

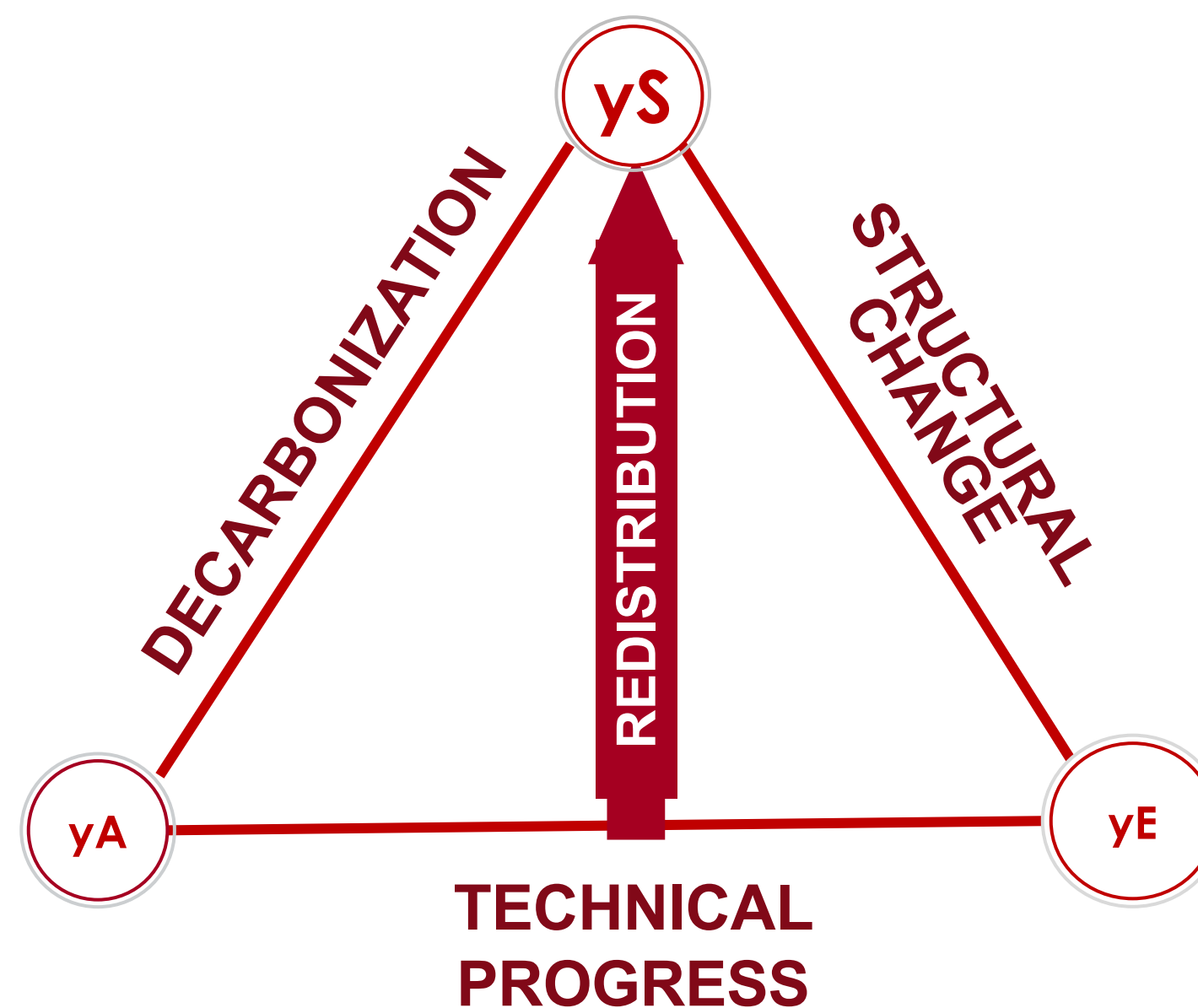
Discussion of
“Sustainable Development and the Political Economy of Economic Development. A three-gap model plus some simulations.”
By Gabriel Porcile, J.E. Alatorre, M. Cherkasky, C. Gramkow and J. Romero

