Research and Innovation Policy in Russia: Dynamic Process, Invariable Results?

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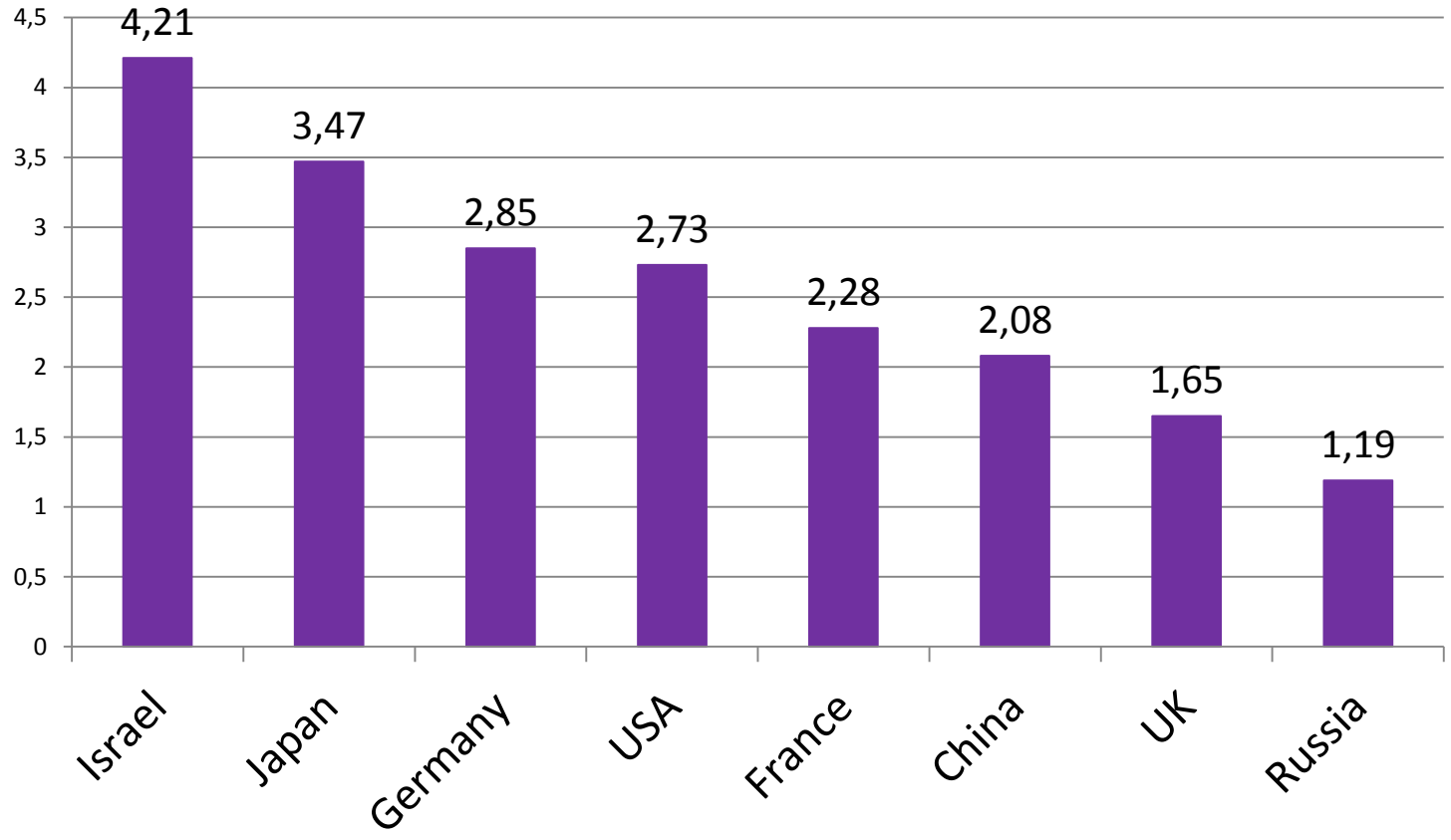
Expenditures on R&D, and innovative activity

Expenditures on R&D (% of GDP)

