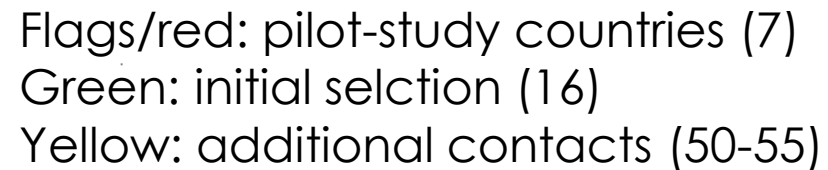


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WTO Nov 26, 2018, 9.00-13.00
Eskil Ullberg, PhD



Thank you!

~100 inventors and gov. officials
participated in this pilot-study

- ▶ WTO and team for inviting to this event
- ▶ STINT/Scopus (world education data), WIPO (world patent data)
- ▶ WTO missions of Chile, Peru, El Salvador, South-Africa, Kenya, Uganda and Azerbaijan
- ▶ Ministries of foreign affairs, economy, industry and trade
- ▶ Patent office teams to prepare data, workshops (3-10/country)
- ▶ Initial dialogue with Vietnam, Indonesia, Bangladesh, Tunisia, Costa-Rica, Colombia, Paraguay and others for Pilot+
- ▶ Pilot-study funded by Foreign Office of Sweden; invited to the program launch by Amb. Blockert now Amb. Anzén

Introduction:

Leveraging human capital formation through markets in patents for developing nations

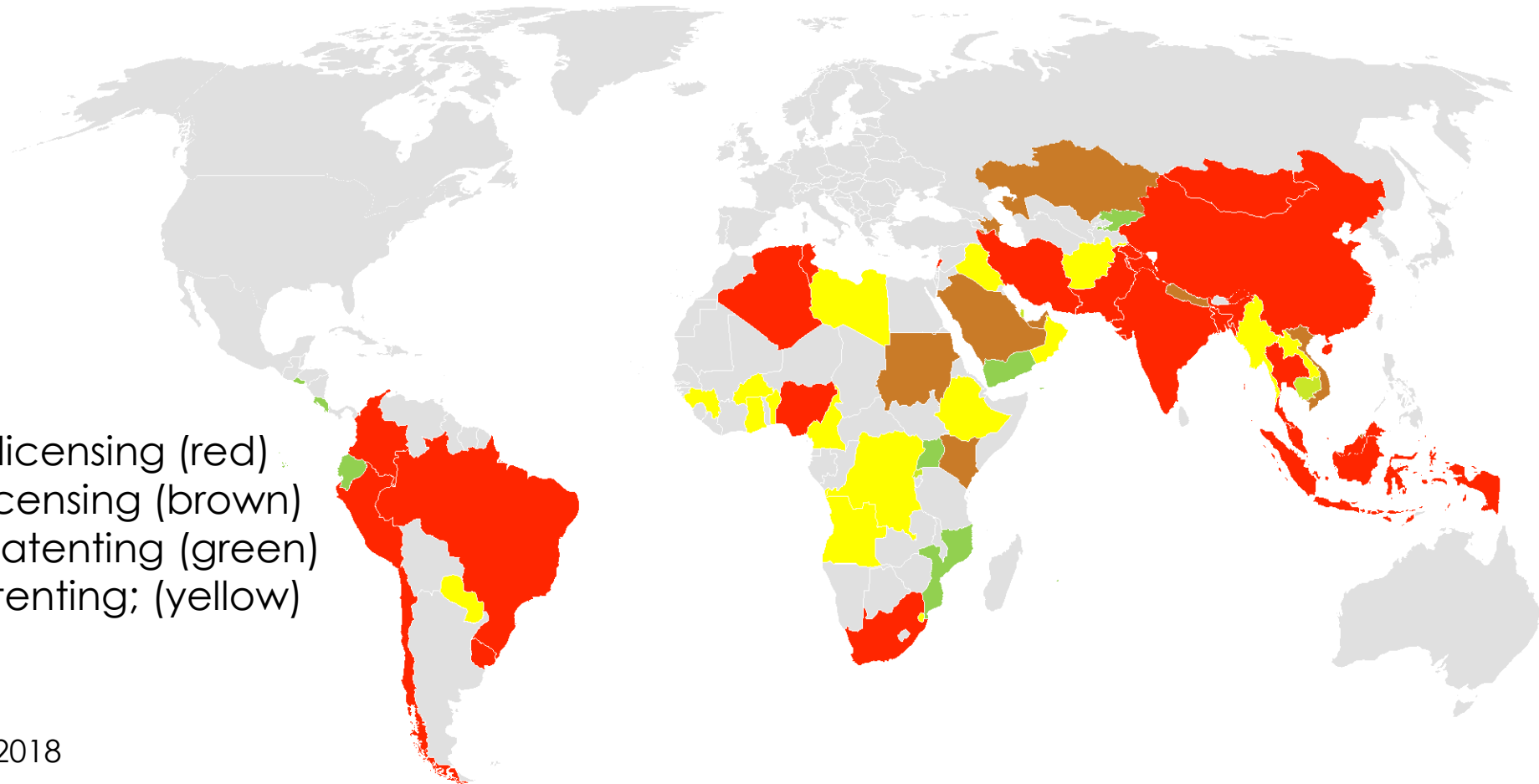
- ▶ Economic growth is essentially driven by growth in productivity enhancing technology
- ▶ A level playing field market in patented technology (licensing, transfers) best way to grow productivity enhancing technology – all parties benefit from gains in specialization
 - ▶ Alternative to trade secrets, boarder than joint ventures, trade with people you don't know
 - ▶ Transfer does not increase the productivity enhancing technology, new technology needed (forced tech transfer, industry subsidies, IP theft, other destroy markets in ideas)
- ▶ Patent licensing allows inventors to exchange and build access to a patent portfolio competitive enough to compete in the global market
- ▶ Trade is first of all in ideas – then integrated in products/services
- ▶ Inventors conceive technical solutions, patent some, keep trade secrets, innovators use
- ▶ I believe it is in the interest of enlightened governments to invest in HCF in this way, as intangible assets, which includes patents, has the highest return on assets (ROA)
- ▶ Countries from 4 groups different in patenting but high human capital formation growth; an overwhelming curiosity and interest has resulted in 55+ country contacts.
- ▶ The goal has been to define the projects needed to enable such a market

