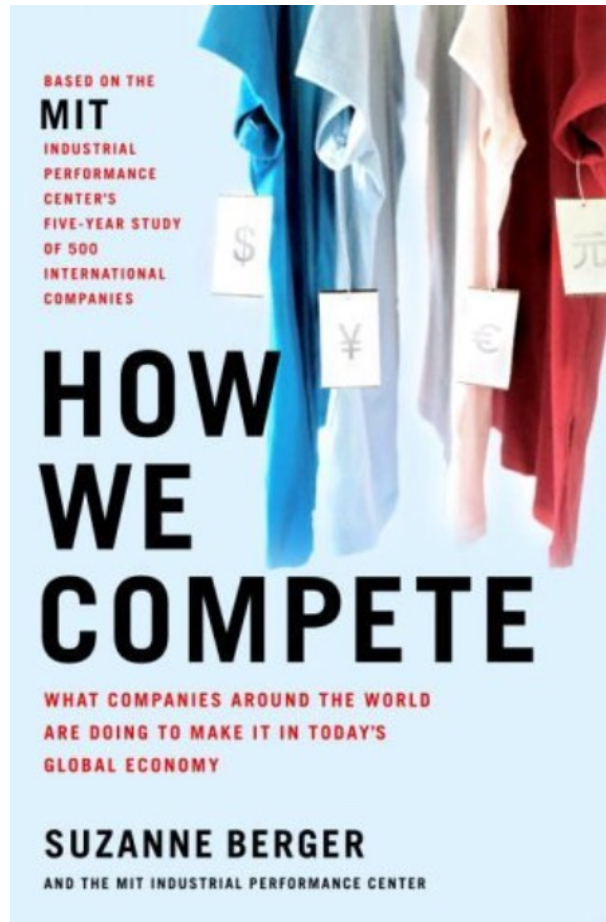


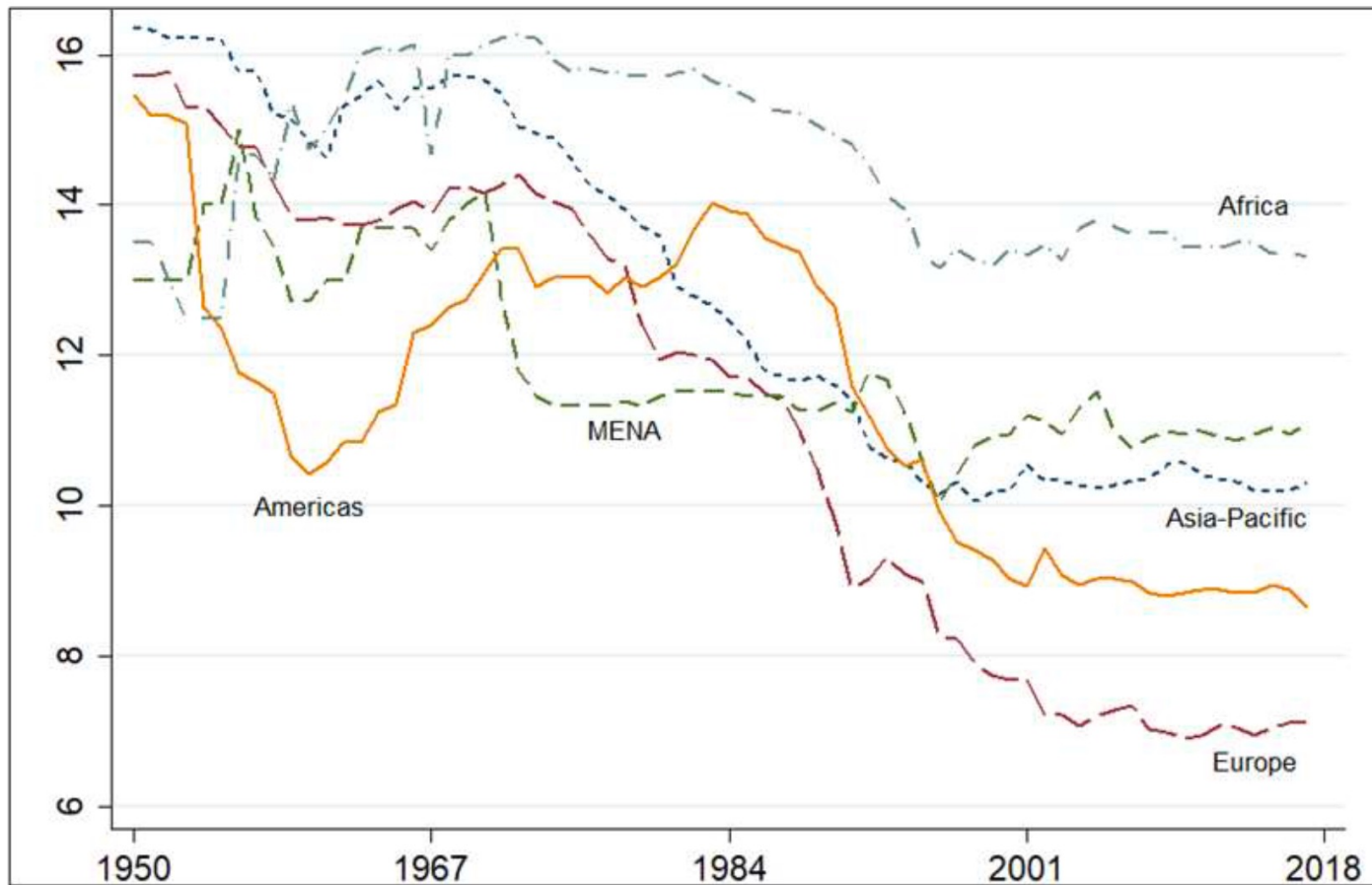
# Global Value Chains Transformation and its Implications for Businesses in the Transition Towards Circular Economy