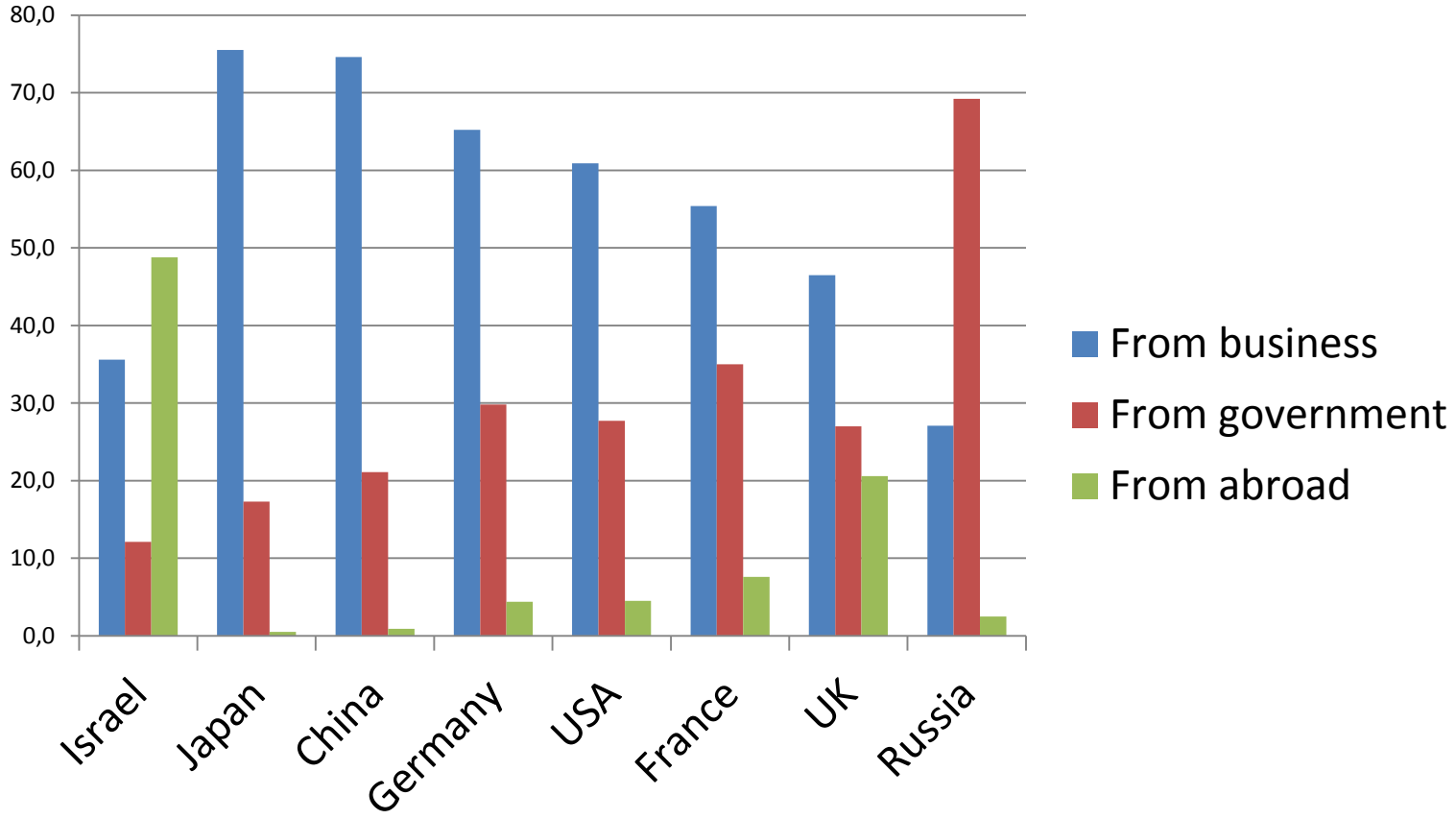
2014 or latest year available



Source: Science Indicators: 2016. Statistical Yearbook. M.: 2016, p. 253.