Why is Trade in Ideas important?

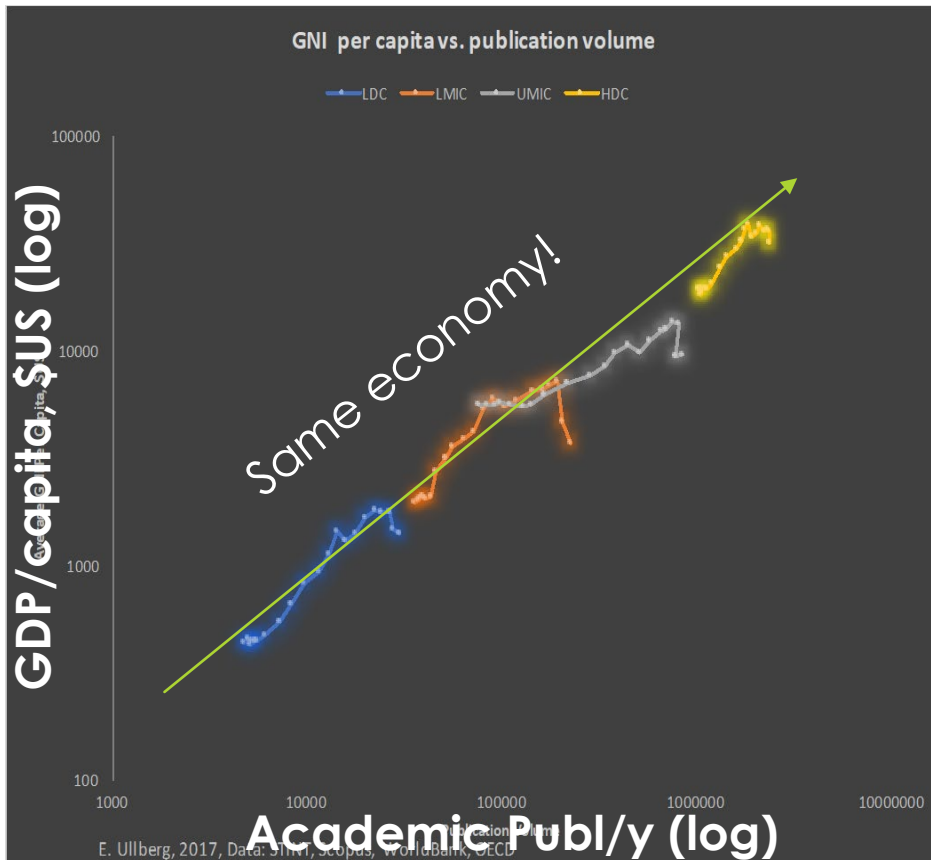
- ▶ Highest Return on Intangible Assets 11% (manuf. 7%, finance 3.5%) – best way to ameliorate terms of trade – only sustainable resource every country has
- ▶ 1,5% of world trade in "royalty" on IP, up from 1% 10 years ago
- ▶ Patents provide productivity enhancing technology and thereby growth
- ▶ 40% of world product trade could be replaced by 3D printing (ING report) making IP even more critical (40% of US export has embedded IP)
- ▶ Inventions essentially local, made by individuals or small teams – creates an asset that can be used to cross-license for other technology to the world markets
- ▶ Recent decades high growth in human capital formation
- ▶ Mechanism missing in many developing nations

Countries selected from 4 "clusters" of similar nations (HCF, Pat, Eco) to represent all

