

IGNITING INNOVATION:

The Role of Government in Innovation in Emerging Europe and Central Asia

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Role of Government – the Why?

Market failures may justify government intervention to stimulate absorptive capacity in private sector

BUT

Policy design needs to account for *government failures*: e.g.

- Bad design, targeting support >>> misaligned incentives;
- Capture by sectoral interests;
- Corruption
- R&D institutes (RDIs) – the unfinished restructuring agenda

What can governments do?

You won't know unless you read the book!

- Boosting private incentives through public instruments: matching grants, VC, parks and incubators
- Leveraging foreign investors and inventors via openness to international R&D collaboration
- The unfinished restructuring agenda – create dynamic R&D institutes

ROLE OF GOVERNMENT AND PRIVATE INCENTIVES

ROLE OF GOVERNMENT – THE HOW?

- *Matching grants*: Preserve private risk; additionality
- *Soft loans*: only low-risk apply
- *Tax credits*: Start-ups have no profits to use credit
- How to subsidize *Venture Capital while preserving private risk?*

Government Support Instruments - Design

1. Protect programs from capture and corruption
2. Ensure risk sharing  additionality.
3. Consider “neutrality” of project selection respect to sectors; vs. targeting.
 - Controversy: highly qualified civil servants and sound institutions allow exceptions to neutrality
 - but in ECA many countries lack capacity  targeting subject to pressures from industrial interests

ROLE OF GOVERNMENT— SECTOR NEUTRALITY VS. TARGETING

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- EU is specialized in low or medium R&D intensity sectors →→?? →sector targeting.
- Does Aghion (2011) imply that sectoral targeting is needed to compensate for low levels of asset tangibility?
- Sector targeting is NOT logical conclusion of credit market failure. It can be addressed by **horizontal or neutral** matching grants to qualified applications in all sectors.

Sequencing of Support Instruments

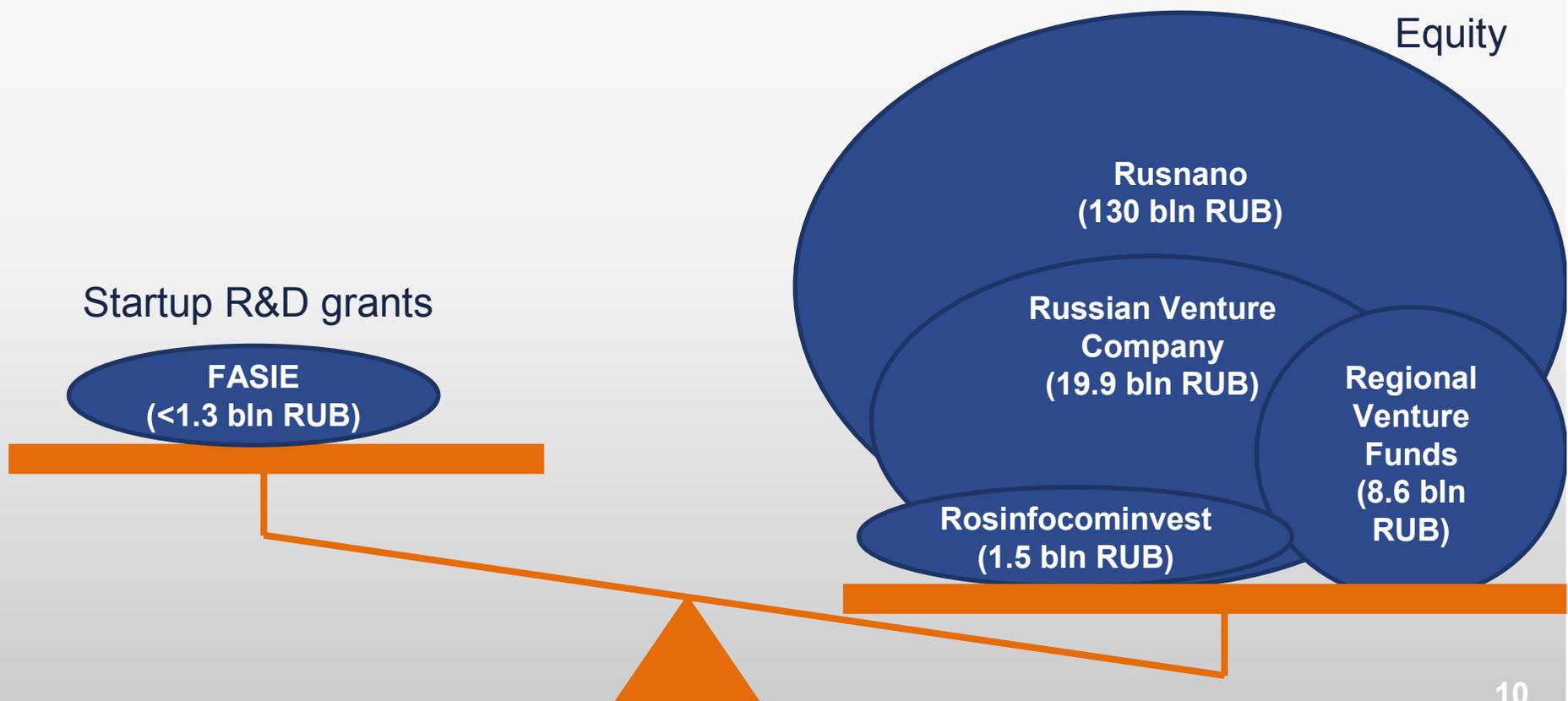
- In countries which have had early stage grants for long time, venture capital seem to flourish : e.g. USA, Israel (but no causality implied)
- **Sequencing:** early stage grants for long time build deal flow) for venture capital.
- Yet, in Russia:
 - Plenty of support for VC while
 - FASIE is not growing much