Tommaso Ciarli, UNU-MERIT, United Nations University

A great paper

Minimum target for growth with equality, 4 %

Growth limit consistent with Paris Agreement, 1 %



Growth limit consistent with external equilibrium, 2 %

Three questions

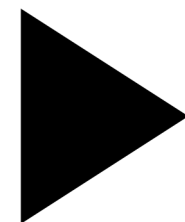
1. How do you create the capabilities needed to crawl the product space towards higher value added export?
2. How do you balance innovation and inclusion?
3. How do we go green without worsening the balance of payment?

Specialisation is not fate (or is it?)

Mendeley



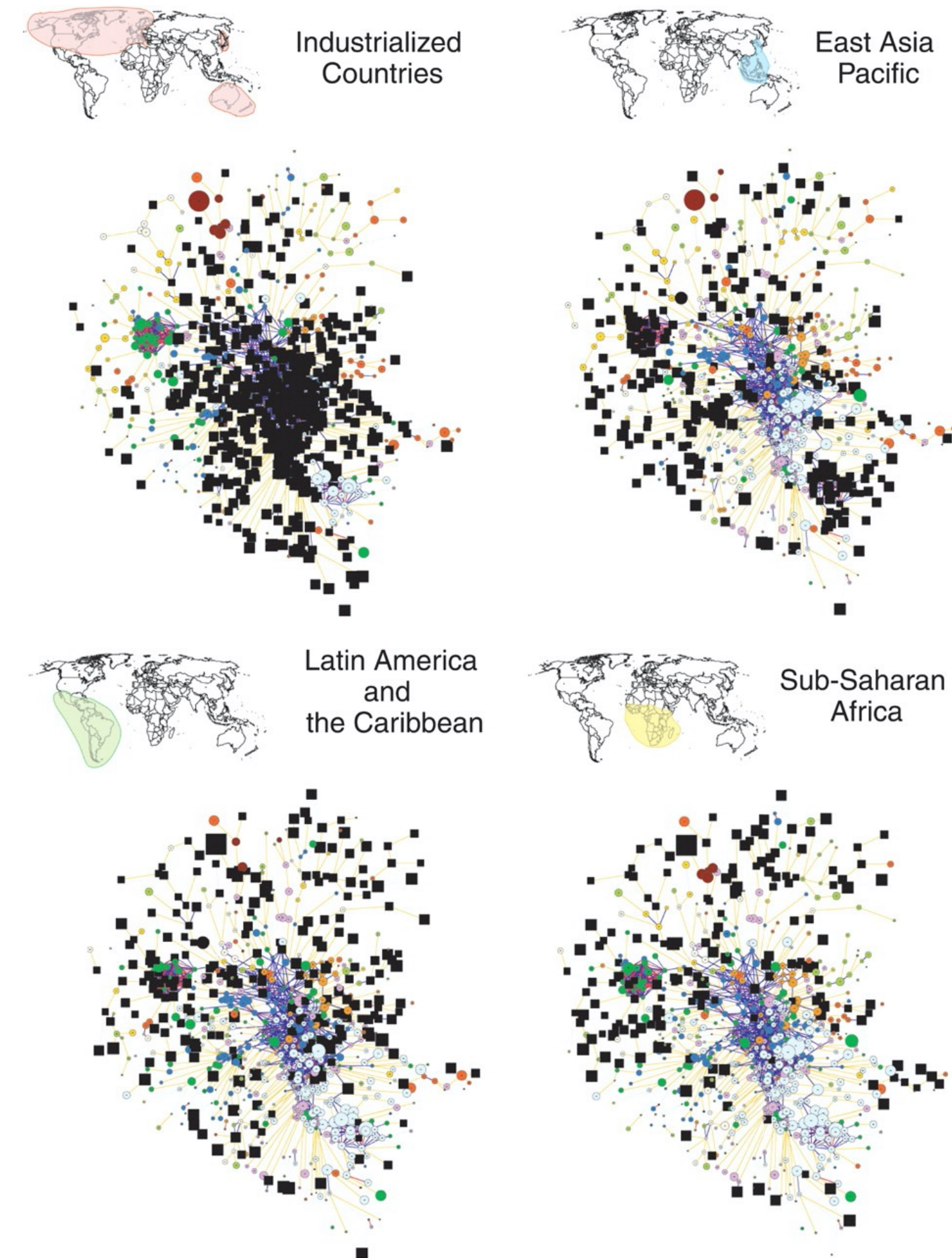
Lonely Planet



Alamy

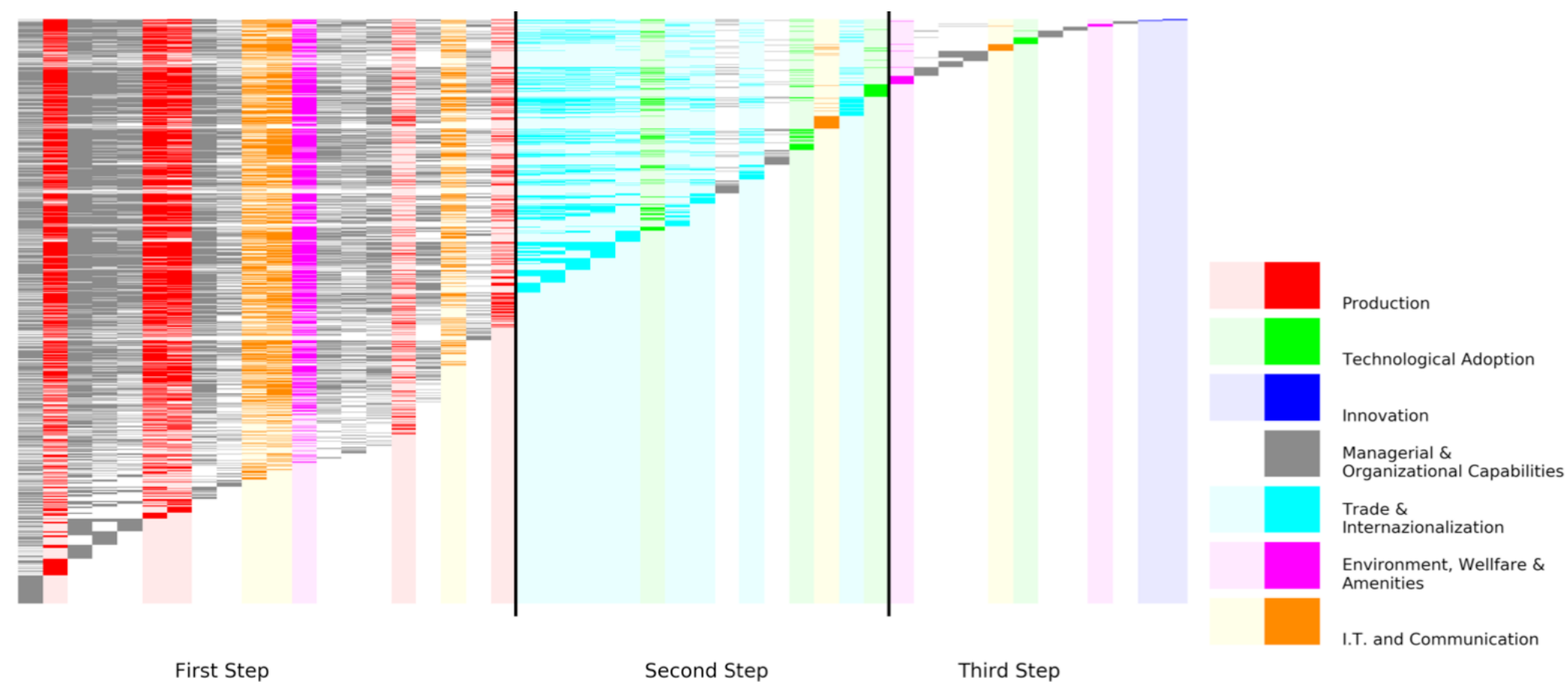
- Let us imagine for one second, for the sake of argument, that Carlos Gardel was born in Tacuarembó, UY
- How do you build the capabilities that allow to build a high value added creative industry?