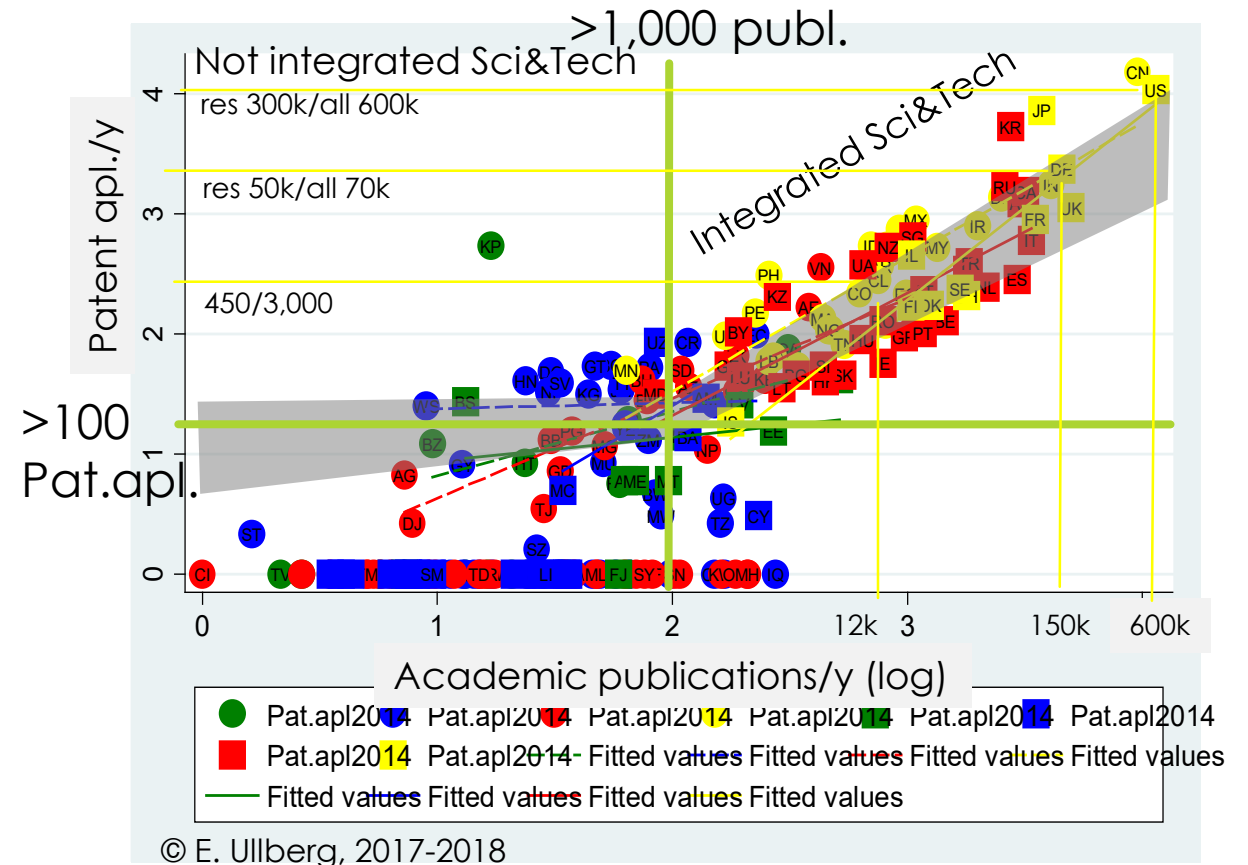
- 4: Institutional licensing (red)
- 3: Beginning licensing (brown)
- 2: Beginning patenting (green)
- 1: Little/no patenting; (yellow)



Same economy, two economic systems:
 Increasing returns on HCF:Pat apl./HCF sharper relationship in north
The patent system provides the integration of science & technology (major thesis)



Data: STINT, Scopus, Worldbank, OECD, WIPO



Similar countries in each "clusters" based on HCF, Patenting, GDP

Forward looking pilot-study: What is the impact of patent licensing? How study this to enable trade in ideas as new economic development policy?



7 countries in 5 (video) workshops, 100+ respondents of almost 400 national inventors representing

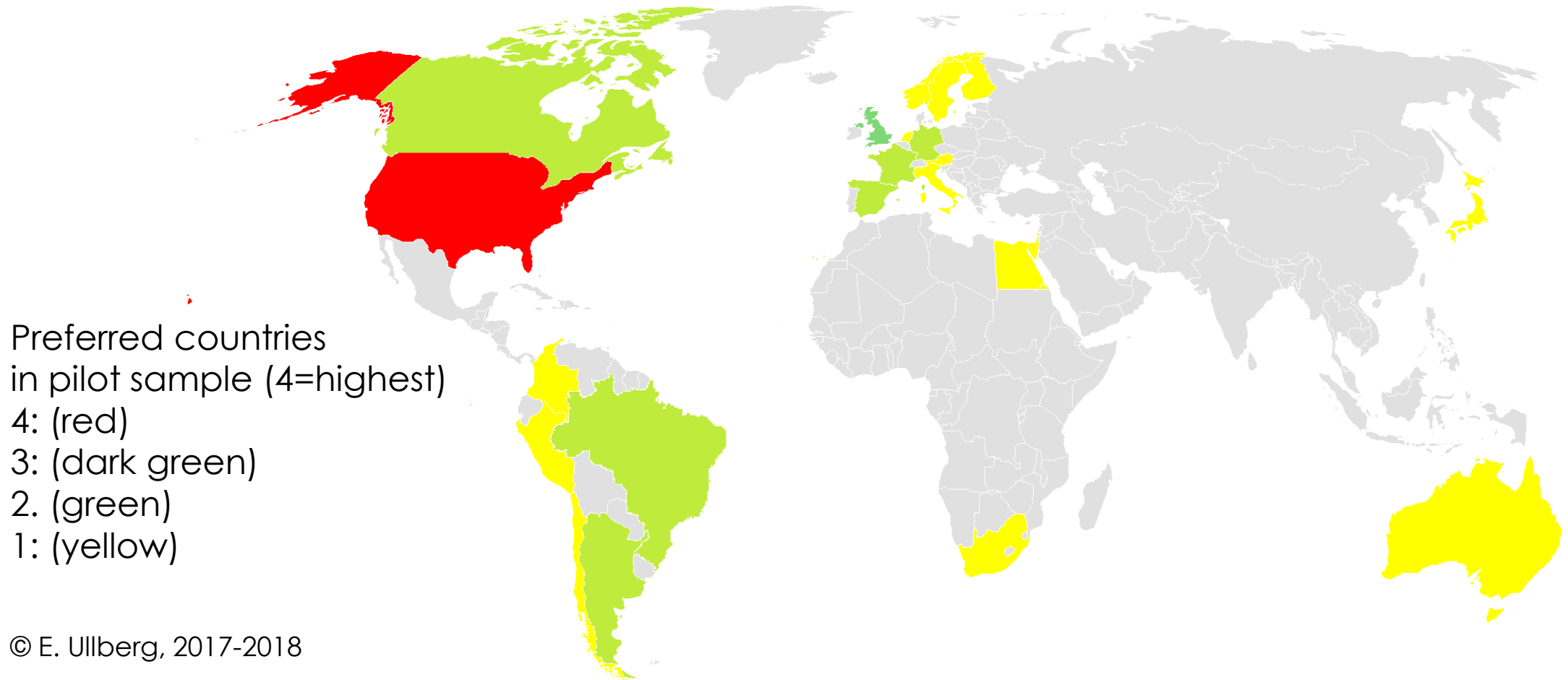
1. Terms of trade data on 200+ contracts (economic potential)
2. Discussion on trade barriers (inventors and policy makers)
3. Resulting in 10 forward looking projects