FASIE is small compared to other countries

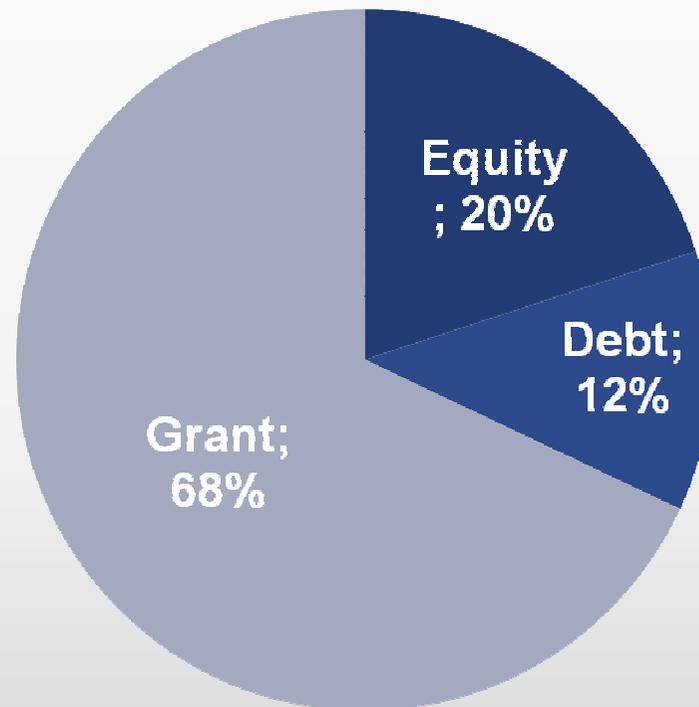
MATCHING GRANT SUPPORT FOR SME INNOVATION	Russia 2011 (FASIE)	United States 2009 (SBIR)	Finland 2010 (Tekes)
Total (million USD)	123	1,937	151
Per capita (USD)	0.9	6.3	28

In Russia, the state has invested relatively heavily in VC

- But equity is only relevant to a very specific type of firm at a very specific stage of development