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Australian National University  
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4 July 2023

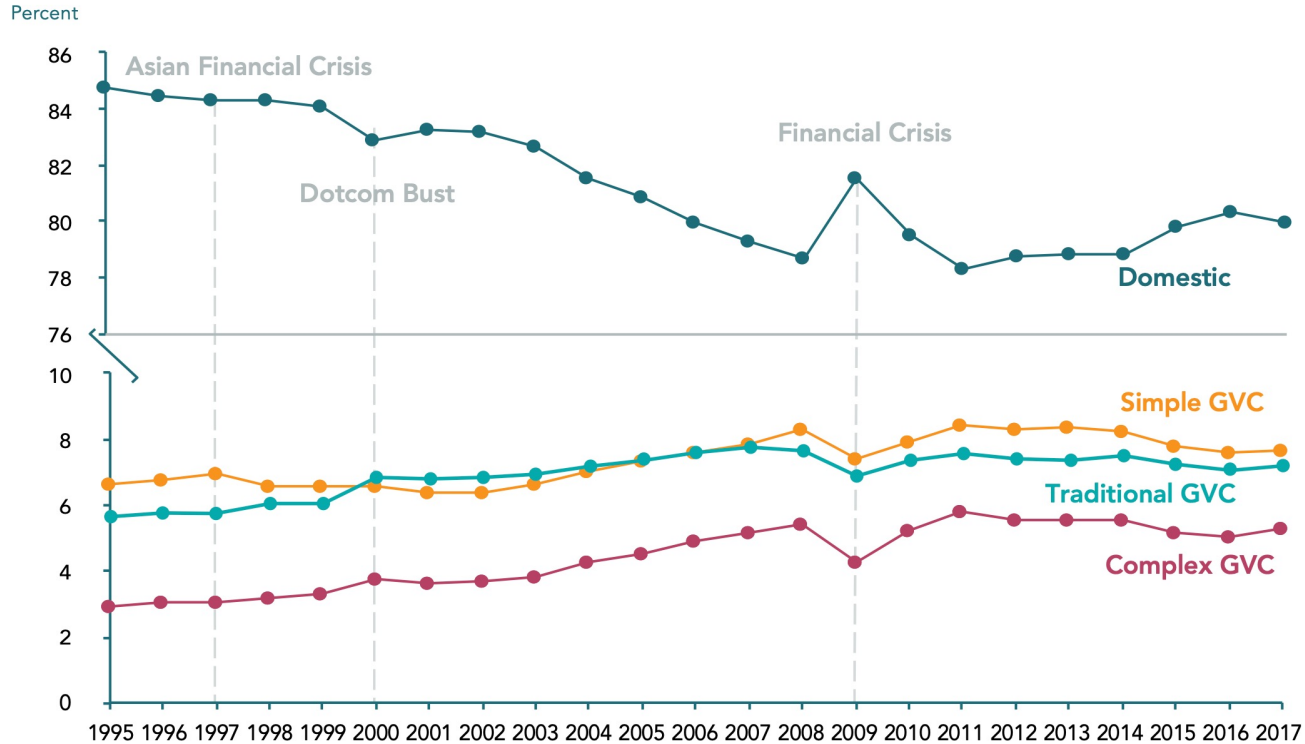


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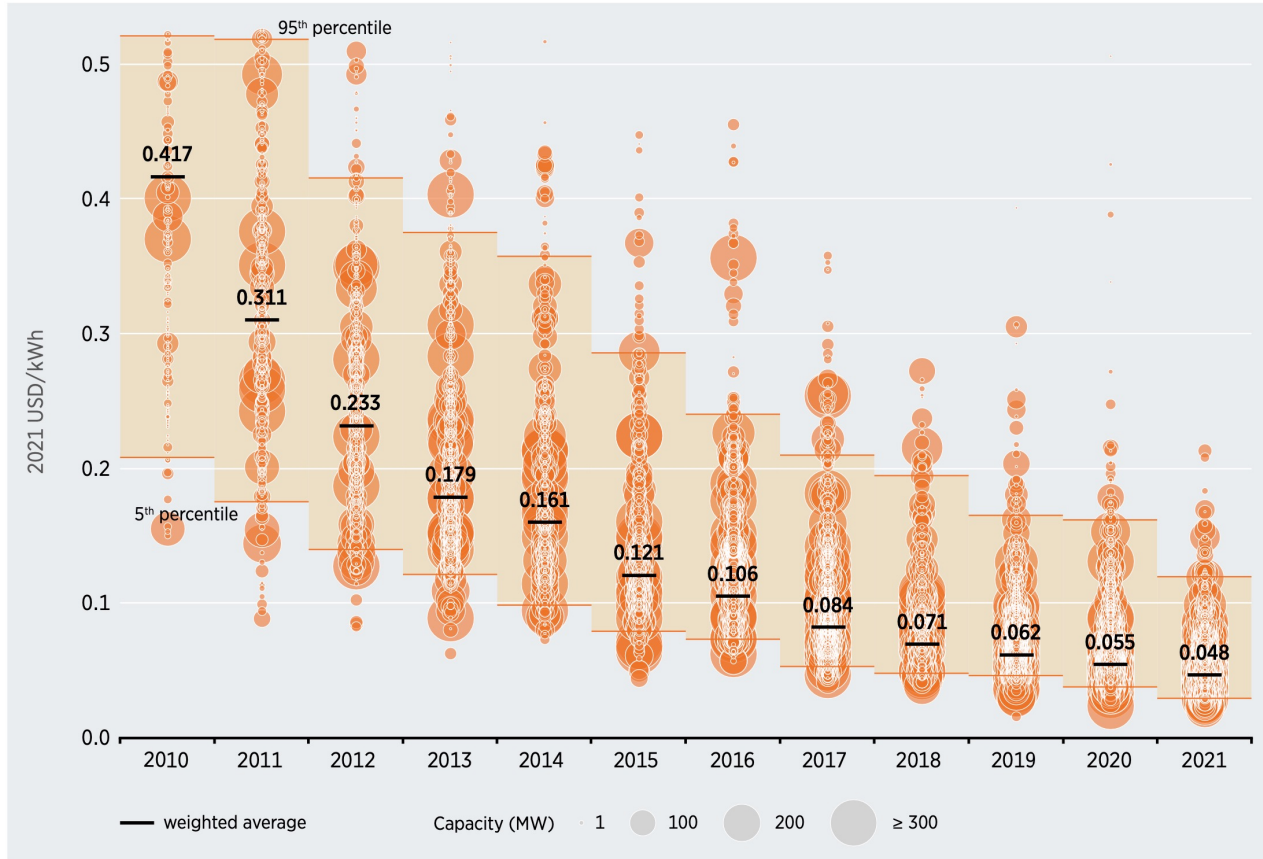
# GVCs as a Share of Global GDP, 1995-2017



Source: 1995-2009 are based on the University of International Business and Economics (UIBE) GVC indexes derived from the 2016 World Input-Output Table, and 2010-2017 are based on the UIBE GVC indexes derived from the Asian Development Bank (ADB) 2018 ICIO tables.