What we learned

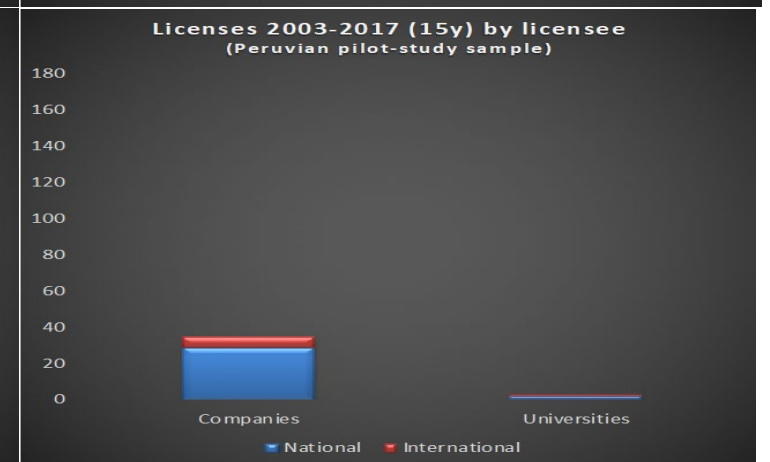
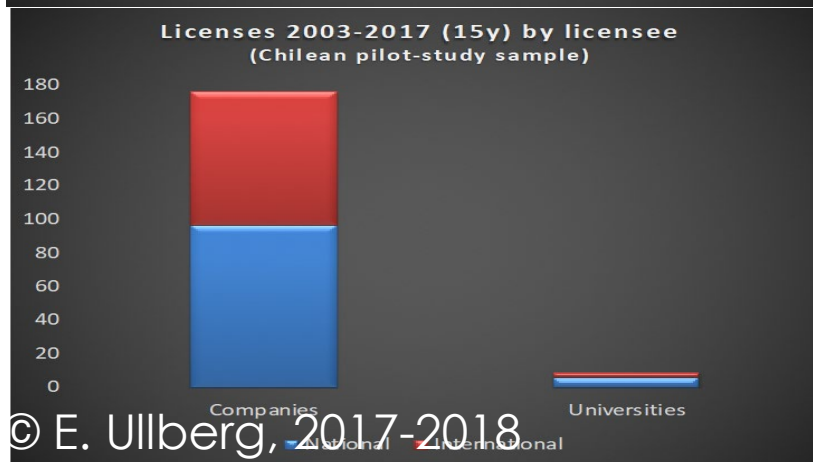
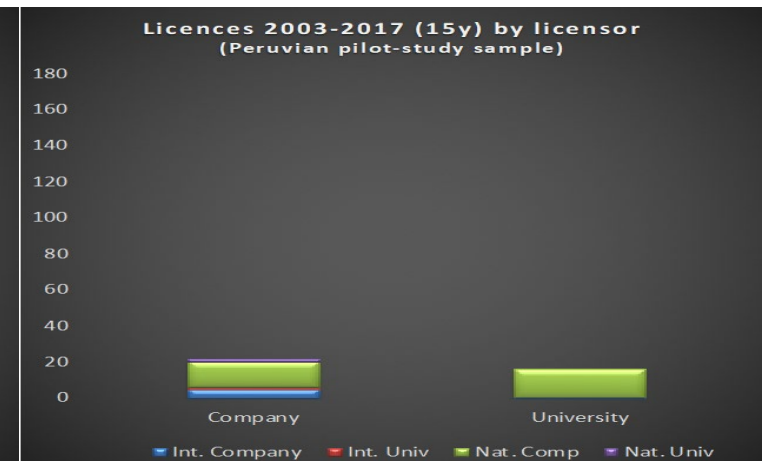
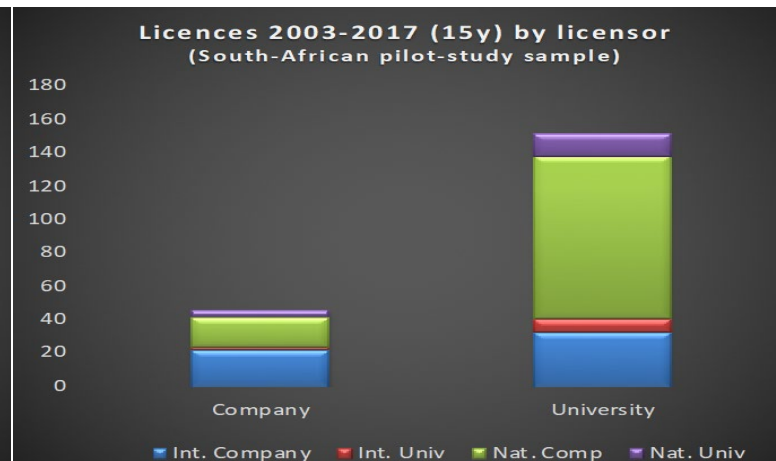
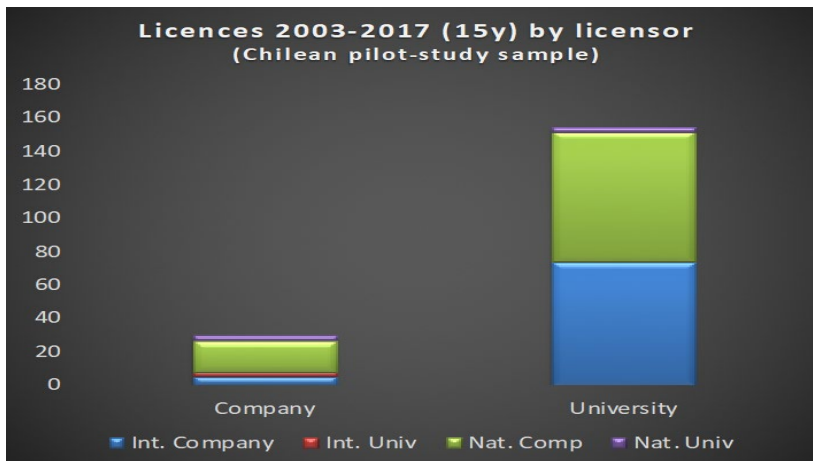
Survey summary: what people said