US government funding of startups focuses on grants



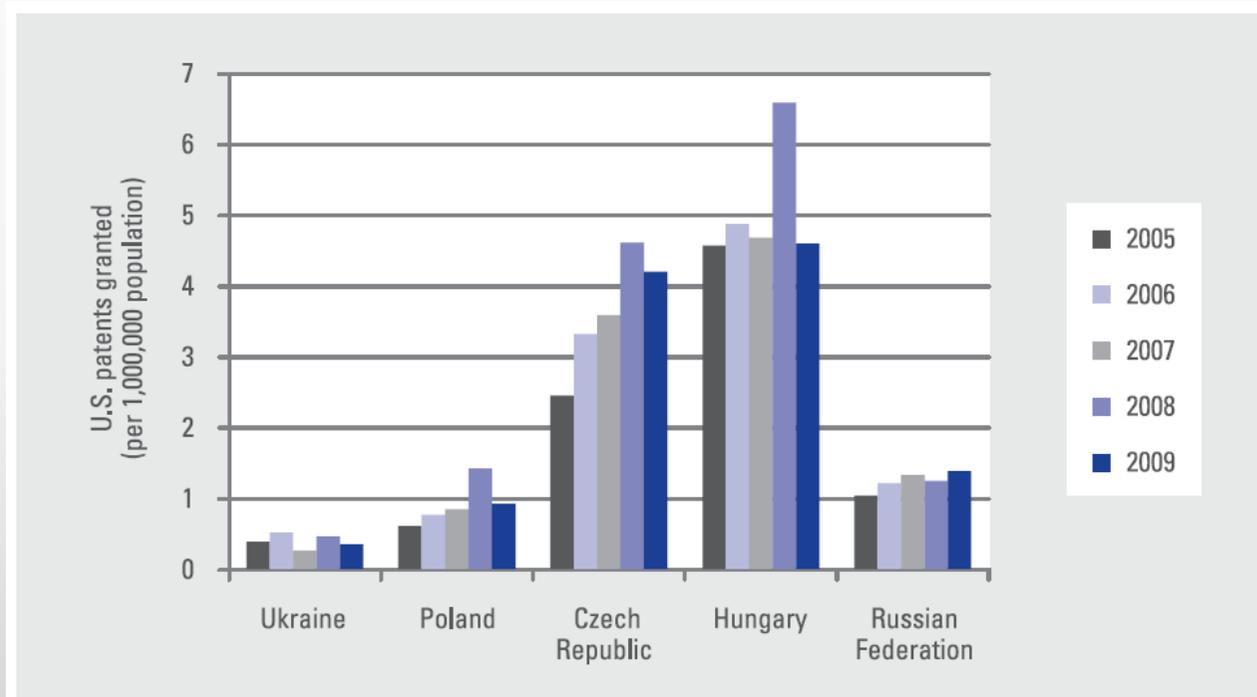
Lessons from Israel's Innovation

- Since 1976, subsidized commercial R&D projects in private firms. (Before only academic, RDIs)
- Venture capital is supported 20 years later.
- High-tech exports: from of \$810 million in 1969 to \$11.7 billion in 2010.* Resilient during global downturn
- Replicable? defense, universities, skills, business climate, policies (compare to Russia).

FOREIGN INVESTORS AND INVENTORS

INVENTIVE ACTIVITY HAS BEEN ON THE RISE

- o Concentrated in a few of the more advanced economies

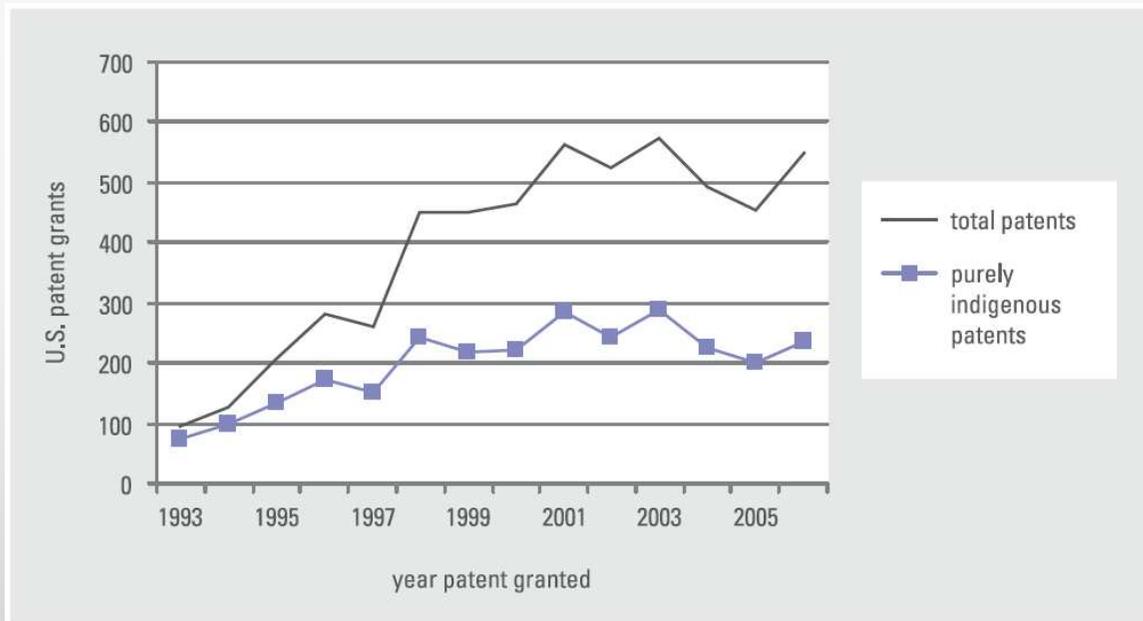


Note: The graph shows data for the five countries that have been granted the most patents from 2005–2009, with the Russian Federation as the leader in number of patents granted.

