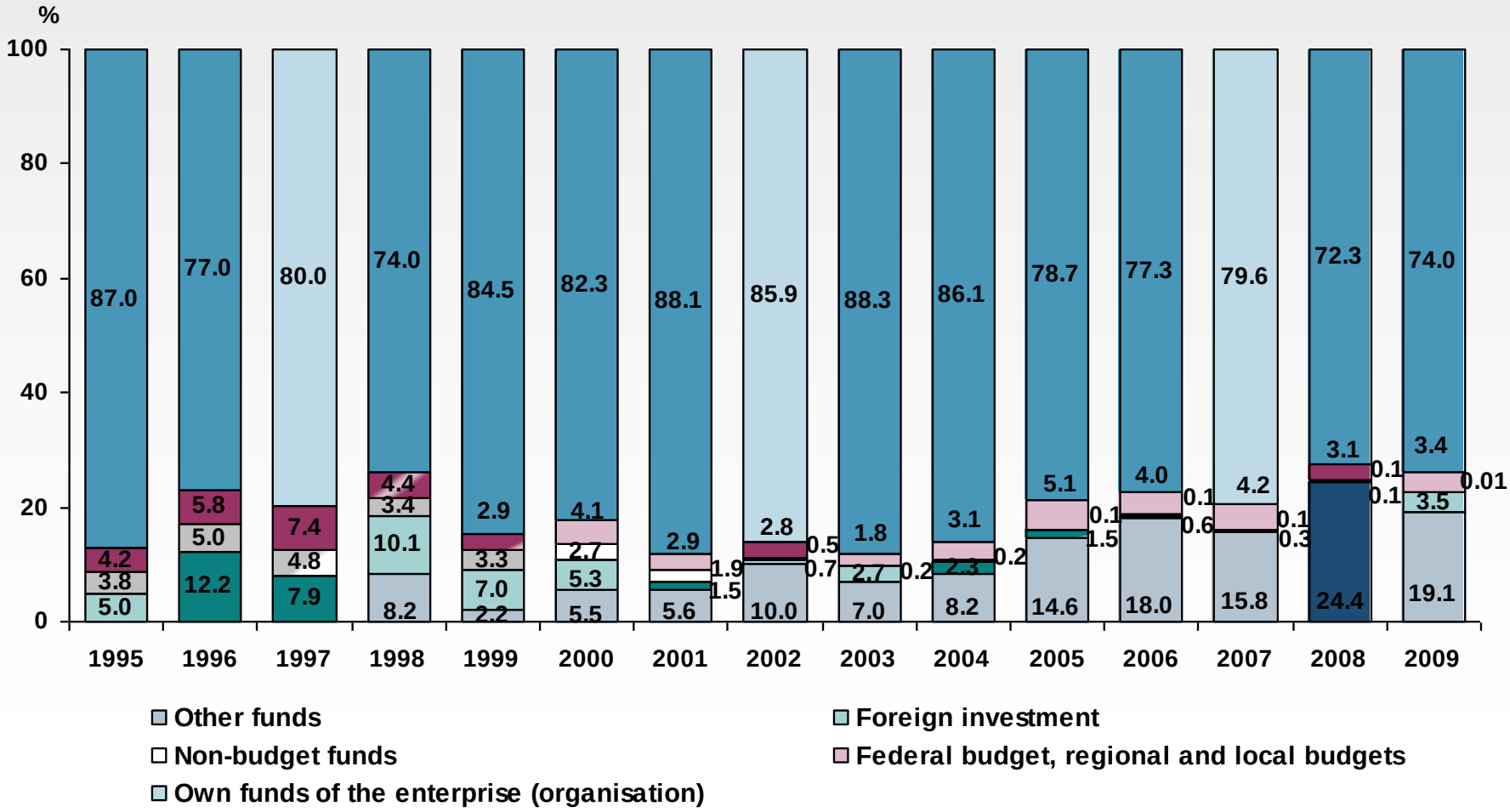
(technological innovation expenditure- to- sales ratio)