- ▶ 10 question on licensing?
 - ▶ Why do you license (or not)?
 - ▶ How many contracts?
 - ▶ What is your business strategy?
 - ▶ What technical fields? (special interest in food, energy, ICT)
 - ▶ What types of licenses?
 - ▶ Terms of trade (fixed fee + royalty)?
 - ▶ Dispute settlements?
 - ▶ Joint collaborations?
 - ▶ How much to you earn?
 - ▶ What are some trade barriers?

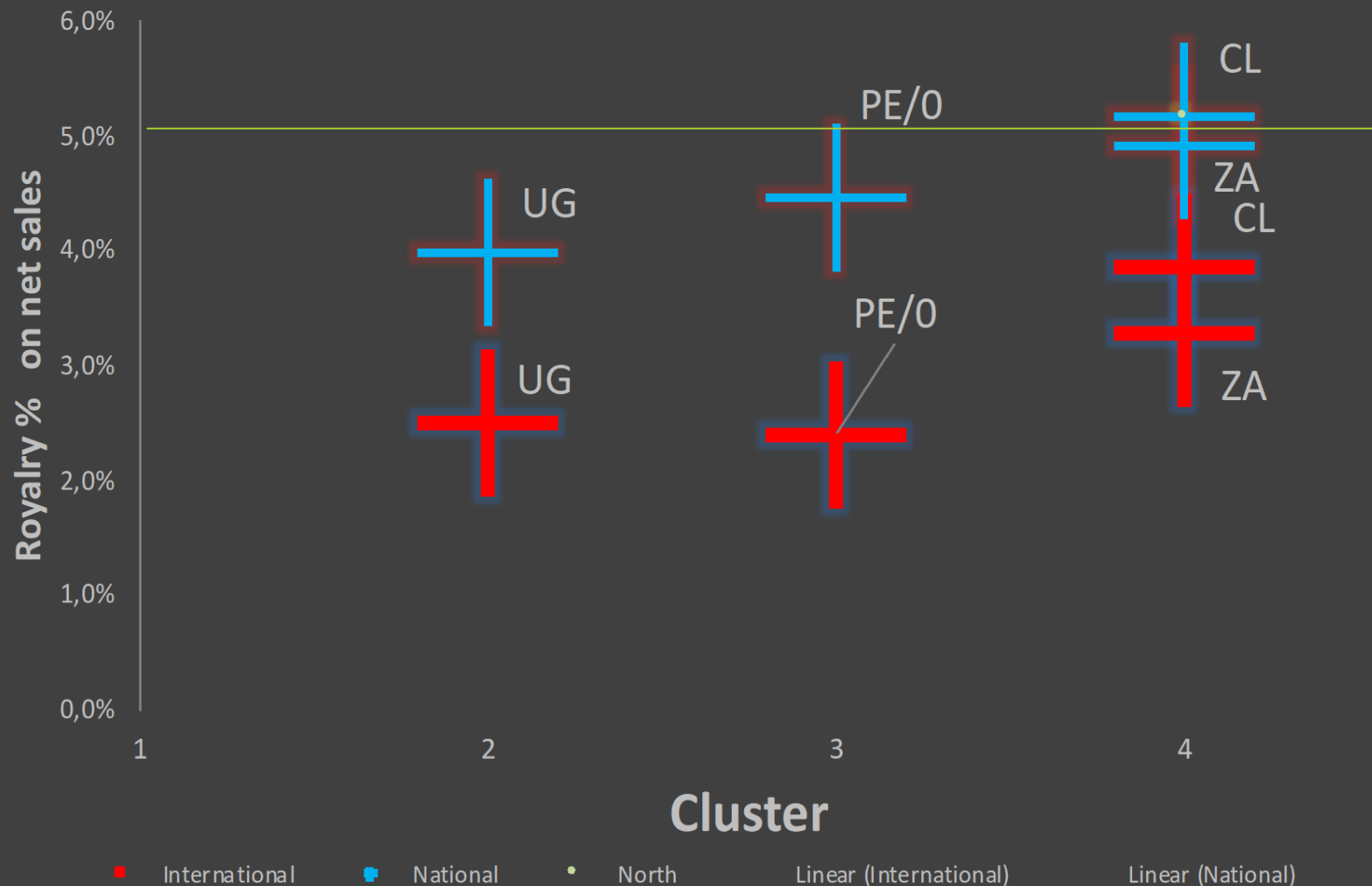
Cross-border licensing: North buying technology from South; regional markets



