

Towards 2020: New Horizons for RTD and Innovation in the Western Balkan Region

WBC-INCO.NET Final Conference & Brokerage Event

Tech Gate Vienna / Donau-City-Straße 1 / 1220 Vienna / Austria

Parallel Session 4: Knowledge and
Technology Transfer

Towards a Superhelix of Innovation

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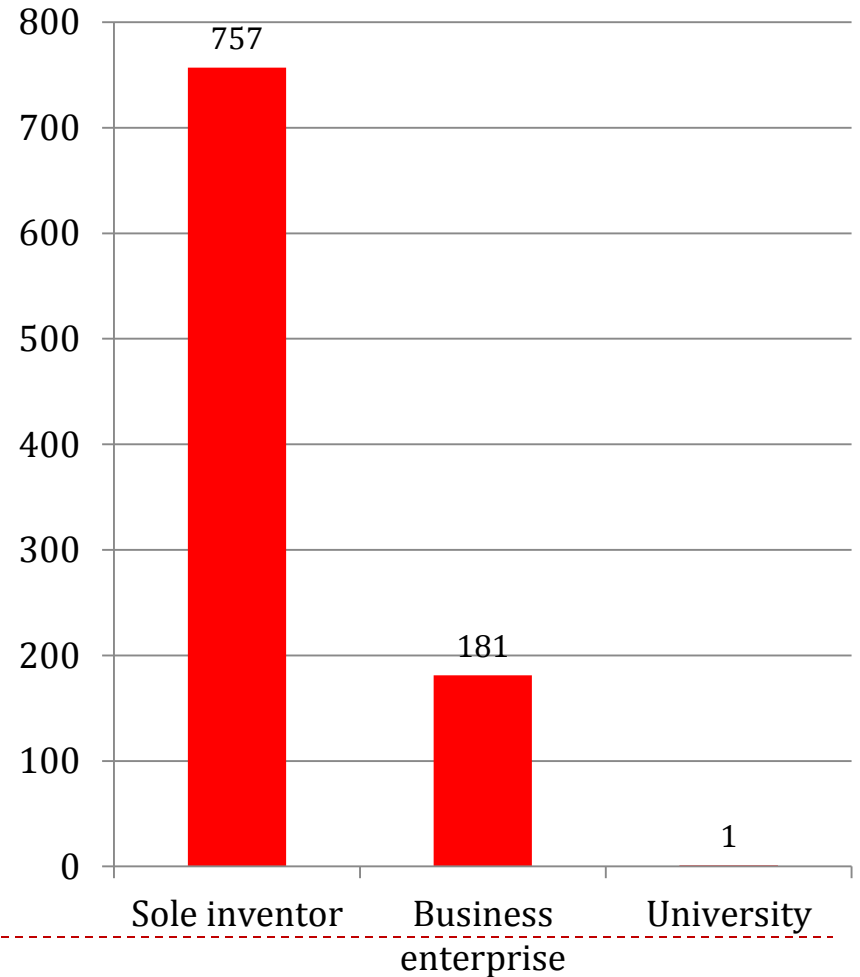
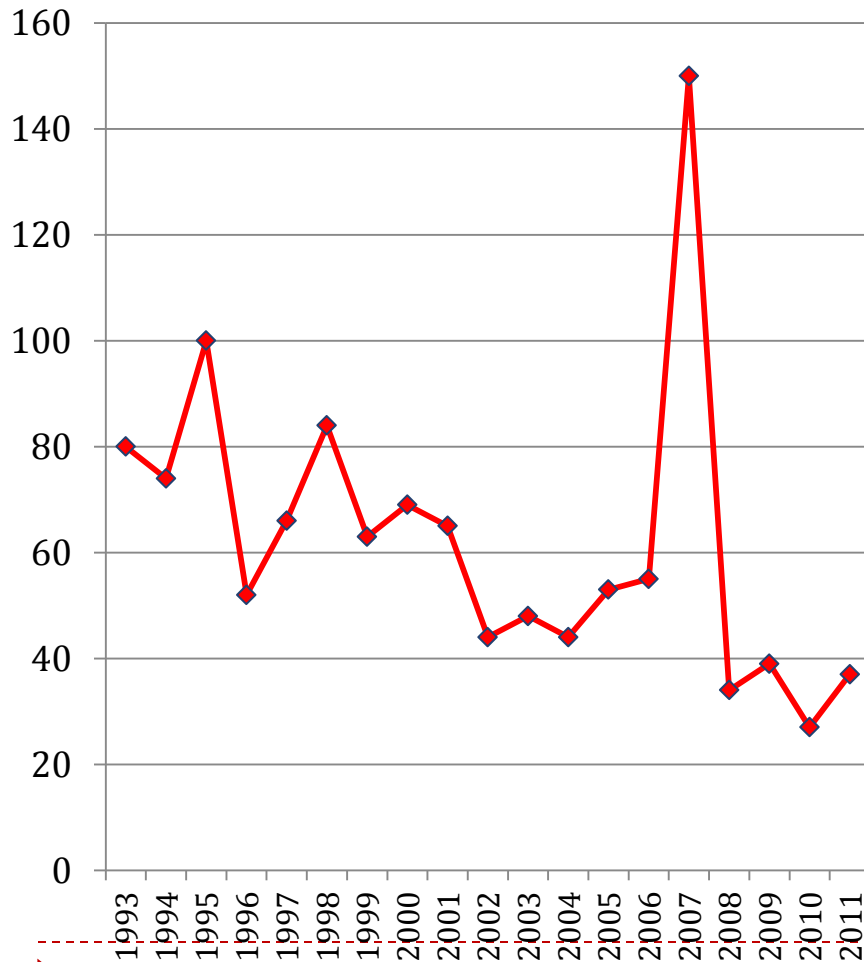