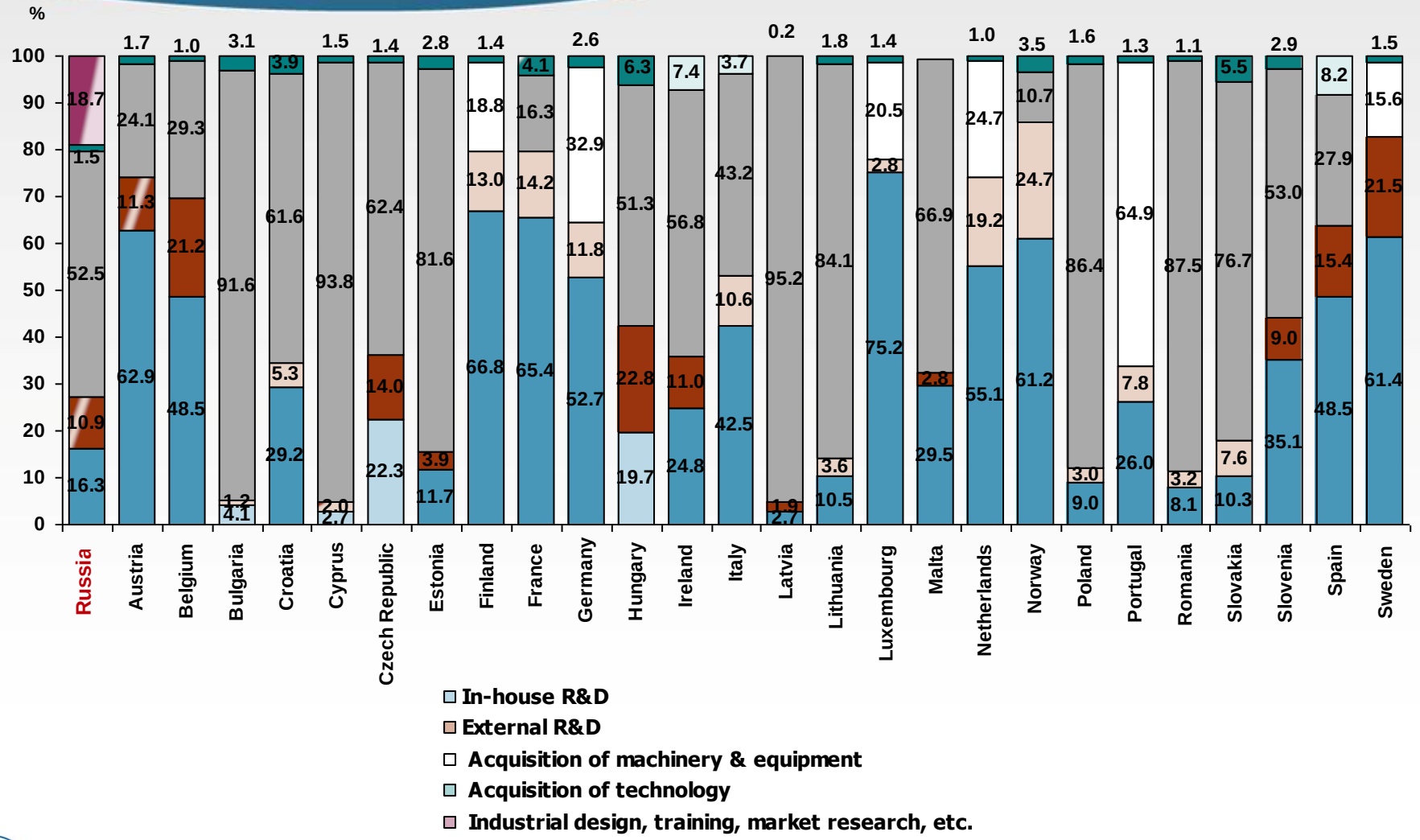
Intensity of Technological Innovation Expenditure in Industry by Economic Activity