Sellers/licensors: A university business. Do they get paid?
 Research funding of companies? Gov. Incentives?
 Byers/Licensees: International buyers key to higher returns
 Integration of sci&tech through, in part, the patent system



Average terms of trade by country (pilot study sample)



E. Ullberg, 2018

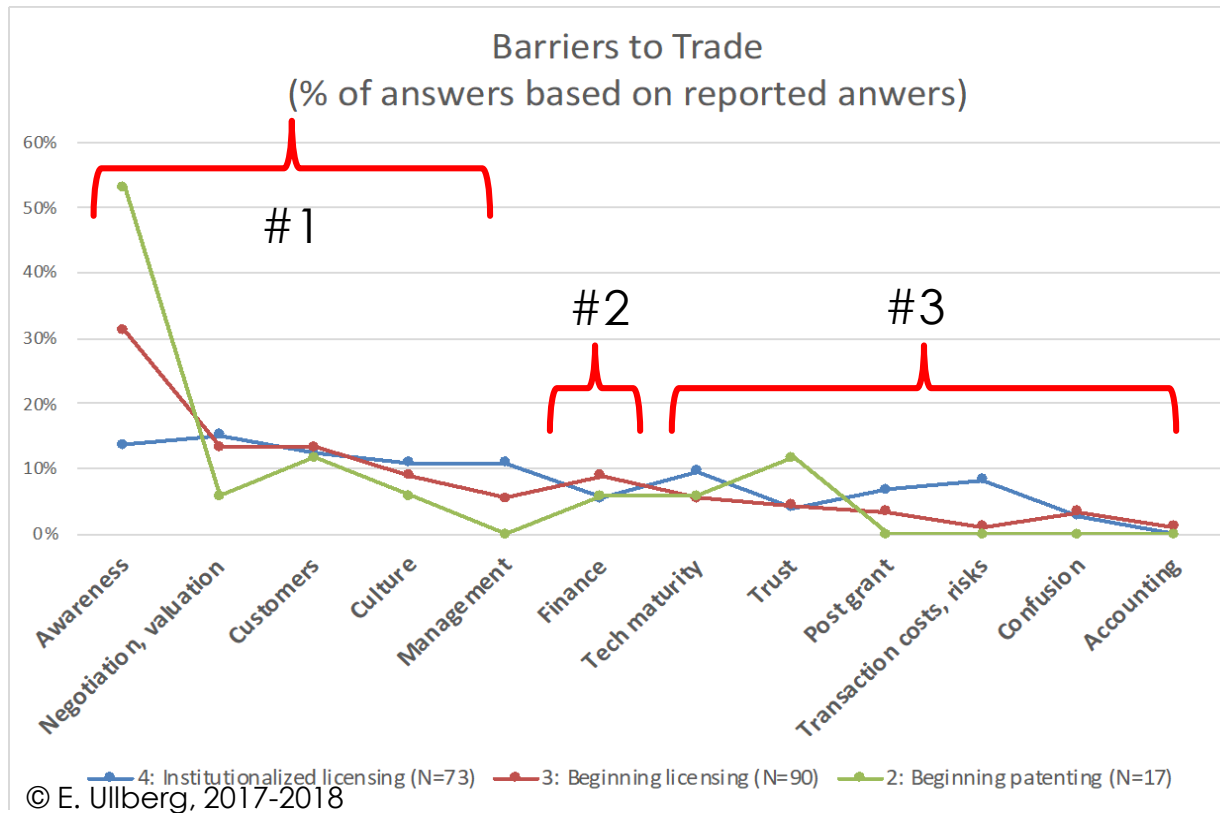
Gap: 50-100%
better paid with
Higher
patenting
based on higher
HCF
Focus and
cooperation for
smaller nations