R & D Structural Statistics 2010

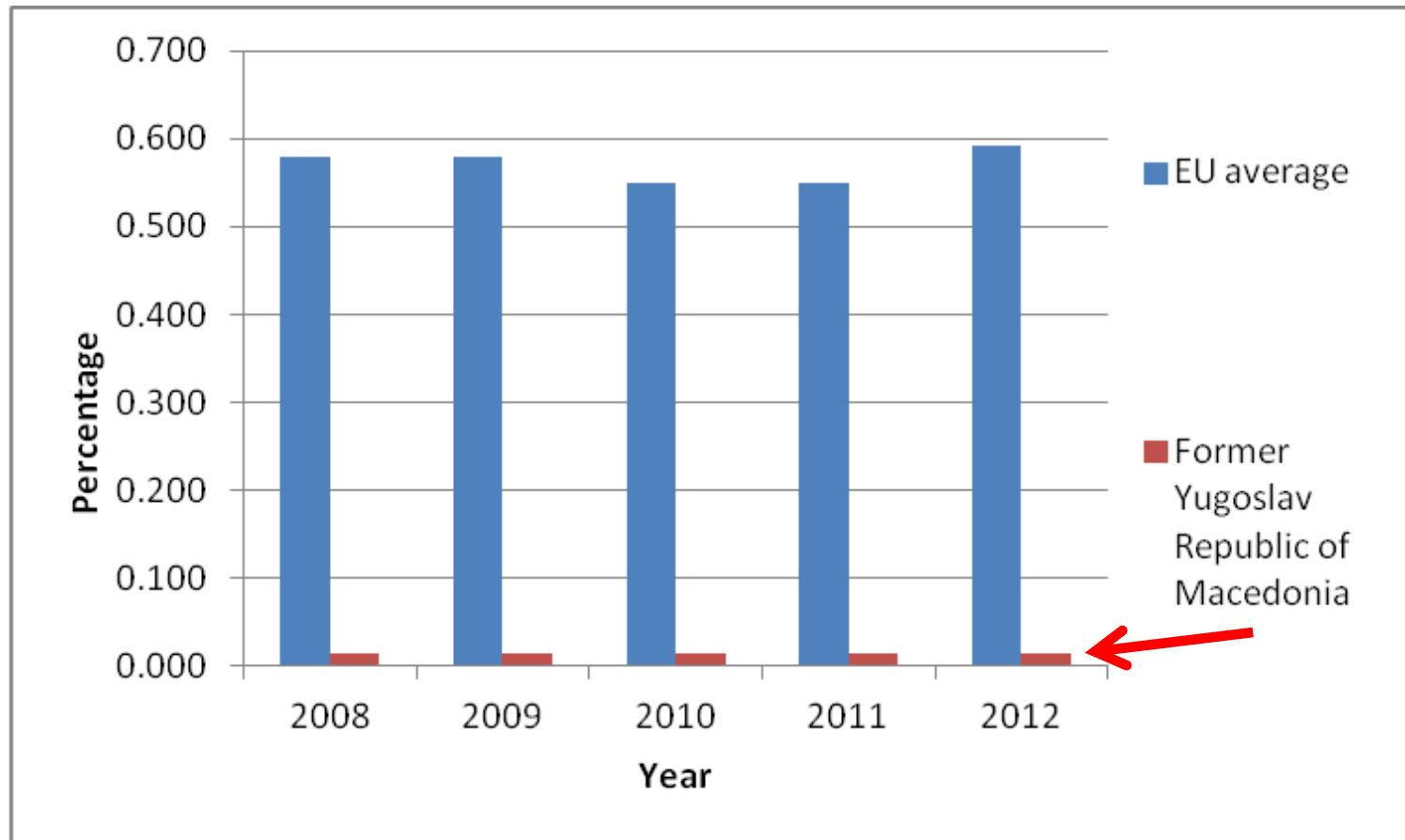
- ▶ The total income of research organizations in 2010 was **€32M** (HEIs: 70%, Gov: 24.6%, Business: 5.4%); 5.6% (€1.8M) from abroad