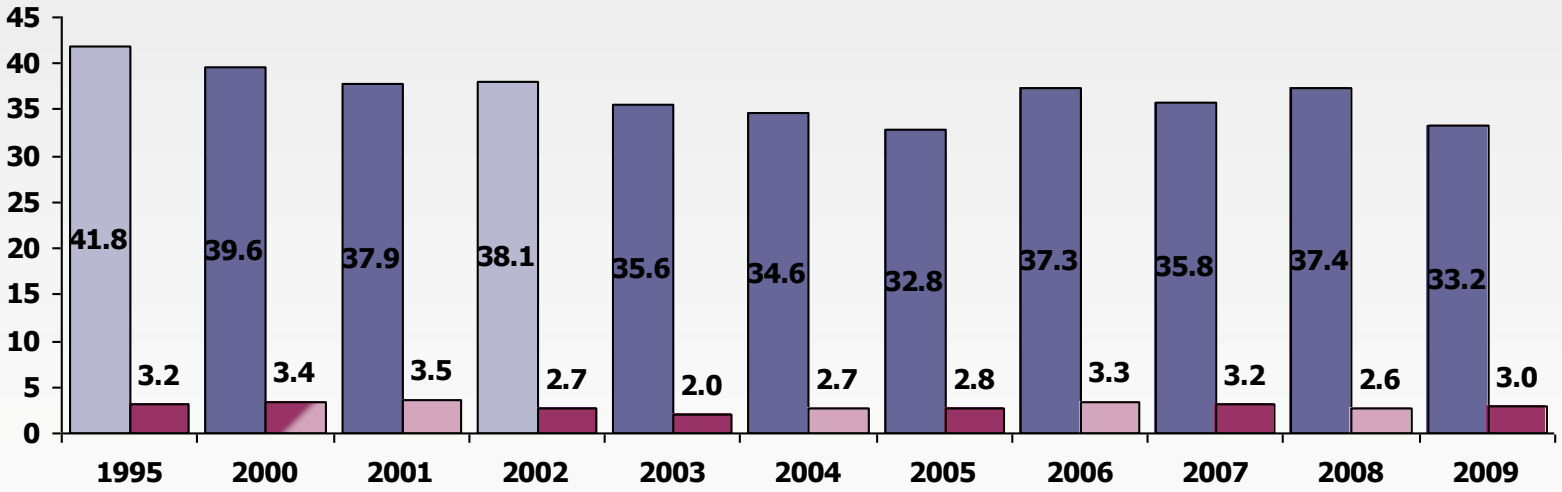
Percentage Distribution of Expenditure on Technological Innovation in Industry by Source of Funds



Distribution of Expenditure on Technological Innovation by Type of Innovation Activity (2009)



Technology Transfer *(%)*



Cooperation in Innovation

Joint R&D projects

Type of co-operation partner

- other enterprises within your enterprise group (association, company)
- clients or customers
- suppliers of equipment, materials, components or software
- competitors in the same sector
- consulting and information firms
- R&D institutions
- universities or other higher education institutions

