



WIENER WISSENSCHAFTS-,
FORSCHUNGS- UND TECHNOLOGIEFONDS

SBIR Type Programs and the Geography of Innovation: Case of Austria

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Topic No.1: Positioning of Austria

Where are the SBIR-style programmes?

Austria, some characteristics

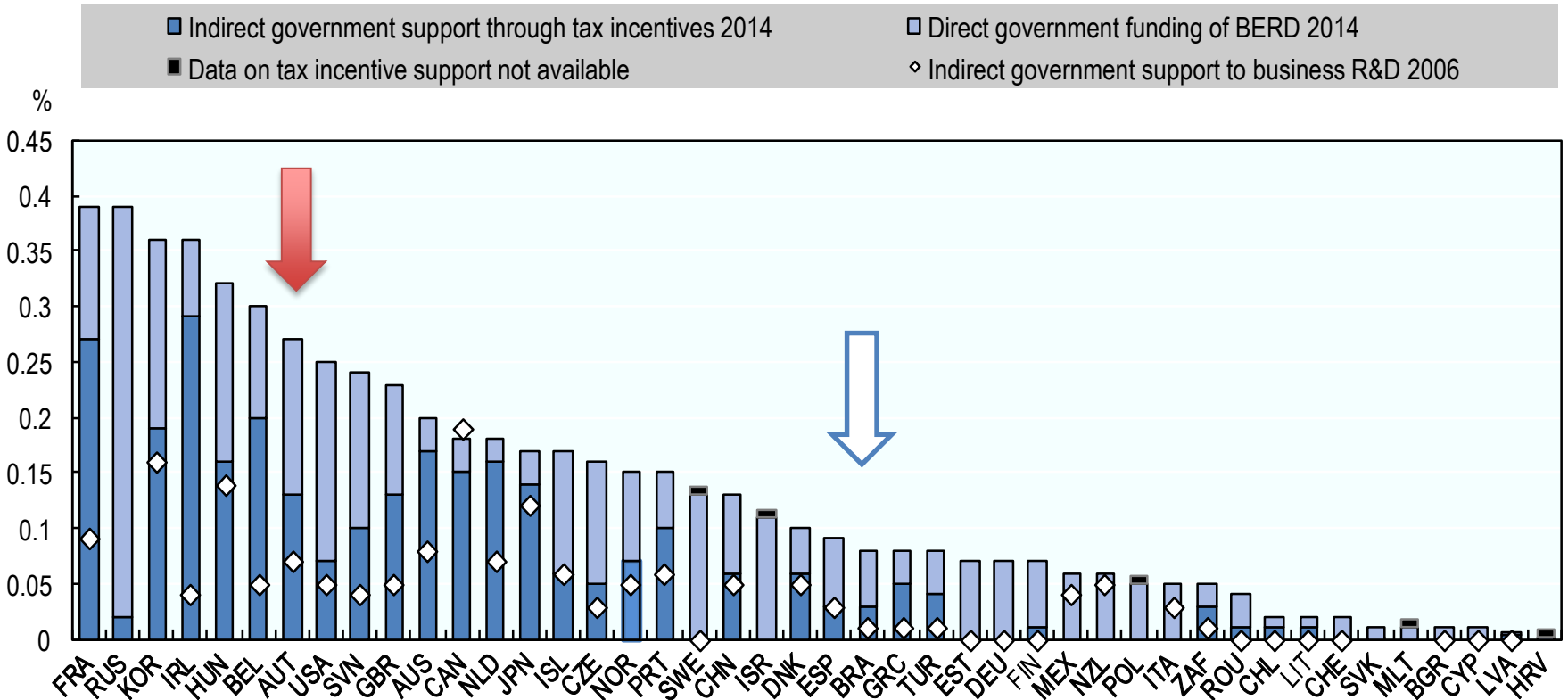
- Small, open and successful economy in Europe
 - 8.5 million inhabitants, around 45.000 USD GDP / person
 - For SBIR comparisons: would count as one U.S. state (approx. 1:40)
 - EU member since 1995, preceded by long catch up period after WWII
- Considerable R&D spending **> 3% of GDP**
 - Doubled in last two decades; currently input-output discussion
- No big MNE headquarters, unlike SWE, CH, NL, DK
- Strong export orientation (> 50%; goods and services)
- Strong presence of SMEs and “Mittelstand”
- Still strong in industrial production (21%, above EU28)
- Good /improving university sector, still weaker than SWE, CH, NL, DK