Sources: USPTO statistics and World Development Indicators, World Bank.

INVENTION DRIVEN BY INTERNATIONAL LINKAGES

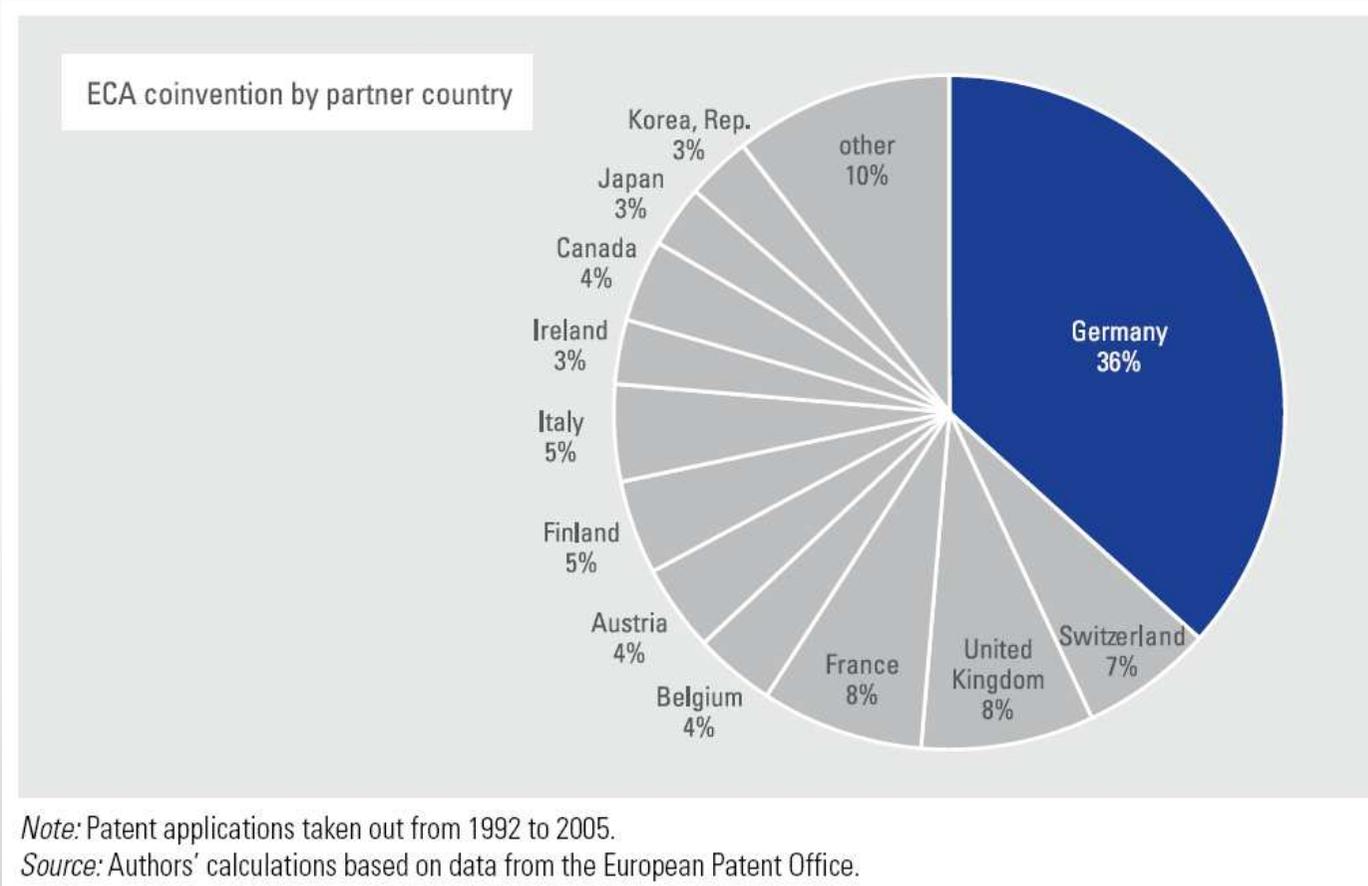
- International co-invention contributes to the quality of patents and raises the quality of inventive efforts in post-transition countries