Sources of R&D Funding (% of total)

(2014 or latest year available)

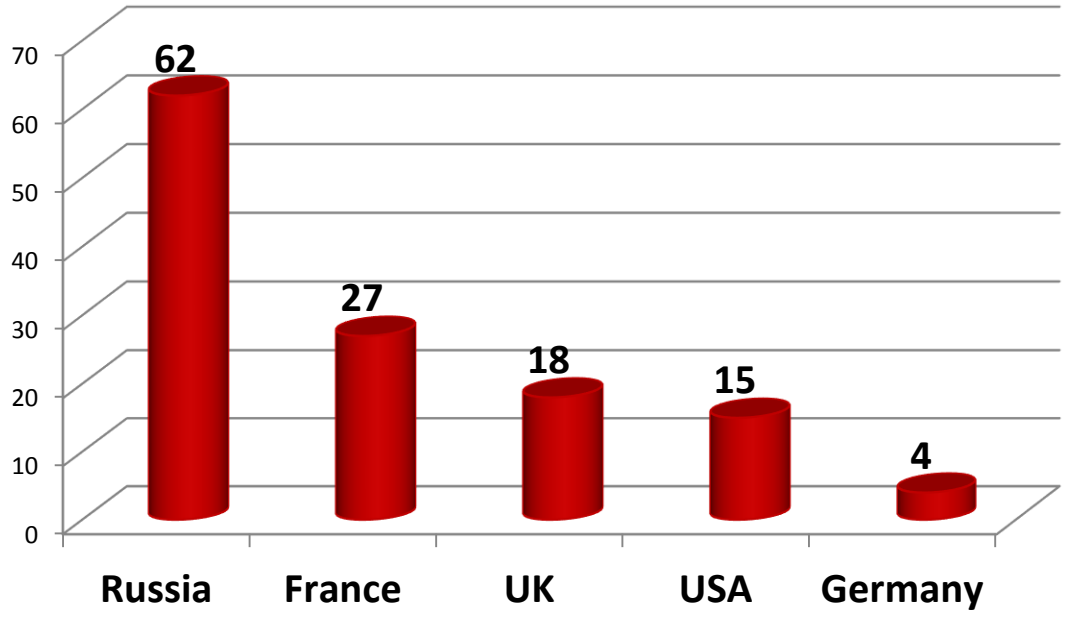


Source: Science Indicators: 2016. Statistical Yearbook. M.: 2016, pp. 257-259.

Government Support for R&D in Business Sector

Growing share of public spending is allocated to the business sector (through competitive grants and tax incentives) at OECD countries – with the objective to increase business capacity to innovate

Combined direct and indirect public support to business R&D, % to BERD (2014)



Source: OECD (2016) Science, Technology, and Industry Outlook. P.162-163; 175

Technological Dependence

- Overall, Russia is mostly dependent on high tech import, exporting only some “niche” products.
- Least dependent: import of nuclear technologies (export is higher than import)
- Most dependent on import of medical equipment (import from countries that introduced sanctions, is 92%), pharmaceuticals (over 90%), machinery and equipment (60%)

Source: Gnidchenko A., Mogilat A., Mikheeva O., Salnikov V. (2016) Foreign Technology Transfer: An Evaluation of the Russian Economy Dependence on High Tech Imports // Foresight and STI Governance, vol 10, no.1, pp.62-66.

Patent Applications (2013)

Indicator	China	USA	Japan	Germany	Russia	France
Total number of patent applications	825136	571612	328438	63167	40308	16886
Share of foreign applicants, %	13.7	50.7	18.4	27.0	**40.3**	12.3
Applications from national applicants per 1 million economically active population	916	3136	7217	4395	443	2370

Source: Science Indicators: 2016. Statistical Yearbook. M.: 2016, pp.288-294.

Russia in Global Innovation Index 2016: Top 5 Strengths and Weaknesses

Strengths	Weaknesses
Employment of women with higher education	GDP per unit of energy consumed
Volume of domestic markets	Innovation linkages
Applications of domestic applicants to the Russian patent agency	Investments
University graduates in engineering	Rule of law
Export of cultural and creative services	Political stability and absence of terrorism

Source: The Global Innovation Index 2016. https://www.globalinnovationindex.org/gii-2016-report

Government Policy

Changing Focus (Historical Perspective)

- Technological infrastructure (technology parks, innovation-technology centers, technological villages, special economic zones)