SBIR-style: a completely different logic

- U.S. programs appear to be determined i.a. by ...
 - ... presence of strong federal agencies, while many other institutions are on State level or private
 - ... distrust in active technology policy programs (→ ATP and others)
- Austrian programs are determined i.a. by ...
 - ... historical late mover / catch up situation; from imitation to innovation
 - ... belief in public subsidies to companies (→ kind of “inverse logic” as subsidies shall grow with BERD growth)
 - ... paradigm of solid, step-wise growth and incremental innovation, often in medium tech sectors
 - ... strong given presence of small companies
 - ... still low rates of tech Start Ups; very small VC market
 - ... since two decades strong focus on clusters and sci-ind-collaboration

Direct government funding of business R&D and tax incentives for R&D, 2014

Source: OECD



Four small European countries

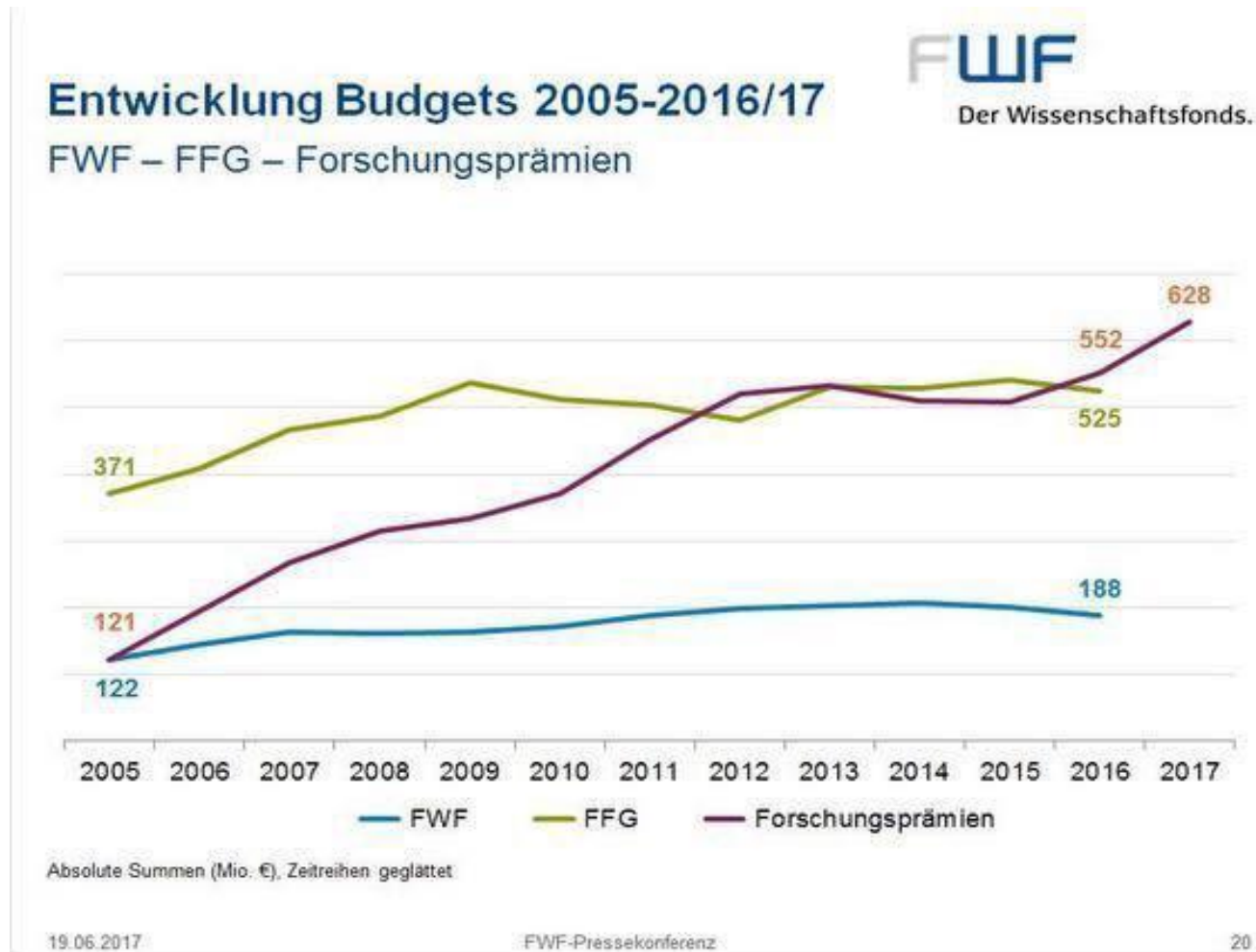
Country	Inhabitants (millions)	“Basic” research funding (million EUR)		Applied research funding (million EUR)		Total (million EUR)	Budget per capita (million EUR)
Norway	5	RCN (estimated 2/3 for “applied” research funding)				850	170
Austria	8.5	FWF	200	FFG	520	720	85
Finland	5.5	AKA	440	TEKES	380	820	149
Switzerland	8	SNF	800	KTI	150	950	119
SBIR (U.S.)	320	SBIR	2.500	...	8 (SBIR)