No, specialisation is not fate

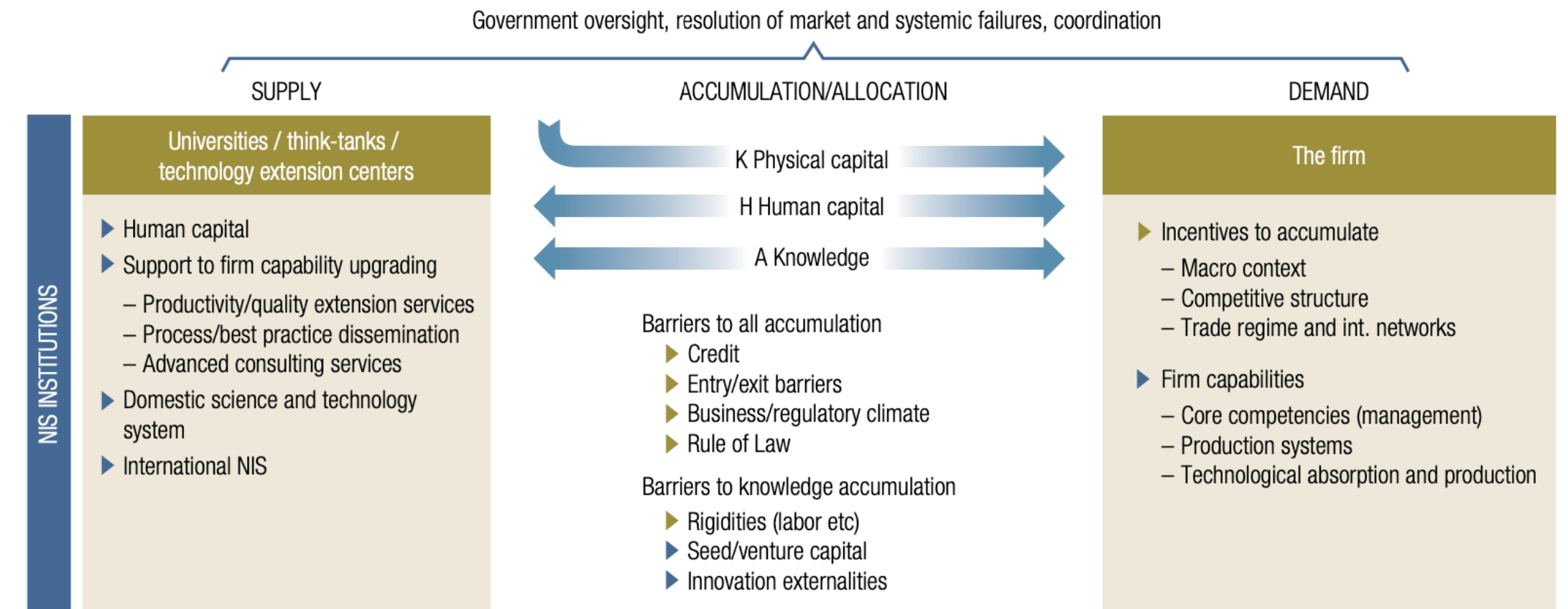


But how can countries navigate the product space?