Conclusions 1:

Similar market structure btw clusters - a mechanism issue

1. **Licensors/licensee, royalty prices, and fixed fee/royalty trade-off indicates similar functioning of national / international markets across countries (clusters)**
2. Mechanism to give incentives to reduce risk in licensing at LDC, LMIC
3. Integration of sci&tech through patent markets. Universities are the main producers (they do the research). Incentives for companies lacking? Collaboration culture?
4. Increasing Pat.apl/HCF (returns) with integration – not so in services
5. Royalty prices follows patenting maturity (and HCF)
6. International buyers key to higher returns (risk transfer)
7. Selection process only works if best technology comes to market – focus and cooperation key for smaller nations
8. Weak patents may have 5x potential (“cancellation price”)
9. Unrealistic demands (likely tax related and transfer prices)
10. Cost of capital an real issue (value of patent assets)

Barriers to trade: #1 market (micro), #2 finance, #3 economic (macro)



- ▶ 1. Awareness
 - ▶ patent writing, time, cost, enforcement, gov. incentives, national branding (reputation effect of "south" patents)
- ▶ 2. Negotiation /valuation
 - ▶ trust in value, pricing univ. or south reserach
- ▶ 3. Customers
 - ▶ Difficult to access international licensees/customers
- ▶ 4. Culture
 - ▶ freedom to research, private ownership, applied work
- ▶ 5. Management
 - ▶ education deficit, lack of manging inventors, licencing, third party
- ▶ 6. Finance
 - ▶ lack of funding, budgets, collateralization, insurance products

Conclusions 2: Mechanism focus key; A 5-10y program needed to coordinate

- ▶ **Market mechanism development** for patent licensing/transfers most important for inventors in developing countries (rules of trade)
- ▶ When markets are more developed, then general economic concerns are more important
- ▶ Economic potential is several times with respect to value (implications for "brain drain", leveraging economy)
- ▶ Projects focus therefore on developing these markets internationally, by focusing on the mechanism, to leverage the human capital formation of developing nations further
- ▶ Cannot realize this with short-term projects: A 5-10y **program needed** (Feb 2018)

10 forward-looking projects to enable Trade in Ideas - policy and practice

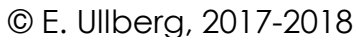
Policy

1. LDC package (47) nations – to begin licensing – get these countries up to speed
Upgrade package to MIC (and SMEs in HIC); same people, highly educated, integrate HCF into economic activity through technical ideas coordinated by (mechanism of) markets in patents
2. Statistics framework to measure trade flows of patent licensing– methods (2018)
3. Program coordination – team up with key partner (>50) and donor countries
4. Curriculum for MBA and PhD levels – train next generation
5. Pilot+/Dialogue with inventors-policy makers; integrate learning in proj
6. Tax exempt creative company – keep brains in country by increasing returns
7. Polyilateral or multilateral external focus to gather data and experimenting with trade rules; cooperation to align incentives internally to create a more competitive market in patents (integral part of gov. policy)
8. Trade rules discussions – seminars at national/regional/international levels

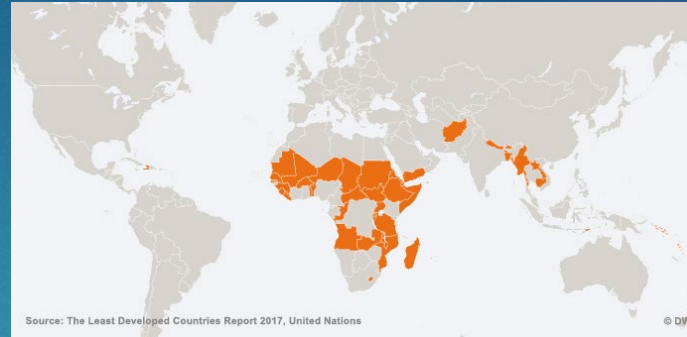
Practice

9. *Practice: Tech Hubs with all resources to license patents*
10. *Practice: Information services project with quality information on ownership, transactions, payments to reduce risk*

100



1. LDC Package



- ▶ LDC have highly educated people but lack most the mechanisms to turn that knowledge into economics (highest potential high value buyers, low cost sellers)
- ▶ Important to solve fundamental problem of access for inventors/small teams; can be upgraded to MIC
- ▶ Same structure of market LDC/MIC/HIC, same smart and creative people, but institutional changes needed, trade rules needed, tax incentives needed
- ▶ Break on "brain drain", allow "economic locomotives" with international collaboration (0.2% have come to Europe/US, what if 1%, 5% comes?)
- ▶ Project will investigate – with LDCs and any other partners MIC/HIC - everything needed to begin licensing with the world
- ▶ Should aim at all 47 countries (honoring inventors at a global level)
- ▶ Regional cooperations could leverage resources, funds by extant economic cooperations: east africa, west africa, south-africa, north africa (similar approach for pacific alliancecentral american "door" alliance, ASEAN+, others.