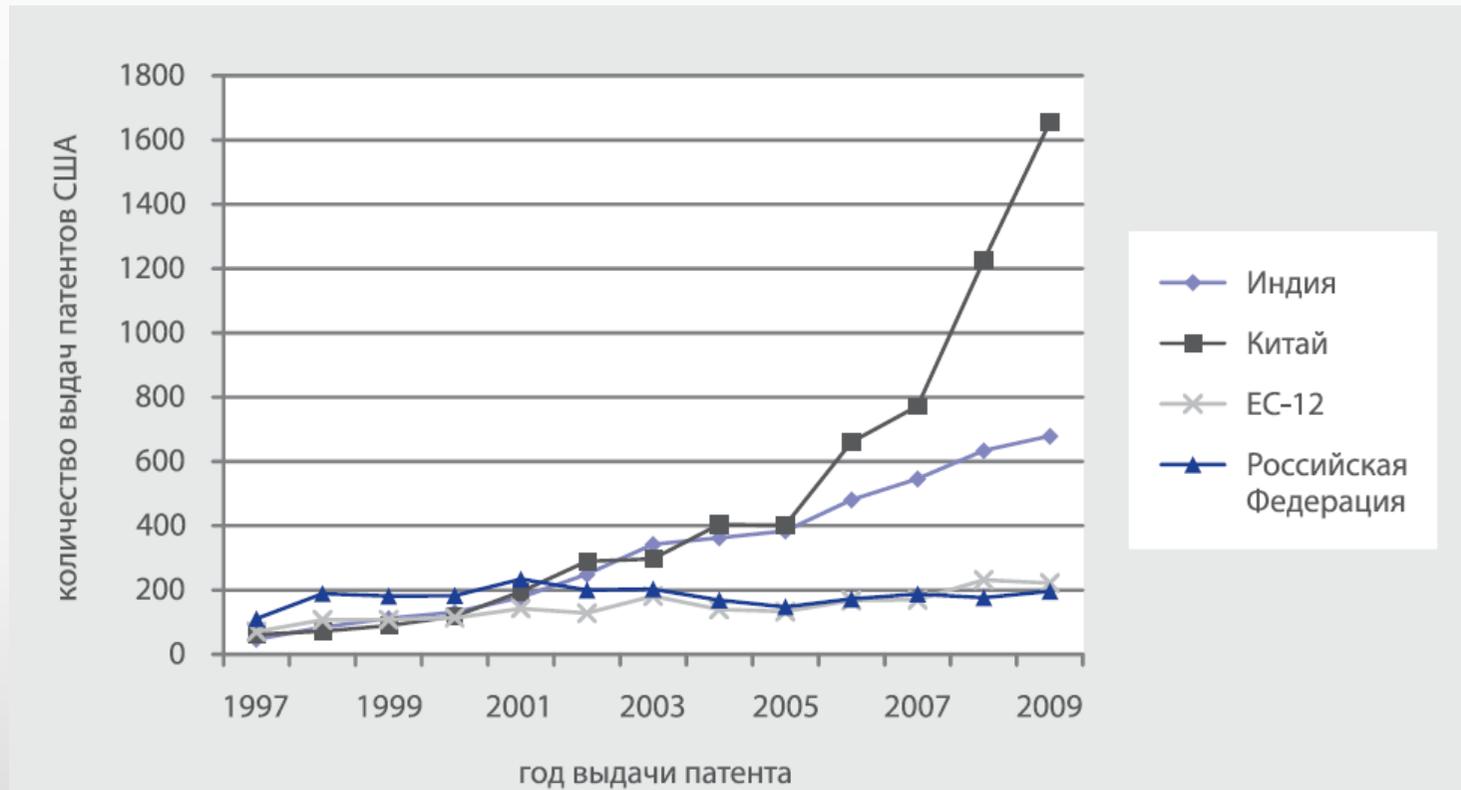
Note: The graph tracks total counts of patents in which at least one inventor is based in one of seven ECA countries: Bulgaria, the Czech Republic, Hungary, Poland, the Russian Federation, Slovenia, and Ukraine. "Purely indigenous patents" are those generated by a team whose members are all based in a single ECA country.

Source: Authors' calculations based on the USPTO Cassis CD-ROM, December 2006 version.

Germany plays a central role in new co-invention patterns



Eastern Europe and Russia are losing its edge to China and India



Примечание: на графике приводится сопоставление числа патентов минимум с одним из авторов из какой-либо из стран ЕС-12 с аналогичным показателем по Китаю, Индии и Российской Федерации.

Источник: расчёты авторов на основе данных БПТЗ США.