A long tortuous route to building capabilities, at firm level



Matrix of activities by Indian firms for year 2012. 15797 firms active in that year are represented by rows and the 47 firms' activities are represented by columns. Columns and rows are reordered to highlight nestedness.
Coad et al, 2021



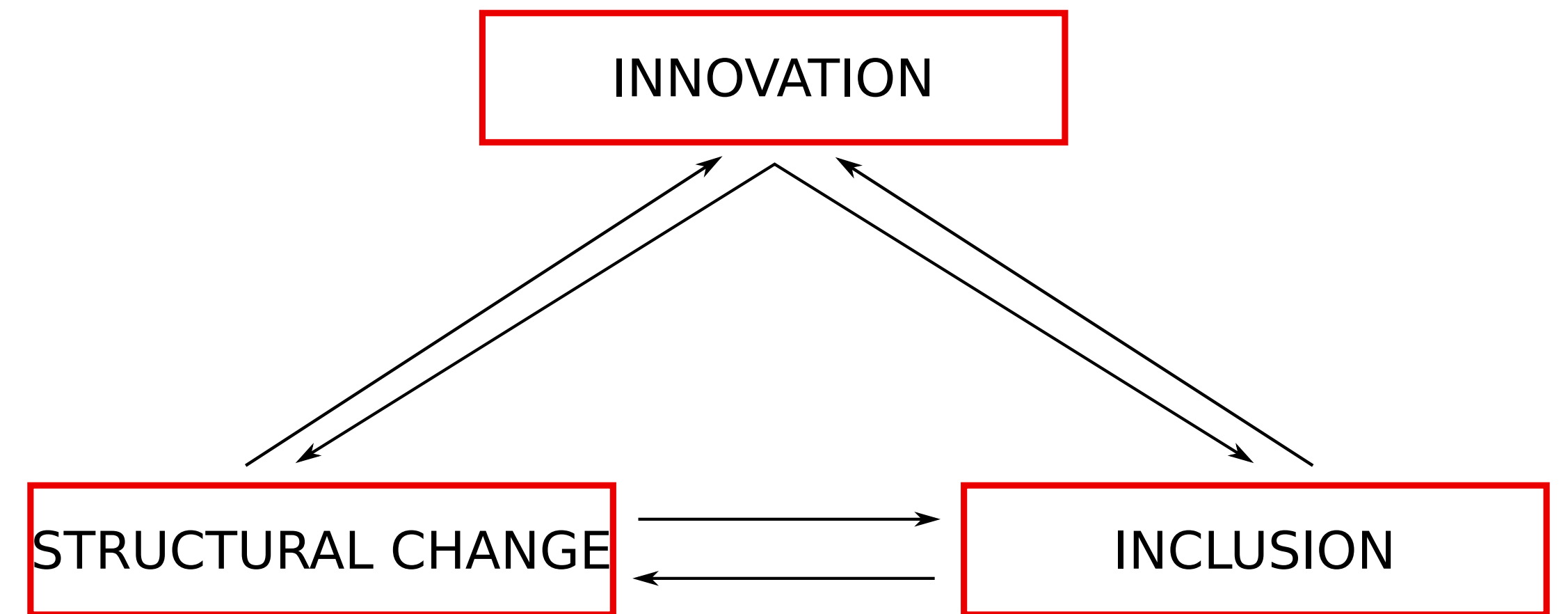
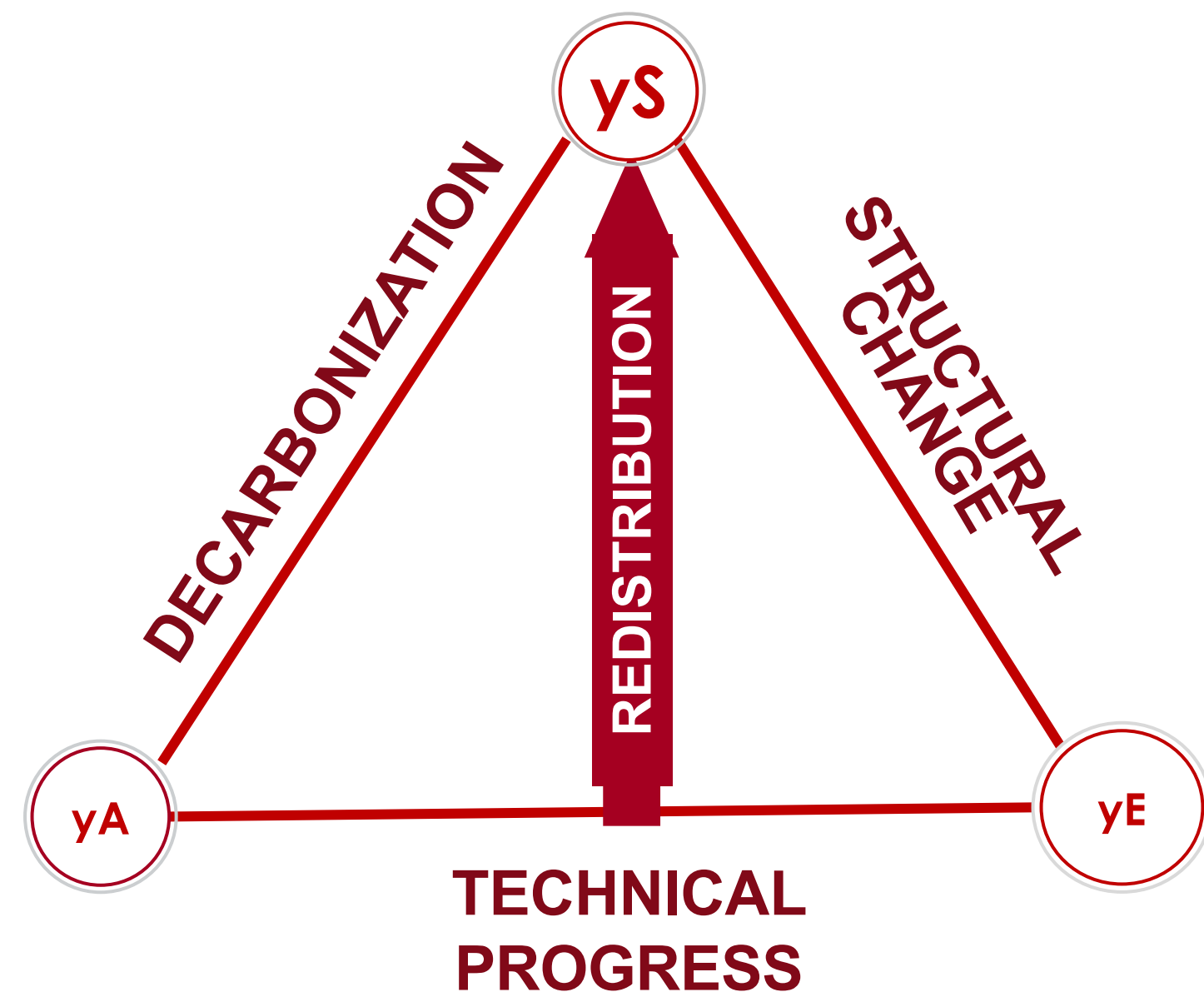
Maloney, 2017