Notes: In Switzerland, over 80% of third-party funding is allocated via the Swiss National Fund (SNF) to fund academic research and only 20% via the “applied” Commission for Technology and Innovation (KTI). In Austria, applied research funding dominates. Over 70% goes to the “applied” Austrian Research Promotion Agency (FFG) and only 30% to the Austrian Science Fund (FWF). In both countries, this ratio has remained stable for a long period. In Finland, the Academy of Finland (AKA) funds academic grants and TEKES, the Finnish Funding Agency for Innovation, funds applied research and innovation. The relation is more balanced, but has changed considerably: in 2008, the TEKES budget (then EUR 530 million) had been more than 75% higher than the AKA budget (then EUR 300 million). The Norwegian RCN is an “all-in” council.

SBIR for comparison only to show the relations between this programme and overall small country funding portfolio.

Source for European countries: OECD, Innovation Review Norway, 2017

SBIR in Austria would mean: *Science Budget Inertia Rescue* measures



Generous tax credits with the „Research Premium“

- Tax credits for R&D expenditures (“Forschungsprämie”)
 - Increasing trend (→ OECD)
 - Austria currently 12% ... > 500 Mio. € annually; growing
 - From 3% before 2003 to 14% from 2018 onwards
 - Useful to help affiliates of MNEs stay in Austria
 - Useful to help companies grow
 - But not specifically SME-oriented (most countries do, e.g. Norway’s SkatteFUNN or Dutch WBSO)
- Instrument therefore mainly oriented at larger companies
 - 2011-2013: > 70% of overall sum goes to companies with 50 Mio. € annual turnover; 2/3 of the cases however are SMEs < 250 staff. SMEs > 150 Mio. €