Acquiring technology from abroad

- International linkages are particularly important for absorption and innovation
 - Transition to export status increases absorption by about 33%
 - Joint venture with a multinational increases absorption by 41%

Role of Corporate Governance

- Firm's ability to tap world technology pool depends on strong corporate governance

Country Insight: Serbia

- Privatized Serbian firms show:
 - Strategic owner, foreign or local >> improves corporate governance
 - Foreign ownership >> increases technology absorption: large increases in production, productivity
 - **But R&D often declines post-restructuring!**

THE UNFINISHED RESTRUCTURING AGENDA

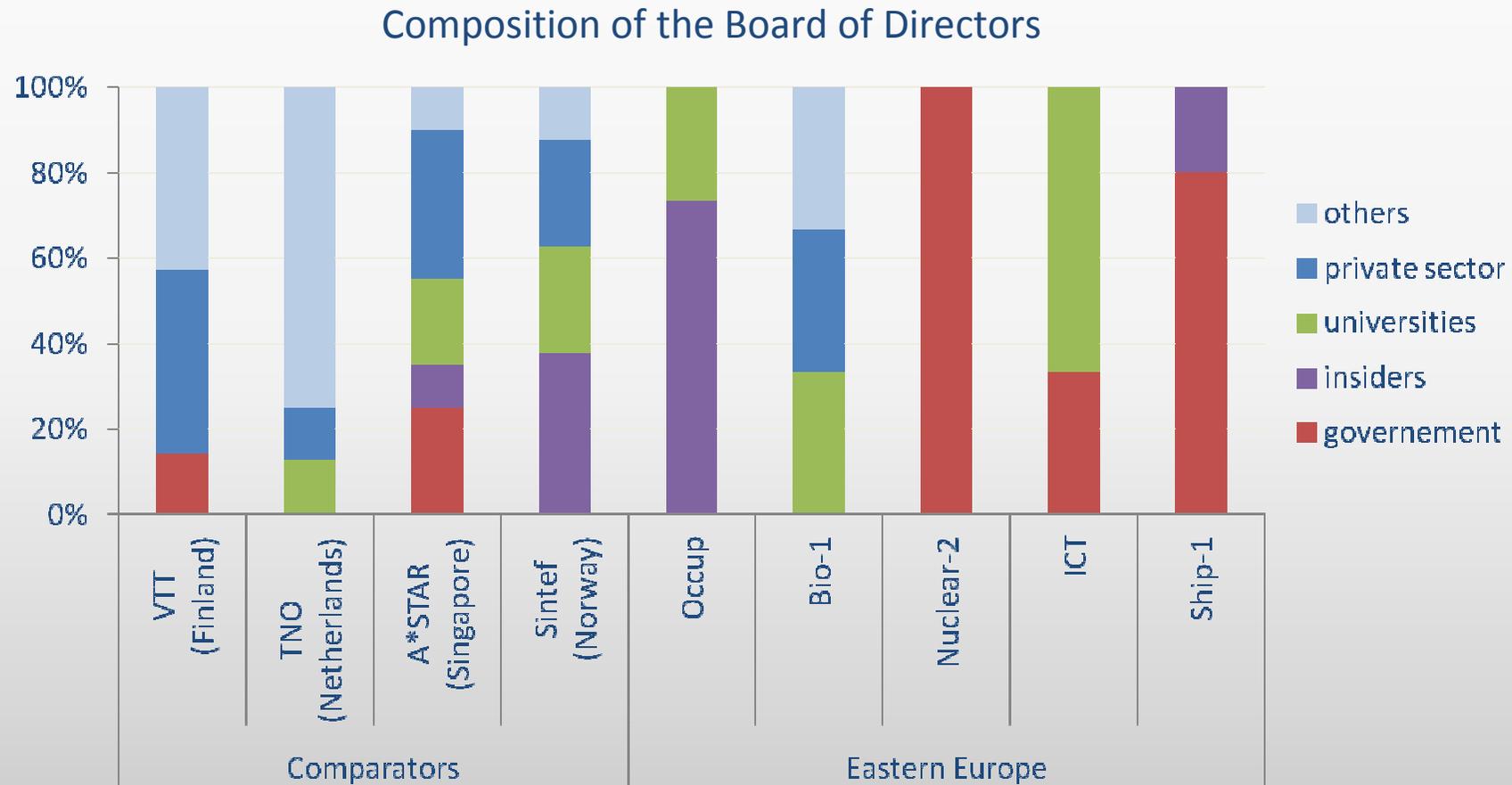
The State of Post-Transition RDIs

Benchmarking of case studies of 21 RDIs in Croatia, Lithuania, Poland, The Russian Federation, Serbia, Turkey, and Ukraine. It reveals , inter alia:

- Confusion between public and private roles.
- Isolation from other innovation actors and market.
- Governance, culture, staffing and staff incentives reflect another era.
- Weak scientific and commercial output.