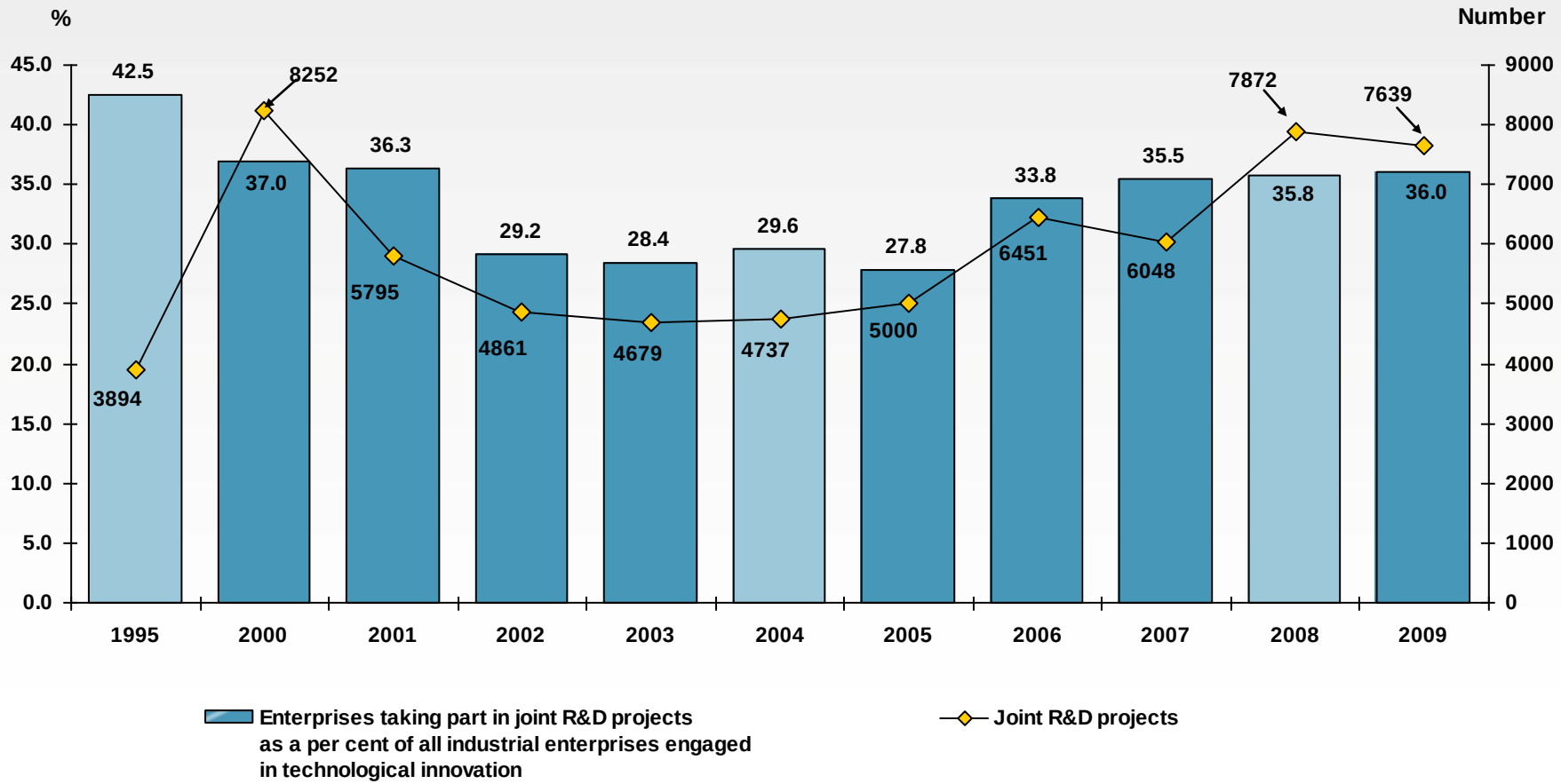
Country and region

- Russia
- CIS countries
- EU Member States, Norway, Switzerland, Iceland, and Liechtenstein
- United States and Canada
- China and India
- other countries

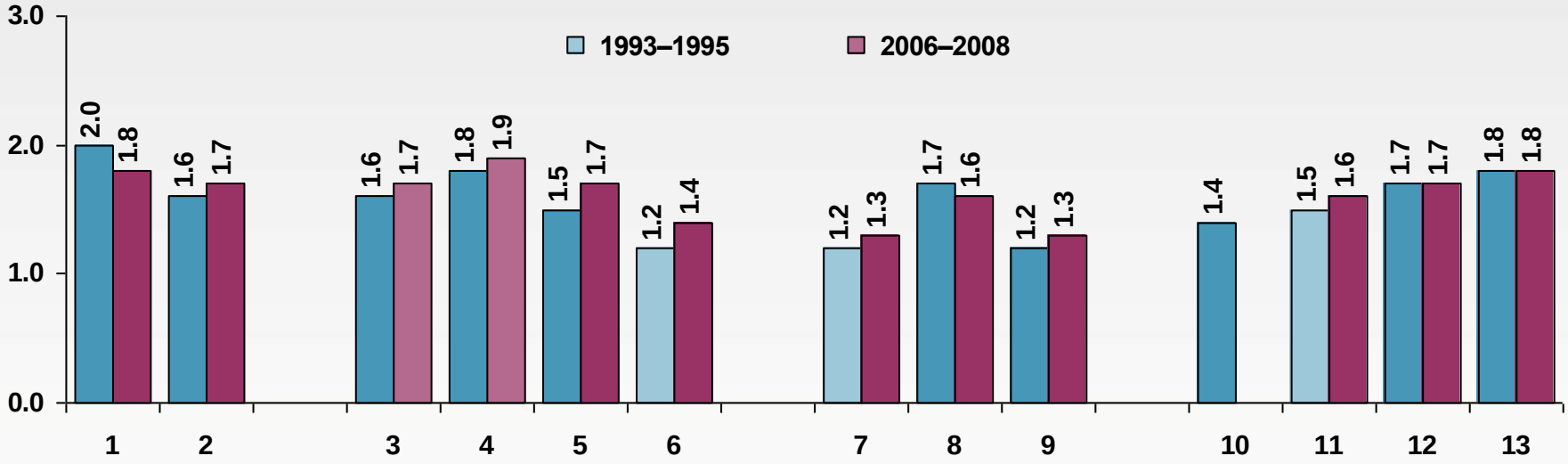
Types of cooperation

- permanent cooperation
- cooperation in the framework of a particular project
- ad hoc, informal cooperation