FFG: Generous funding for companies

Lots of opportunities for SMEs

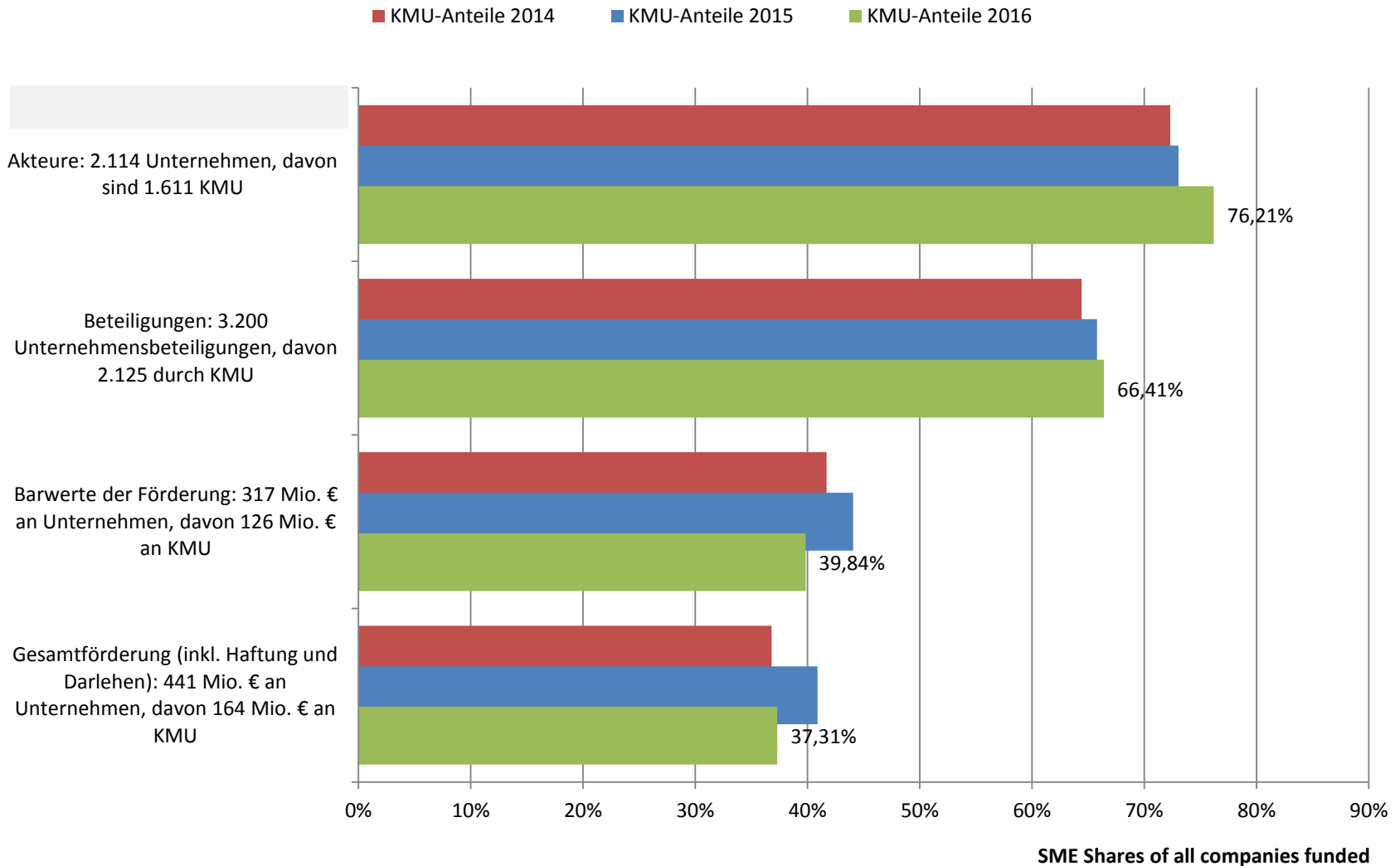
- FFG (Austrian Research Promotion Agency) main agency in Austria
- Annual budget approx. 500 Mio. €
 - Of which 320 Mio. € go to companies, rest to universities and PRIs.
 - Austria subject to EU legal framework
- Large areas with different tasks:
 - “Basic programmes”, i.e. bottom up R+D project funding, submitted by individual companies, in-house review mainly along techn. risk / market; Grants, loans, guarantees
 - “Structural programmes”, mainly science-industry collaboration, clusters, external reviews, in part large consortia and centres, grants
 - “Thematic programmes”, various initiatives, technology- or mission-oriented, external reviews, often larger projects, grants
 - “EIP”: Austrian liaison to EU Framework Programmes and ERA
 - “Space Agency”

FFG (II): Variety of programmes open to SMEs

- “Basic programmes”, large SME share, many newcomers, special line for tech Start Ups, broad innovation voucher programme ...
- “Structural programmes”, examples:
 - COMET and other competence centres, multi-company collaboration with universities, many SMEs take part
 - AplusB for academic spin offs
 - COIN for regional innovation and clusters
- “Thematic programmes” (TP):
 - SME access to individual projects or consortia, interesting examples e.g. in TP for Sustainability, TP for Energy or TP for ICT
- FFG directly to SMEs: approx. 130 Mio. € cash equivalent

SME numbers and shares in FFG funding

Source: FFG



Other sources

- Austria Wirtschaftsservice (aws); large promotion agency f. companies
 - Loans (main instrument), grants, guarantees, equity instruments
 - > 800 Mio. € financial framework translate into 100 Mio. € cash equivalent, of which > 70% allocated to SMEs
 - Nine regional provinces, all have their innovation agencies, all fund SMEs with a variety of instruments
 - Access to European Framework Programmes:
 - In last 10 Years (FP7 + into H2020) > 1.000 Austrian SME participations
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Rough estimation: public RDTI subsidies for Austrian SMEs, 2016 or before