- We have learned a lot from the Asian model, and yet we cannot replicate it.
- Active, targeted industrial policy, directing technical change
- Active learning along the product life cycle
 - Skills to absorb workers
- The systemic view: innovation systems

Innovation generates inequality: inclusive innovation and institutions

1. Many of the properties of innovation are also related to inequalities
2. Technical change and economic growth → structural changes → inequalities within country
⇒ institutions to balance the trade-off between innovation-led structural change and inequality (leading to higher economic growth) (Ciarli et al, 2019)
3. Before redistribution. Who makes decisions about what STI to prioritise is likely to benefit most (and suffer least the negative consequences) (Ciarli, ed, 2022)
4. Inclusion of 'innovators' with diverse and complementary capabilities and priorities for inclusive structural change (Bell et al, 2016; Saha and Ciarli, 2018)

Inclusive structural change



Ciarli et al, 2021

Green transition, back to capabilities

- If the suppliers of renewable energy capital at the technological frontier are in the centre, relaxing the BOP constraint helps increase the share of renewable sources in the energy mix.
- However, in the BAU scenario the positive effect of access to foreign currency is limited by the low level of investments (and hence demand for capital goods), thereby hampering the energy transition
- A policy aimed at improving the technological capabilities of domestic producers of capital goods for renewable energy will have a larger impact on both the investment share and on the renewable energy share
- Domestic capabilities are indeed the key for a successful transition towards a sustainable economy – and may not increase inequality