Field of Science	Number of Research Organizations	Total R&D personnel	Full Time Equivalents for Research		Total Income (M€)
			Total R&D Personnel	Researchers	
Natural Sciences	3	71 (1%)	16.5 (2%)	14	0.46 (1%)
Engineering	11	2061 (35%)	123 (14%)	114.25	14.24 (45%)
Medical sciences	16	2309 (39%)	258.3 (29%)	257.85	1.36 (4%)
Agricultural sciences	5	310 (5%)	29.7 (4%)	27.9	2.06 (7%)
Social sciences	10	460 (8%)	205.6 (23%)	145.2	2.62 (7%)
Humanities	15	697 (12%)	249.5 (28%)	177.7	11.38 (36%)
Totals:	60	5908	882.6	736.9	32.126

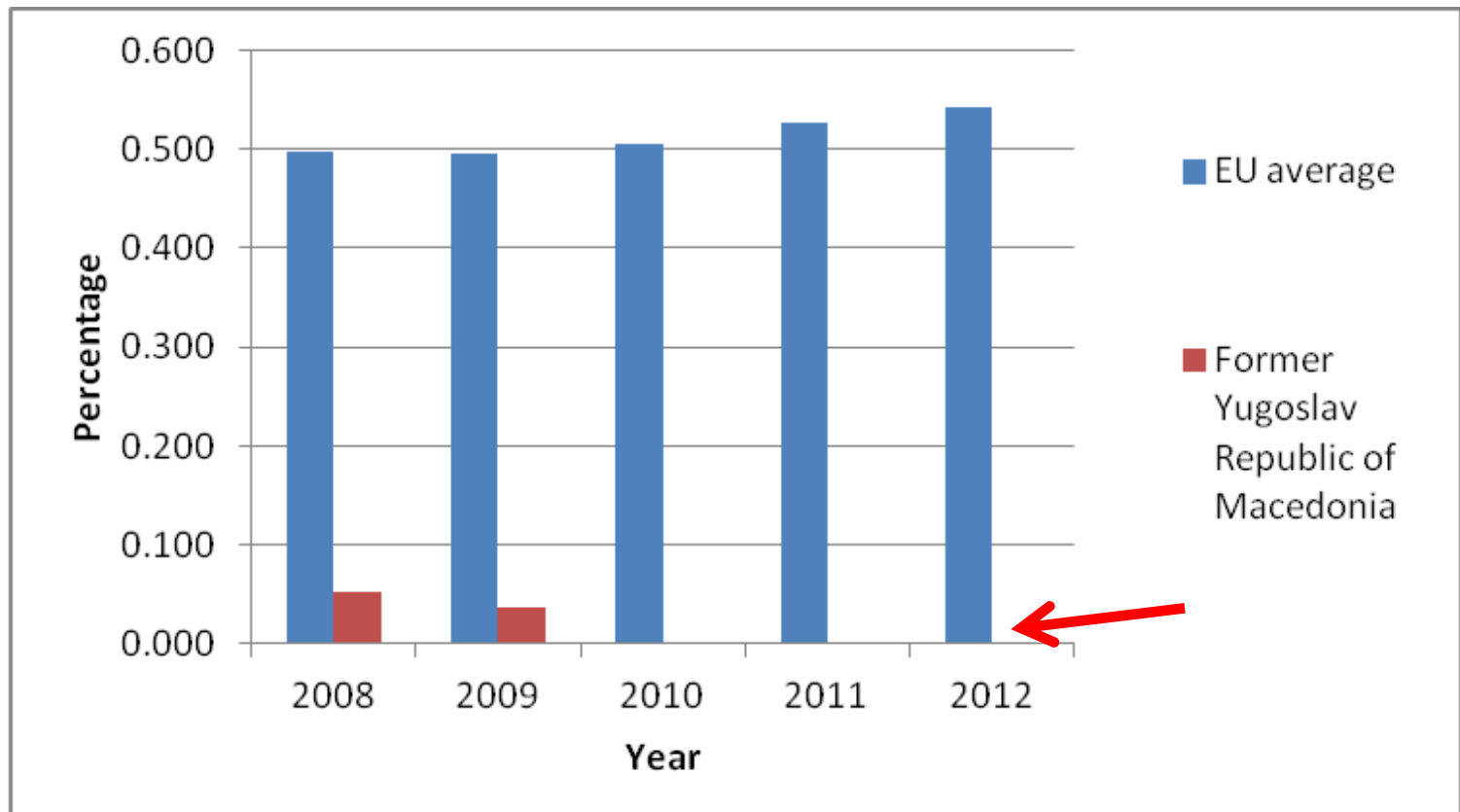
National Patent Applications



SMEs Innovating In House

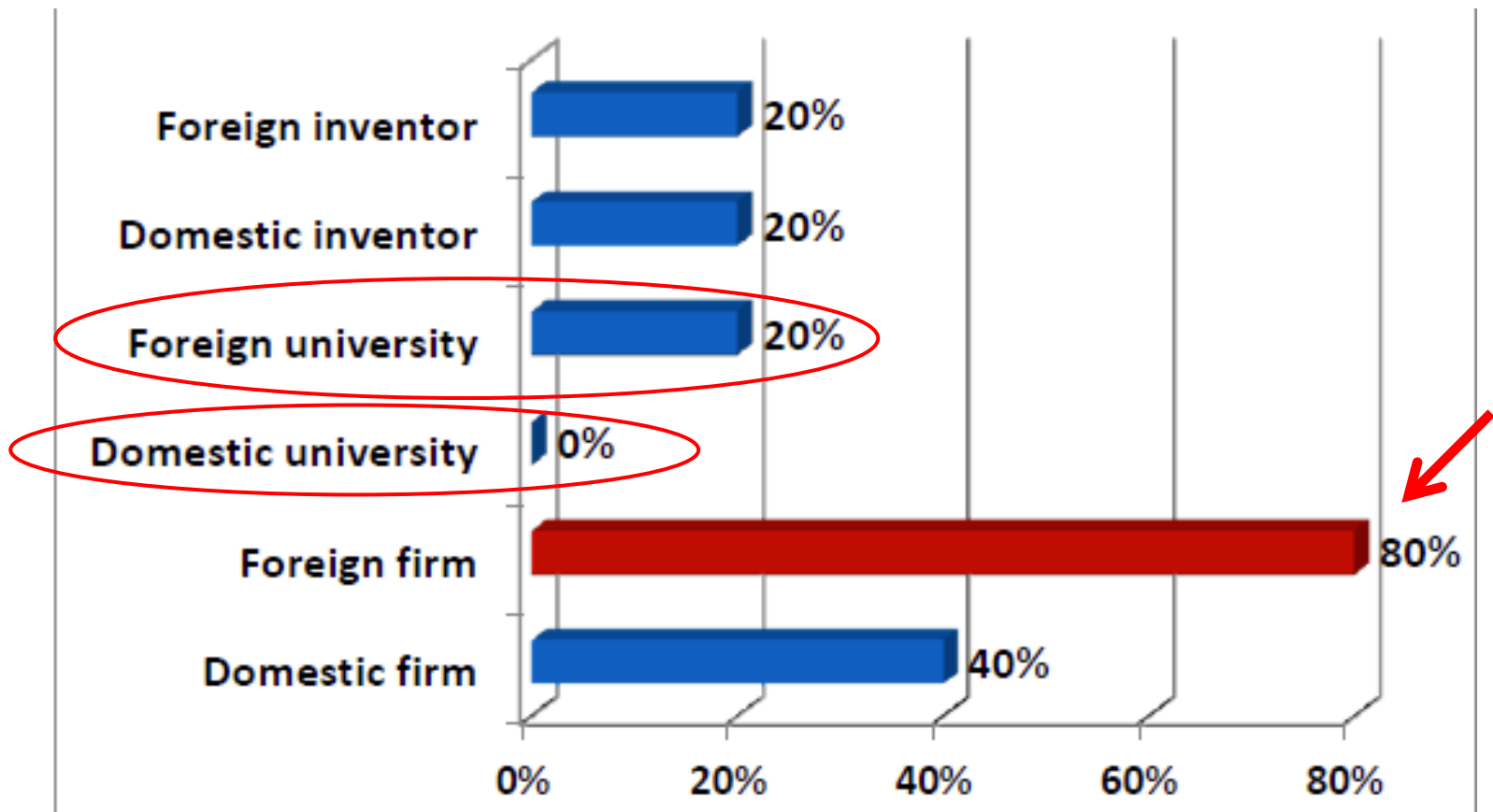


Public-Private Co-publications



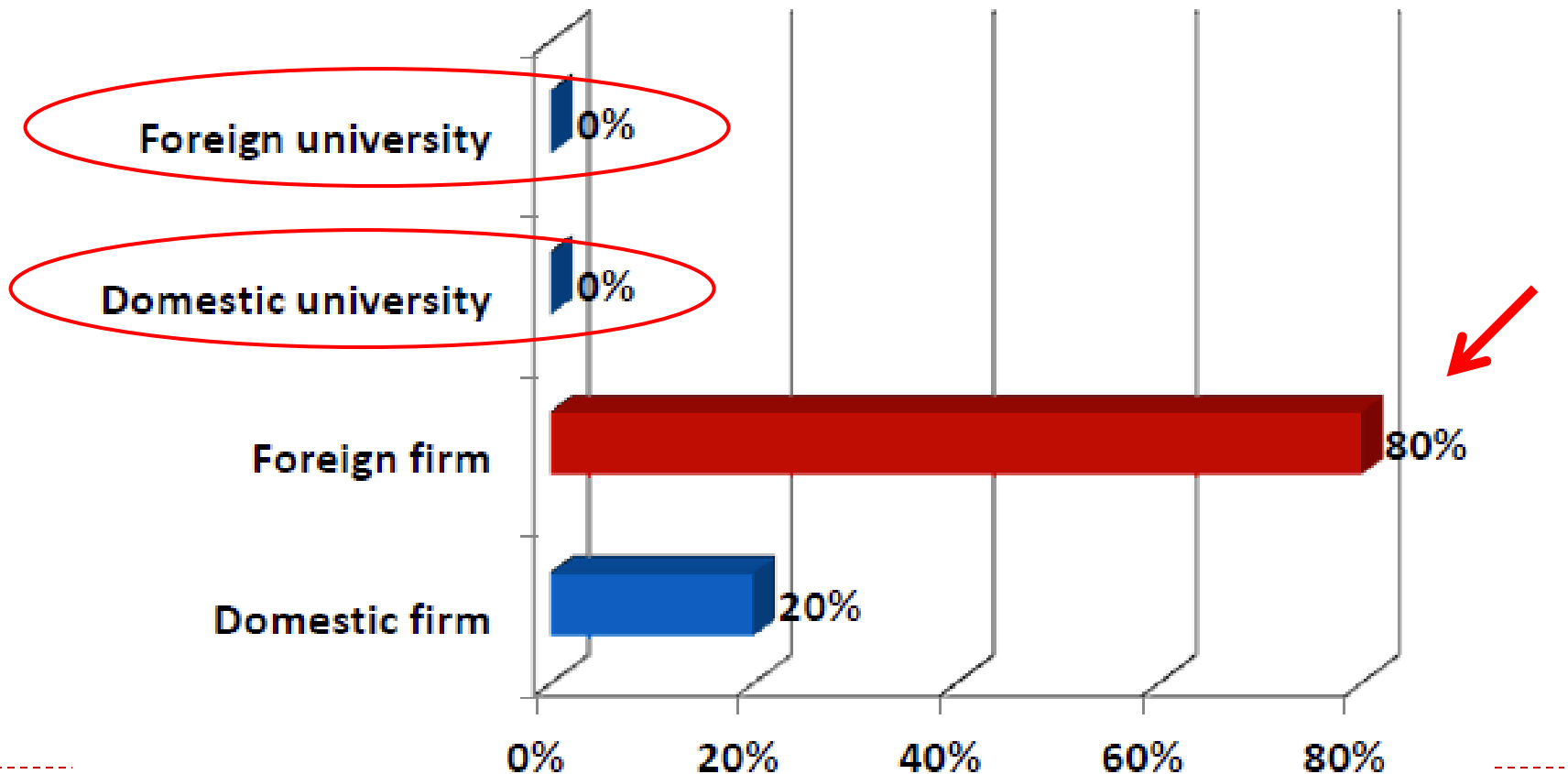
Development of Own Technology?