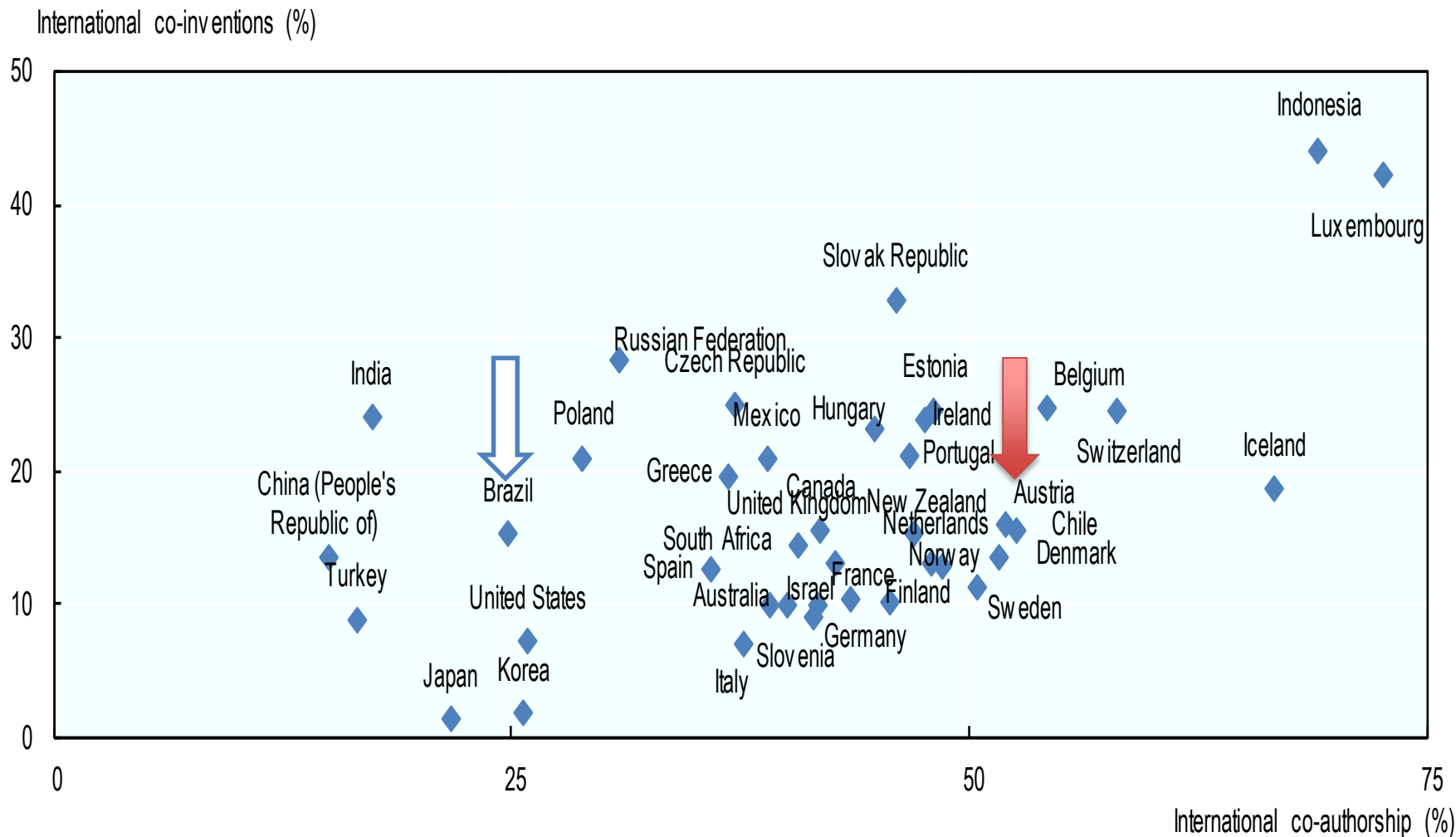
Source	FFG	aws	Regional	EU FP	R+D Tax	overall
Amount for SME, Mio. €	130	70	70-100	20-30	150	440-480