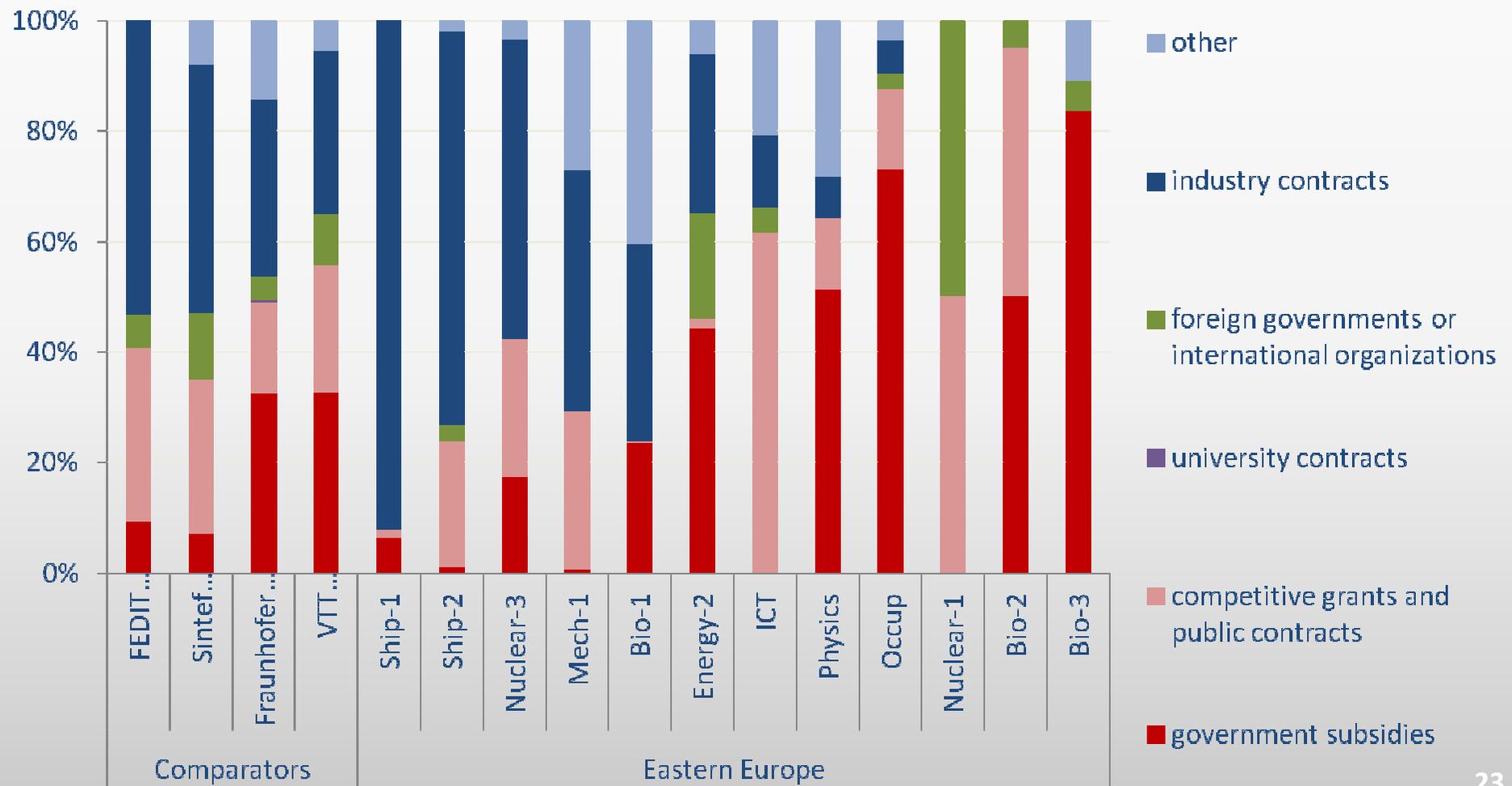
Stakeholder role in governance

Public RDIs in the region have little private sector representation in governance