Joint R&D Project at Industrial Enterprises



Sources of Information for Innovation by Rate of Importance



Internal sources:

1 – within an enterprise

2 – within a group of enterprises

External commercial sources:

3 – suppliers of materials, equipment, and components

4 – consumers of products

5 – competitors in the same sector

6 – consulting and information firms

R&D institutions:

7 – academy

8 – industry

9 – higher education

Generally accessible information:

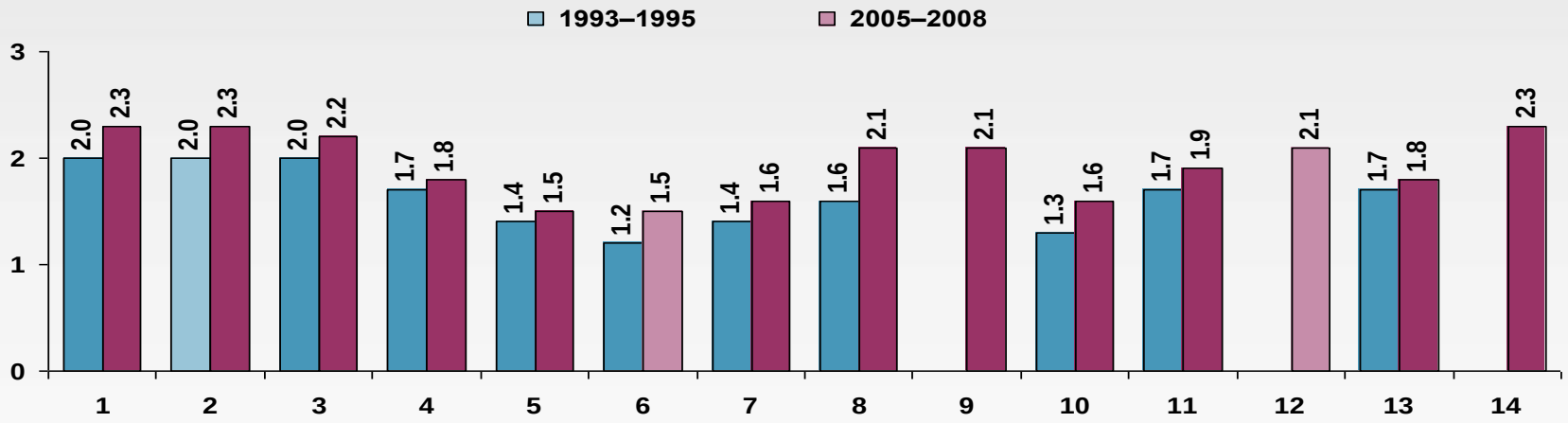
10 – invention descriptions, official publications by Rospatent, etc.

11 – conferences, workshops, symposia

12 – S&T literature

13 – exhibitions, fairs, and other advertising events

Effects of Technological Innovation of Industrial Enterprises by Rate of Importance



Product innovation

1 – Increase range of goods or services

2 – Quality improvement

Creation of new markets :