Topic No.2: Positioning of Vienna

A sketchy Geography of Innovation

The Austrian innovation system: international co-inventions and co-publications

Source: OECD



Vienna, also the Austrian R&D capital

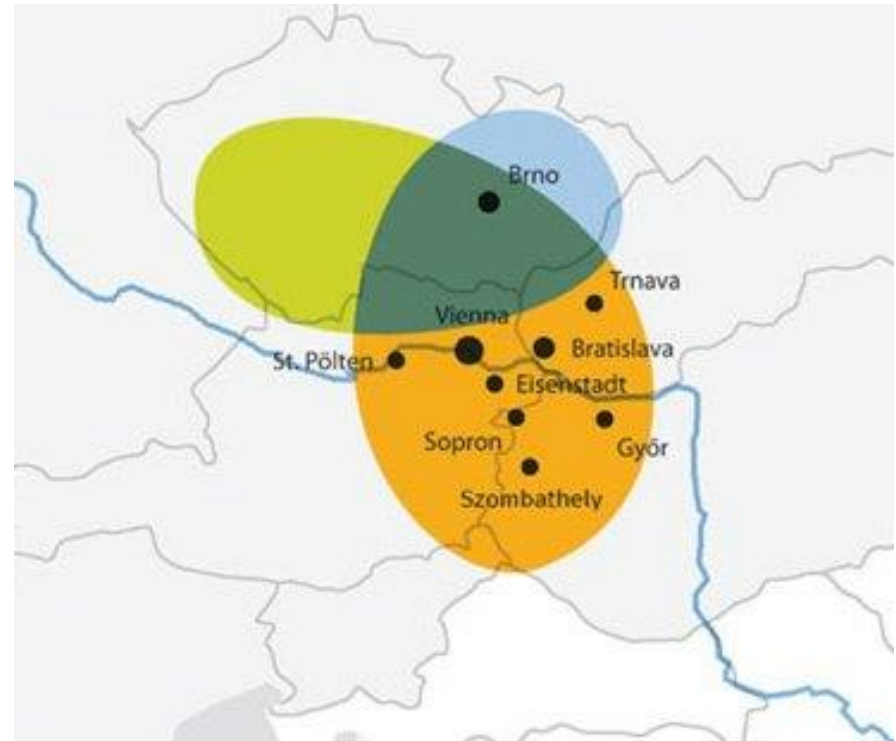
- An old capital, and history matters
 - Nearly a quarter of the countries' population, concentration of actors
- Approx. 20 HEIs including 9 public universities
 - With > 200.000 students
 - Rankings: Univ. of Vienna only Austrian in top 200
 - Attractive for international talent despite budget / career issues
- Dense population of research organisations, groups and fields
 - Considerable strengths in Life Sciences, Physics, Formal Sciences ...
 - 2/3 of all Austrian (approx. 200) ERC grants in Vienna (126)
- Strong economy, with thriving service sector and still with production
 - Financial services, ICT, Life Sciences, Transport equipment ...
 - Increasing Start Up boom
 - Still a door to Central and Eastern Europe

The Vienna Region

- Not Sao Paulo, London or Paris: “In 20 minutes with the tramway to the vineyards” (and the wine is good)
 - To Bratislava, capital of Slovakia, in less than an hour by car or speedboat
- No sizeable innovation area around, neither in State of Lower Austria nor in Czech Moravia, W. Slovakia or in W. Hungary
 - Strong cross border labor market on all levels
 - Only few self-reinforcing dynamics in region, including car industry in Slovakia, universities in Brno (CZ), some CoEs
 - Vienna researchers cooperate with the whole world, but less with the neighbouring regions

Vienna Region → CENTROPE

- “CENTROPE” – common branding effort of these regions incl. Vienna over last ten+ years
 - In various policy fields, incl. transport, culture, tourism, economy
 - Innovation matters added late and not as a top priority
 - Some common funding through EU cross-border Structural Funds
 - Overall: no roaring success, not enough common interest, investment and drivers