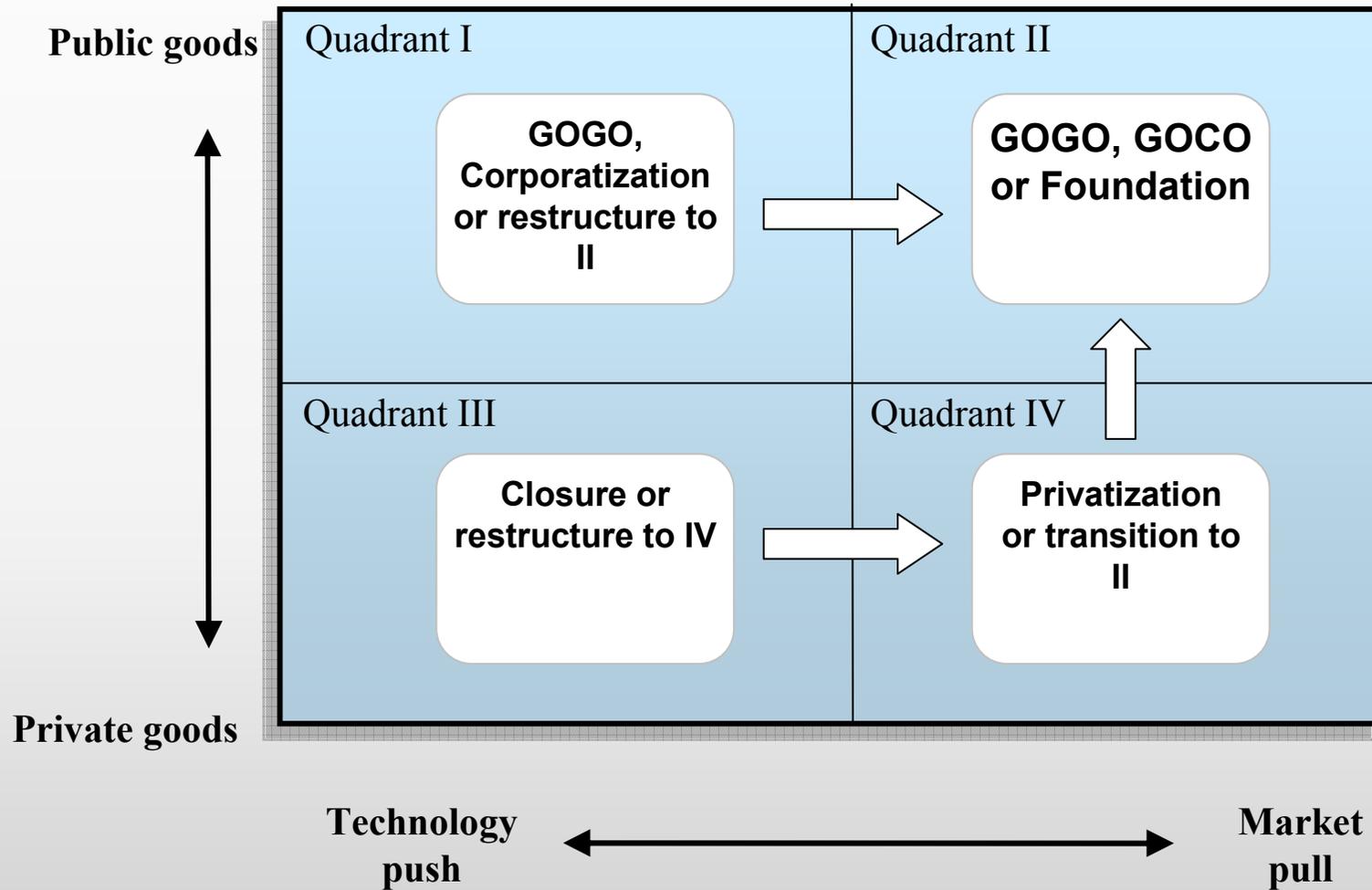


Public RDI funding

Composition of income of public RDIs



Classification of RDIs



Restructuring Options for RDIs

Option	Relevance to public goods RDIs	Effect on market-pull of RDI	Effect on RDI governance incentives	Political feasibility
1. Corporatization / autonomy Government-owned	+	-	-	++
2. Insider restructuring, Government-owned	+	±	-	+
3. Government-owned, contractor operated (GOCO)	+	+	+	-
4. Non-profit Foundation	+	-	±	++
5. Insider privatization	-	±	-	+
6. Outsider privatization	-	+	+	-
7. Liquidation/closure	-	+	+	--

Policy Implications

Bring
Innovations to
Market

- Rethink support instruments
- Sequence instruments to meet different gaps

Acquire
Technology from
Abroad

- Support collaboration of local researchers and foreign investors

Connect
Research to
Firms

- Ensure RDI governance, structure and funding models focus R&D efforts to commercialization

THANK YOU!



*Rethinking the Role of
Government in Emerging Europe
and Central Asia*