2. Statistics Framework to measure flows in patent licensing/transfers, other IP

- ▶ Trade flows in patent licensing and other IP little understood
- ▶ Who does the research, develops the technology, license and use?
- ▶ Trade statistics for patent licensing as a metric to follow up policy initiatives
- ▶ Principles (so far):
 - ▶ All trade is first of all in ideas – then implemented in prod/services
 - ▶ Licensing in own rights focus (not embedded in prod/services, which comes later)
 - ▶ The statistical unit is a company/university/individual (firm entity)
- ▶ Input from: national statistics bureau, global licensing firms, customs expert
- ▶ WTO experts: Andreas Maurer, Joscelyn Mageleine, Tony Taubman, Jayashree Watal (workshop 1)
- ▶ Framework level funded by Min. of Foreign Affairs of Sweden
- ▶ Andreas Maurer will present an update of the project

3. Program coordination

1. Keeping focus by coordinating projects – a program is needed
2. Themes will coordinate effort on what matters for trade in ideas
3. Team up with key local partners (>50) and donor countries
4. Feed back of this knowledge through seminars at WTO, UN, other
5. Themes still under formulation: mechanisms, data statistics, education (please suggest!)

4. Curriculum for MBA/Master and PhD

- ▶ Teaching the next generation business and licensing.
- ▶ Lack of awareness in patenting, licensing, negotiations, data collection, analysis of trade flows and HCF in trade in ideas
- ▶ Cooperation between nations, universities, business schools
- ▶ In initial collaboration with WTO Chair Network
- ▶ Initial interest from countries including: Chile, Kenya, Peru, Uganda, El Salvador, Oman, others

5. Pilot+ expanding cooperation

1. Expanding Pilot-study to more nations: deepening data gathering
2. Integrate the trade in ideas concept into current economic policy
 1. Where is the technology in each gov. Program?
 2. What technology do we have in our country?
3. Expand dialogue with inventors-policy makers in periodic seminar/workshop format
4. PhD level local resources
5. Regional economic cooperation key
6. Building knowledge for discussions on trade rules

6. New creative company entity

- ▶ Tax exempt creative company – keep brains in country by increasing returns on inventions
- ▶ A new, special entity is proposed uniquely created for inventing, patenting, and up to prototyping
- ▶ No tax on profits (tax on innovations)
- ▶ Will shift incentives of investments to "more of the new" inventions rather than "more of the same" technology in innovations
- ▶ This allows inventors to make more rational decisions on risk (average risk)
- ▶ A way to encourage risk taking

7. Experiment with trade rules: A consultative process under rule of law

- ▶ Polylateral or multilateral external focus to gather data and experimenting with trade rules for cooperation to align incentives internally to create a more competitive market in patents (integral part of gov. policy)
- ▶ In 1215, land owners, who owned the productive asset of the time, negotiated private property right in exchange paying taxes to the king – no-one was any longer above the law...
- ▶ Today, the economically most valuable assets are intangible assets, and a periodic consultation between the inventors and holders of patents and the state is proposed
- ▶ Such a process would protect the inventors assets, give freedom to invent, start companies, license to the world, in exchange for other technology
- ▶ With rules that give the incentive for a behavior of investing in new licensable technology, the exchange mechanism will bring funds and/or more technology to the developing nations
- ▶ These inventors are the “locomotive” of the digital knowledge economy

8. Transforming the WTO to create a global market in patents

- ▶ The principle in Uruguay round of "minimum standards" resulted in "maximum standards"
- ▶ We propose as step-by-step approach, where countries, in a poly-lateral or multi-lateral setting experiment with different trade rules on patent licensing
- ▶ The rules that give the incentive to a behavior among inventors, investors and innovators that work, i.e. deliver mutual, sustainable gains, will be adopted in treaties
- ▶ This institutional learning process would have as a goal to create a level playing field for all inventors.

9.Tech-Hub with 10. information services

9. One-stop shop "Tech-Hub" with platform on information on all inventors, inventions

Virtual initially, then physical with pro-bono services

10. Test of information services (proof of concept tests investigated with partners)

Cooperation with global partner

Cooperation with patent offices

Funding the next step

- ▶ The Foreign Office of the Kingdom of Sweden has funded the pilot-study and the statistics framework study. The funding ends Dec 2018
- ▶ Interest in the follow-on project must therefore be directed to potential donor countries
- ▶ I would be happy to help coordinate such efforts
- ▶ Investments in project range from: €250k for the curriculum to €5m (for the 47 LDC countries package)

Next steps summary

Pilot study



1. Chile (INAPI)
2. Azerbaijan (Pat.Off.)
3. Kenya (KIPI)
4. South Africa (NIMPO)
5. Peru (INDECOPI)
6. Uganda (Min. Econ)
7. El Salvador (Min. Econ)

Projects to inform (build knowledge)

1. LDC Package
2. Statistics framework
3. Program coordination
4. Curriculum
5. Pilot+
6. Creative company
7. Experimenting
8. Trade rules
9. Tech-hub
10. Test of digital Information services



Policy discussion

1. National level
2. International level (poly-, mulilateral)
3. Economically efficient trade rules for a level playing field for developing nations



Thank you!

- * Report will be on WTO working paper series

- * PPT, recording, intro available for event

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