CENTROPE compared to four benchmark regions

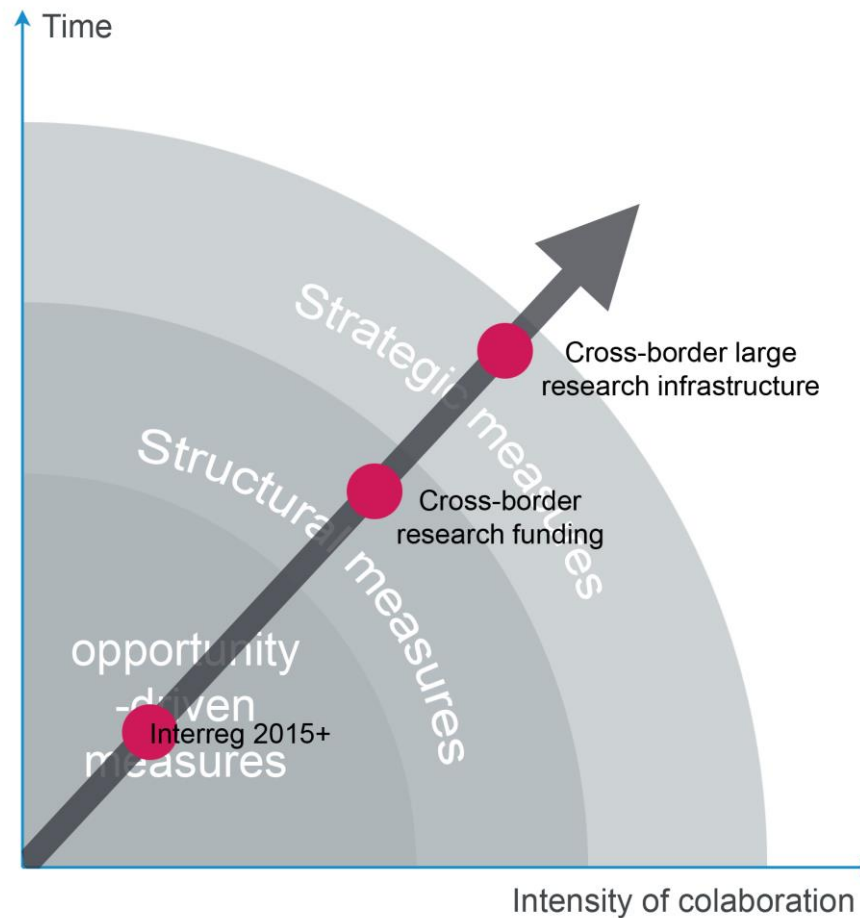
- WWTF in 2014 did a comparison between CENTROPE and four established cross border (CB) innovation regions in Europe
 - Oresund: Copenhagen – Malmö / Lund (SE/DK)
 - ELAt: Eindhoven – Leuven – Aachen triangle (NL/BE/DE)
 - TMO: Upper Rhine with Strasbourg, Basel, Baden region (FR/CH/DE)
 - IBK: Around Lake Constance (DE/CH/AT)
- These four CB regions had time to develop + connect strong actors
 - Key actors with strong (complementary) interests like HEIs as drivers
 - Logic: become stronger together in a more competitive world
 - EU Structural Funds as glue and field to experiment
 - Lean Governance, trust, no political show-off
 - Closeness and integrated labor markets matter

CENTROPE compared: some „W's“+„T's“ in SWOT

- No leading universities, too few CoEs and top infrastructure
- Regions in CENTROPE are innovation followers
 - Weak innovation performance in some regions instead of complementarity
- No / few MNE headquarters
- Brain drain still from SK, HU, CZ; low student mobility within region
- No clear common RTDI strategy
- Caught in the “not strong enough – not bold enough” trap?

- Our main recommendation: develop selective cooperation patterns like Vienna – Brno

CENTROPE: what might evolve over the years?



Thanks for your attention!

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WWTF FACTS; www.wwtf.at

- Only larger Austrian private non-profit organization established to promote science and research
- Strengthen strong fields in Vienna research
- Funding since 2003: about **160 Mio. € have been awarded** (from private banking foundation (116 Mio. €), City of Vienna (45 Mio. €)), current annual funding budget of about 13 Mio. €
 - More than 200 larger projects
 - 22 young group leaders/senior scientists have been brought to Vienna
- **WWTF Mission:**
 - We fund **top scientific research** in Vienna
 - We provide substantial funding for **larger research projects** and to bring **Research Group Leaders** from abroad to Vienna
 - We **run competitive calls** according to highest international standards