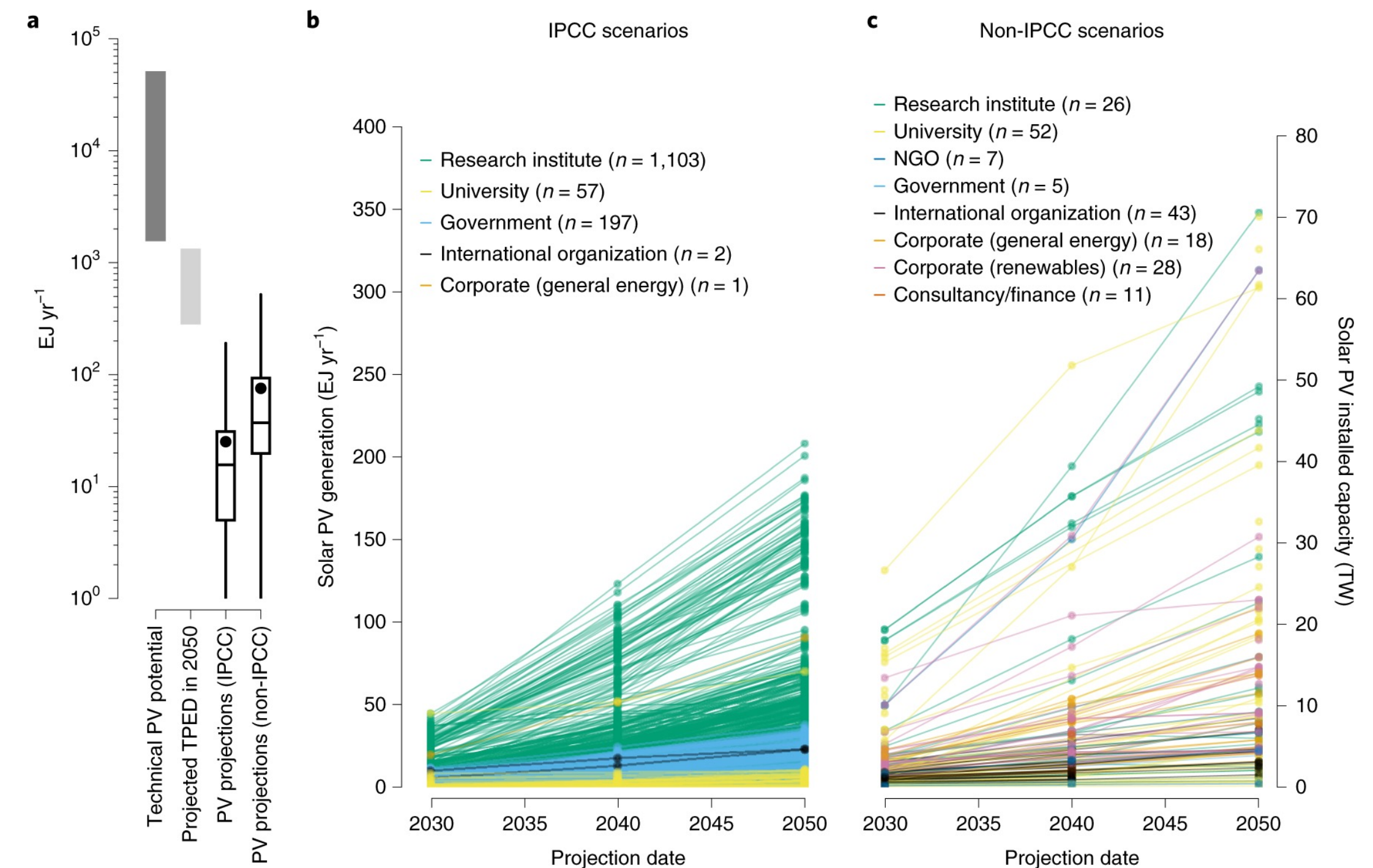
ECLAC, 2020; Botte et al, 2021

A Kind of Magic?



A final note

- We know technical change is uncertain
- Important to include some of this complexity/uncertainty



Jaxa-Rozen and Trutnevyte (2021)

Keep it simple! Or not?

- Keep it simple! The paper delivers very interesting results, with a simple and “intuitive” model – and a wonderful narrative
- Keep it complex! I’d love to see some more happening down in the ‘real’ economy, where there are firms and workers

Many thanks

Tommaso Ciarli
ciarli@merit.unu.edu



References

- Bell, A., Chetty, R., Jaravel, X., Petkova, N., Van Reenen, J., 2016. The Lifecycle of Inventors. SSRN Electron. J. doi:10.2139/ssrn.2838018
- Botte, F., Ciarli, T., Foxon, T., Jackson, A., Jackson, T., Valente, M., 2021. Modelling Transition Risk: Towards an agent-based, stock-flow consistent framework. London.
- Ciarli, T. (Ed.), 2022. Changing Directions: Steering science, technology and innovation towards the Sustainable Development Goals. STRINGS, SPRU, University of Sussex, Brighton, UK. doi:10.20919/FSOF1258
- Ciarli, T., Lorentz, A., Valente, M., Savona, M., 2019. Structural changes and growth regimes. *J. Evol. Econ.* 29, 119–176. doi:10.1007/s00191-018-0574-4
- Ciarli, T., Savona, M., Thorpe, J., 2021. Innovation for Inclusive Structural Change, in: Lee, J.-D., Lee, K., Radošević, S., Meissner, D., Vonortas, N.S. (Eds.), *The Challenges of Technology and Economic Catch-Up in Emerging Economies*. Oxford University Press.
- Coad, Alex & Mathew, Nanditha & Pugliese, Emanuele, 2021. "Positioning firms along the capabilities ladder," MERIT Working Papers 2021-031, United Nations University - Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT).
- ECLAC, 2020, Building a New Future Transformative Recovery with Equality and Sustainability, Thirty-eighth session of ECLAC, Santiago
- Hidalgo, C.A., Klinger, B., Barabasi, A.-L., Hausmann, R., 2007. The Product Space Conditions the Development of Nations. *Science* (80-.). 317, 482–488.
- Jaxa-Rozen, M., Trutnevyte, E., 2021. Sources of uncertainty in long-term global scenarios of solar photovoltaic technology. *Nat. Clim. Chang.* 11, 266–273. doi:10.1038/s41558-021-00998-8
- Maloney, W.F., 2017. Revisiting the National Innovation System in Developing Countries, Revisiting the National Innovation System in Developing Countries. World Bank, Washington, DC. doi:10.1596/1813-9450-8219
- Saha, A., Ciarli, T., 2018. Innovation, Structural Change, and Inclusion. A Cross Country PVAR Analysis (No. 2018–1), SWPS, SPRU Working Paper Series 2018-1. SPRU - Science and Technology Policy Research, University of Sussex, Brighton, UK.