- ▶ Q6: YOU DEVELOPED THE NEW TECHNOLOGY WITH (MULTIPLE ANSWERS ARE POSSIBLE):



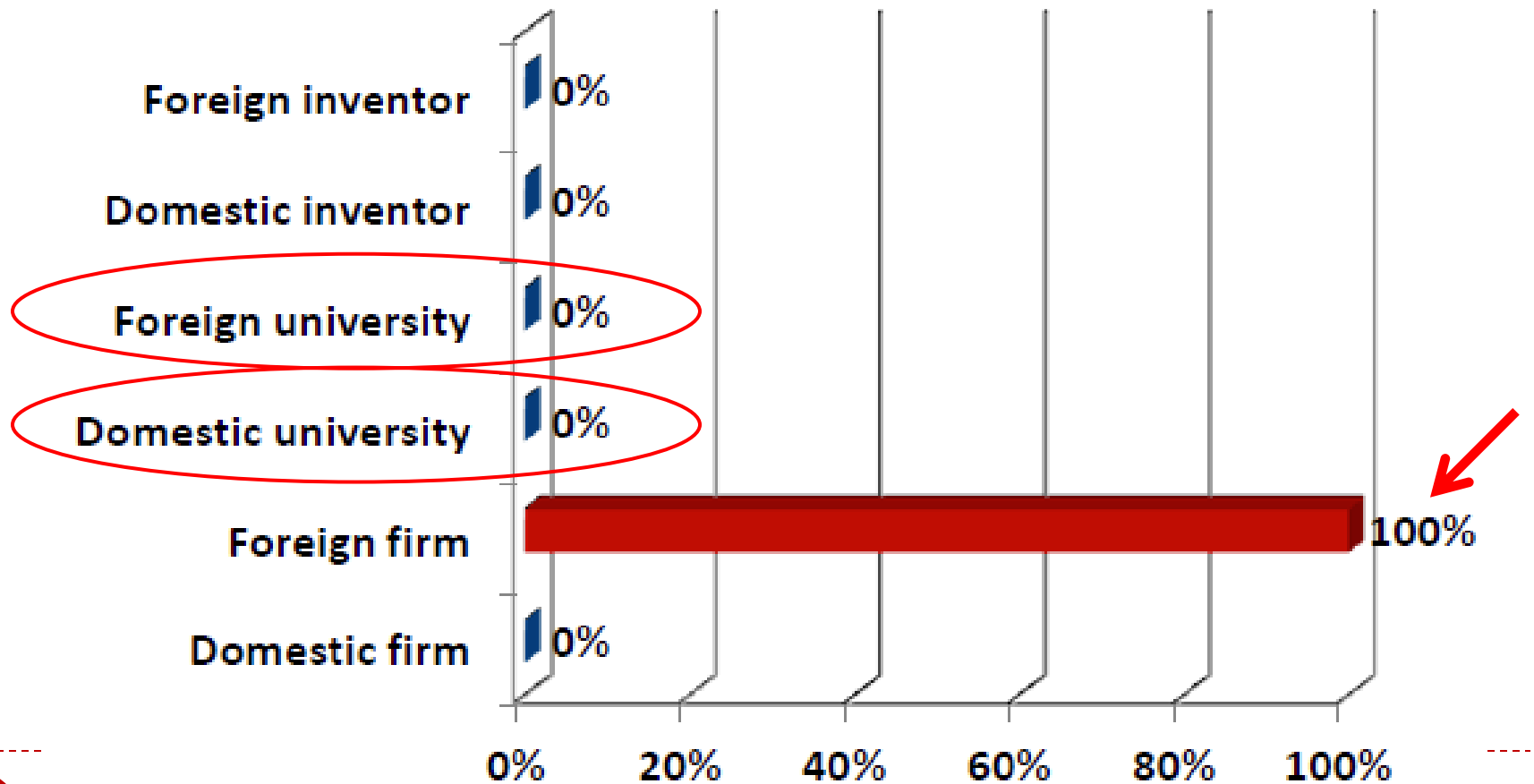
Transfer of Own Technology?