- Funding at different stages (“innovations lift”) – institutes for development

- Linkages (technology platforms, innovative clusters)

- Picking winners – big state companies (Programs for Innovative Development) and medium-size fast growing companies (“National Champions”)

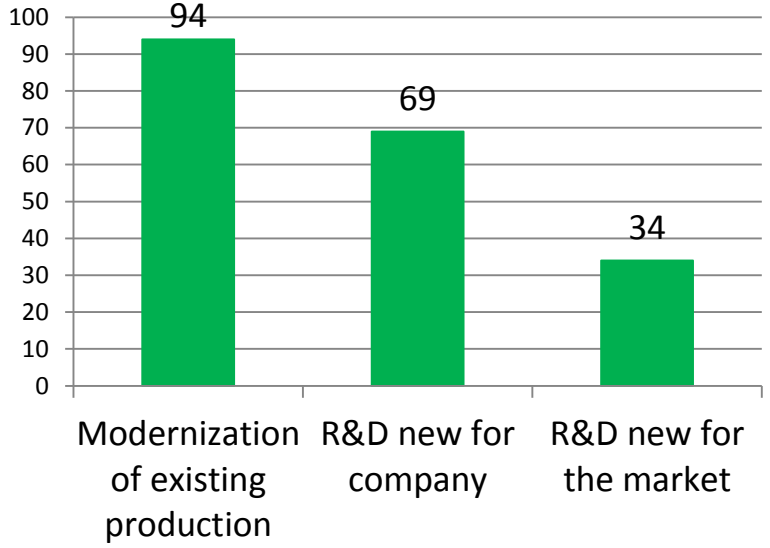
Programs for Innovative Development of Large State Companies

Problems:

- Absence of long-term priority setting , weak orientation towards new technologies (incremental innovations)
- Short-term technological planning depends upon state budget cycles
- Oriented toward the state procurement

State companies still prefer to invest in development of traditional technologies

Share of state companies investing in various types of innovations, 2014, %



Source: Gokhberg et al. (2015) Programs of Innovative Development of State Companies: Intermediate Results and Priorities (in Russian)

Medium-Size “National Champions”

- “Support of private high-tech companies-leaders till 2020” (“National Champions”) modeled according to foreign experience
- Goal: to make them TNC located in Russia (export oriented)
- Approach: individual support to companies (mostly non-monetary – assistance with linking to existing policy instruments; informational support and consulting; simplifying export procedures).
- KPIs – growth of high-tech export and volumes of sales
- Winners: 30 companies in 2016

Venture Business and Small Innovative Companies

- Venture capital investments slow down: 2016 – 71% of 2015 (Data from RAVI)
- Venture businesses oriented toward foreign markets
- Start-ups rarely grow into actual companies mainly because of the lack of managerial skills, ignorance of marketing
- Number of spin-off companies from universities and Research institutes is decreasing

National Technology Initiative

- Orientation towards Net-markets envisioned by 2035
- Expectation: in 10-20 years these markets will be over 100 billion USD, and Russia may occupy its “niche” there
- Approach: from market demand to technology development
- Complex government instruments: support of R&D, education (starting from secondary schools), establishment of new institutes, new mechanisms (consortia)
- Modest planned budget allocations for 2017-2019 (130-200 million USD per year)

Source: https://asi.ru/nti/

National Technology Initiative: State of the Art

- 10 +1 promising markets are identified - AutoNet, AeroNet, MariNet, FoodNet, HealthNet, NeuroNet, EnergyNet, FinnNet, SafeNet; MediaNet; later – TechNet (+ plan – AR&VR - augmented reality & virtual reality)
- 6 Roadmaps were approved by the government – 4 in 2015 (AutoNet, AeroNet, MariNet, NeuroNet) and 2 in 2016 (HealthNet, EnergyNet)
- New Strategy for S&T Development (*signed by the President on Dec.1, 2016*): NTI – major policy instrument

Conclusions

- Russian innovation system is mostly government-supported and regulated. Federal funding has grown, while BERD are in stagnation
- Various government instruments exist for supporting all types of companies but the level of innovative activity remains the same
- The innovation environment is not very competitive and stimulus to invest in technological innovations is low
- National Technology Initiative may give a new impulse but much depends on human capital