3 – Russia

4 – CIS countries

5 – EU, Iceland, Iceland, Liechtenstein, Norway, Sweden

6 – US and Canada

7 – elsewhere

Process innovation

8 – Increasing flexibility of production

9 – Increasing industrial capacities

10 – Reducing labour costs

11 – Reducing material and energy costs

Marketing innovation

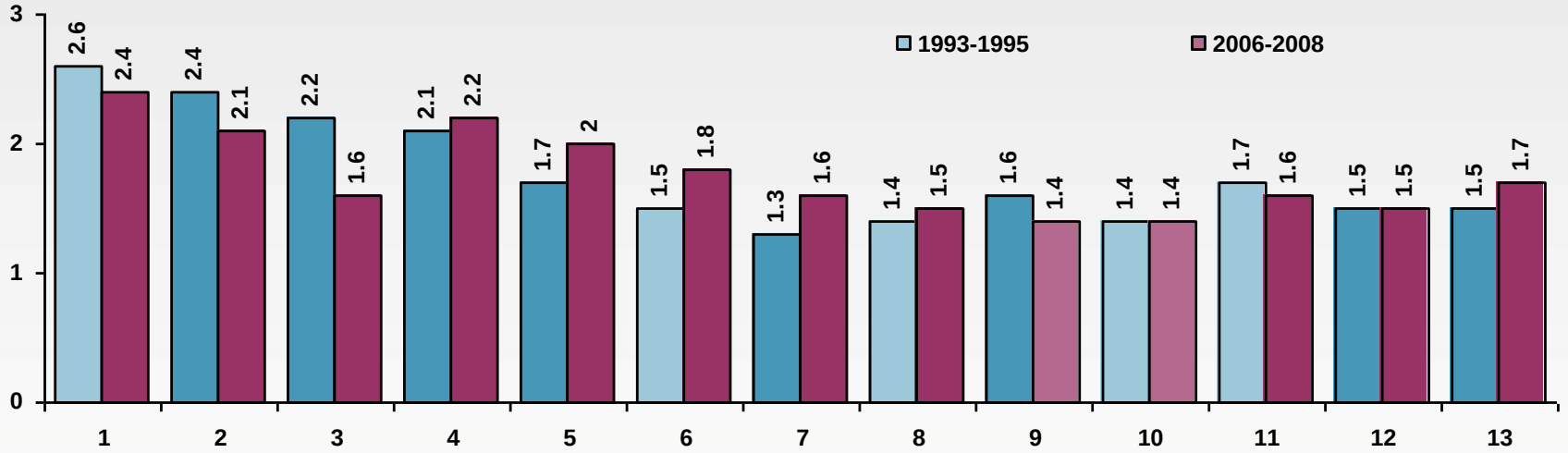
12 – Increased market or market share

All innovations

13 – Reduction environment damage

14 – Ensuring compliance with modern standards

Factors Hampering Technological Innovation at Industrial Enterprises by Rate of Importance



Economic factors

1 – Lack of own sources of finance

2 – Lack of financial support from the government

3 – Low solvent demand for new products

4 – Innovation costs too high

5 – Excessive perceived economic risks

Internal factors

6 – Insufficient innovation potential of the enterprise

7 – Lack of qualified personnel

8 – Lack of information on new technology

9 – Lack of information on sale markets

10 – Difficulty in finding cooperation partners for innovation

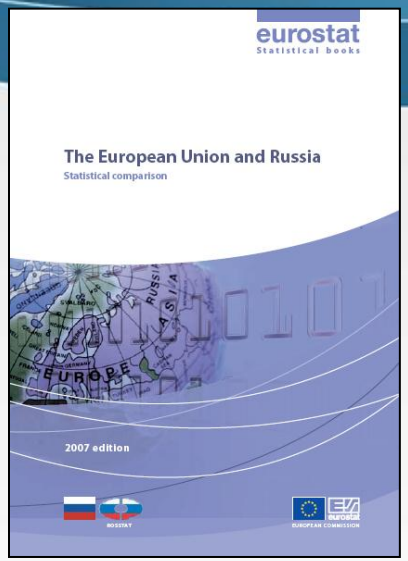
Other factors

11 – Lack of legislation and norms to regulate and stimulate innovative activities

12 – Underdeveloped innovation infrastructure (intermediary, information, legal, banking, and other business services)

13 – uncertain economic profit from intellectual property

Publications



- **The Federal State Statistics Service**
  - Russia in Figures
  - Statistical Yearbook of Russia
  - Industry of Russia
  - Small Business in Russia
  - Regions of Russia (Social and Economic Indicators)
  - The European Union and Russia
  - Russia and Countries of the World
  - G8 in figures
- **Specialized databooks (HRE- Rosstat)**
  - Indicators of Innovation
  - Science and Technology Indicators in the Russian Federation
  - Science and Technology. Innovation. Information Society
  - Information and Society Indicators
  - Education in the Russian Federation
- **Science, Technology and Innovation in the Russia and OECD countries**

Russian Innovation Index

1. Innovation activity in the Russian economy
2. Knowledge generation: factors and results
3. Human resources for S&T and innovation
4. Transition towards Information society
5. Global positioning and competitiveness

Thank you!

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