- ▶ Q7: YOU TRANSFERRED YOUR OWN TECHNOLOGY TO:



Receipt of Technology?

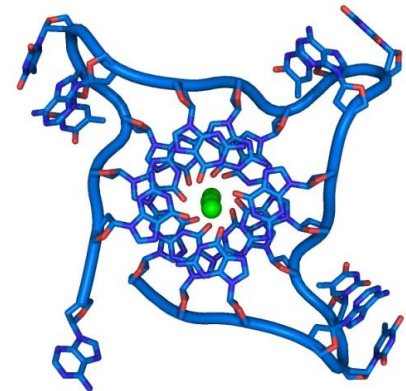
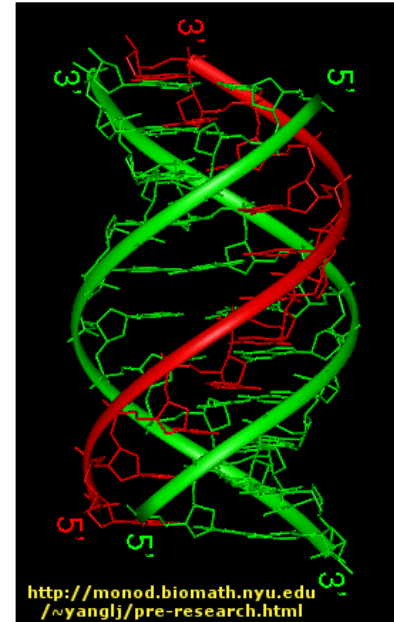
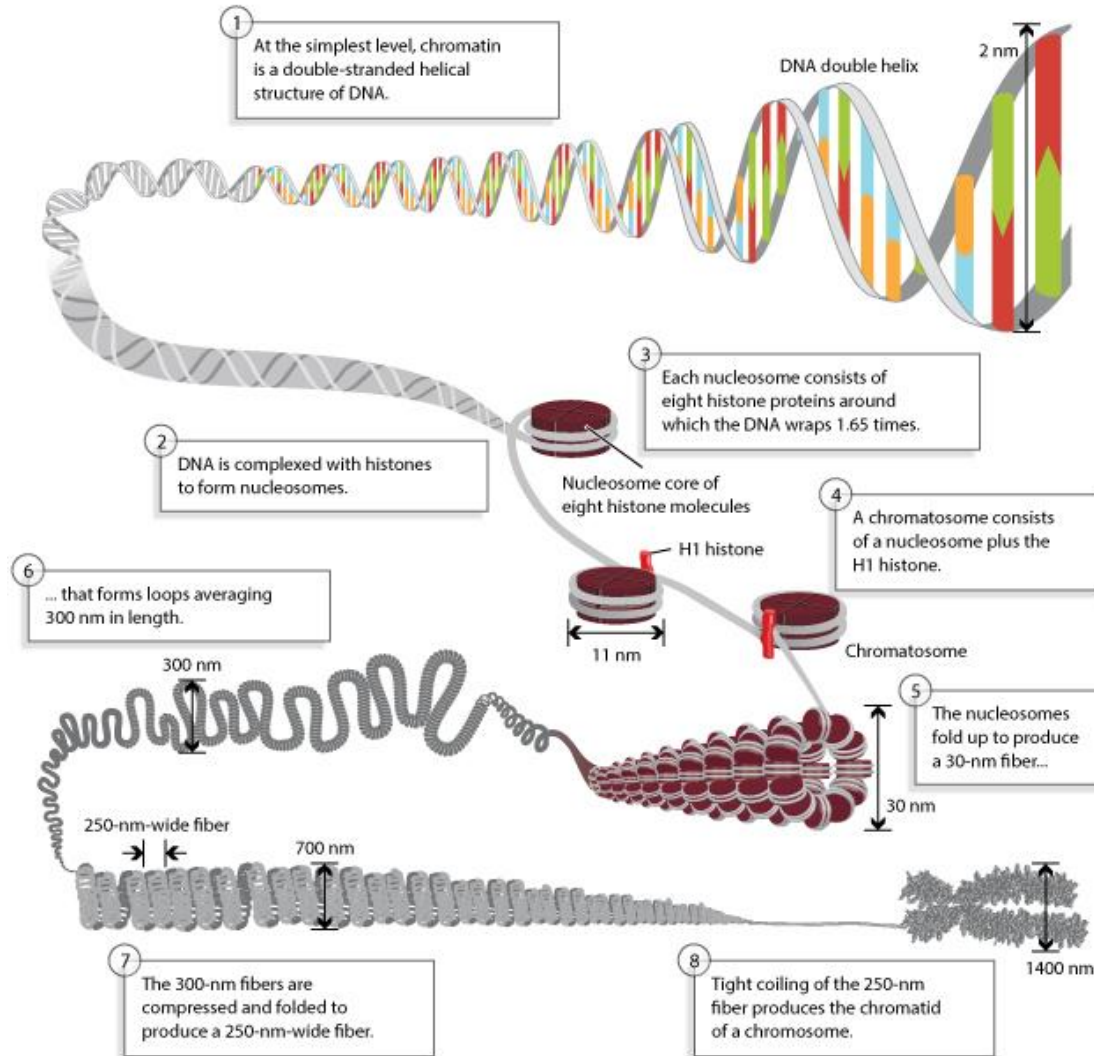
▶ Q8: YOU RECEIVED YOUR OWN TECHNOLOGY FROM:



Triple Helix in FYR Macedonia

- ▶ FYR Macedonia is ranked very poorly with respect to most of the factors of technological innovation
- ▶ Low level of cluster development; low level of ability for taking advantage of agglomeration economies and the Silicon Valley effect
- ▶ Low level of competitiveness of Macedonian firms: **125/142**
- ▶ Small absorptive capacity for new technologies
- ▶ Technological discontinuum
- ▶ Minimal investment in R&D
- ▶ **Impossible** for Macedonia, stuck in the phase of **economy governed by efficiency**, to implement policies of sophisticated technological development (e.g., Triple Helix)

Nucleic Acid Structure

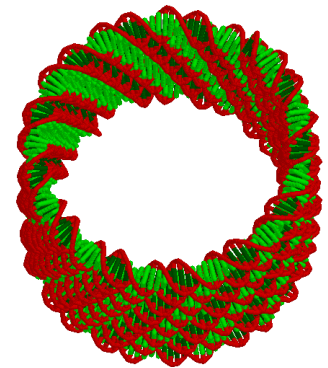


RIS3 Lessons Learned

- ▶ Existing or potential world-class competencies:
 - ▶ Two MASA research groups
- ▶ Specific scientific strengths and research specializations:
 - ▶ Energy/Environment, ICT, Materials
- ▶ Emerging scientific competences:
 - ▶ Environmental Sciences & Ecology, Education & Educational Research, Genetics & Heredity, Business & Economics
- ▶ Research infrastructures / Creativity hotspots:
 - ▶ Decaying national research infrastructures due to declining funding
- ▶ Fitness of curricula to the needs of the regional economy:
 - ▶ The formal education system struggles for market relevance
 - ▶ Graduates lack soft skills (work ethics, communication)

The Superhelix of Innovation

- ▶ Evolving models of knowledge creation/transfer/circulation
- ▶ Superhelix – new concept of knowledge creation
 - ▶ Academia
 - ▶ Business enterprise
 - ▶ Government
 - ▶ Civil society elements
 - ▶ Geography, infrastructure, agglomeration
 - ▶ Economic clusters, nodes
 - ▶ Environment, ecology
 - ▶ Energy
 - ▶ Education
 - ▶ Capital (human, political, social, legal, economic, natural)



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Thank You For Your Attention!

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