# Global utility-scale solar PV project LCOE and range, 2010-2021



# Has Globalization Passed Its Peak?

*Rawi Abdelal and Adam Segal*

## THE END OF THE WORLD AS WE KNOW IT

ONCE UPON a time, not very long ago, economic globalization—the free worldwide flow of capital, goods, and labor—looked both inevitable and inexorable. Most governments seemed to embrace the very real benefits being offered by rapid technological change and international markets and sought to liberalize their economies in order to maximize these gains. Policymakers worked to prepare their societies for a world of ever-increasing interconnectedness and relentless competition, and the debate—at least within the United States—started to revolve around how to cope with the effects of this new “flat” earth.

Then came the financial crises of the 1990s and the early years of this century in Asia, Russia, and Latin America. The U.S. current account deficit—the difference, broadly speaking, between what U.S. residents spend abroad and what they sell abroad—shot upward. The U.S. dollar fell in value and seemed headed for an even more precipitous drop. As outsourcing accelerated, the American middle class came to feel increasingly insecure. Historians such as Niall Ferguson and Harold James pointed out that the previous era of globalization (which ran from about 1870 to 1914) had once seemed as unstoppable as the current one but had ended disastrously; so, too, they warned, could today's.

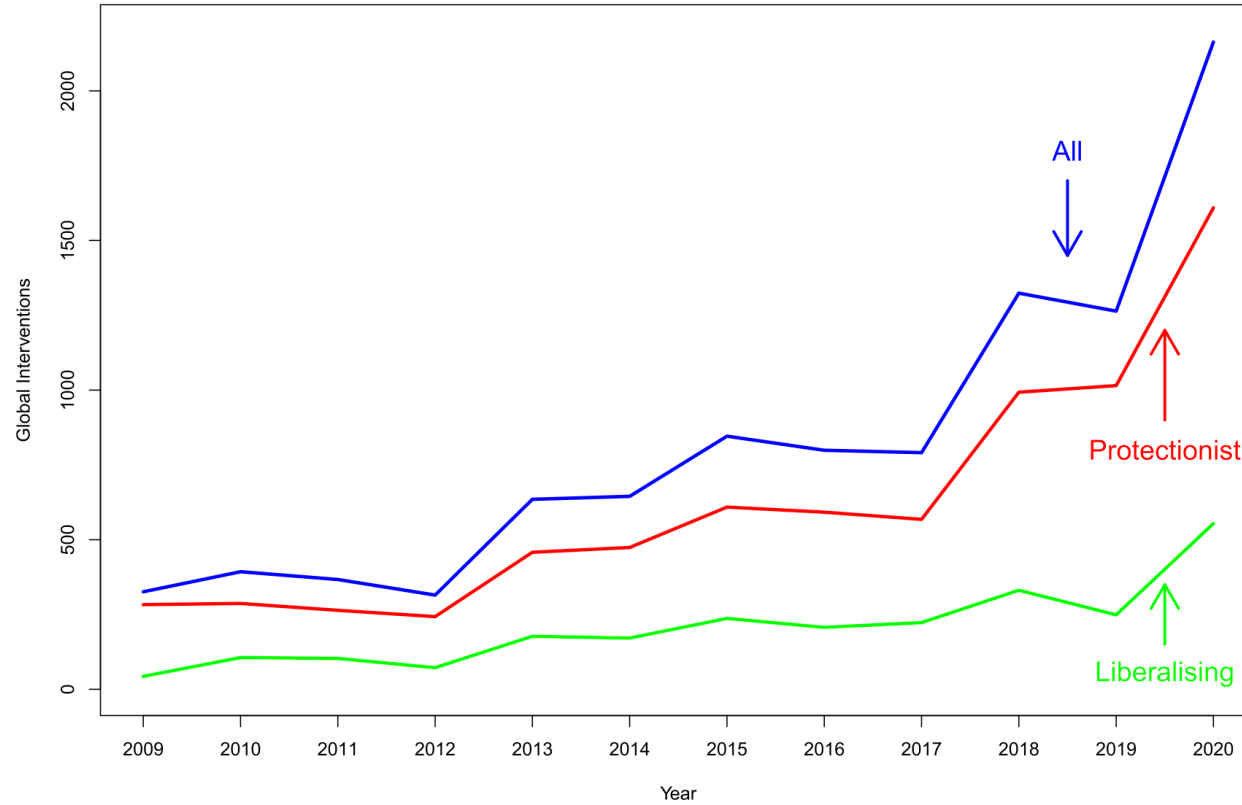
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RAWI ABDELAL is an Associate Professor at Harvard Business School and the author of the forthcoming *Capital Rules: The Construction of Global Finance*. ADAM SEGAL is Maurice R. Greenberg Senior Fellow for China Studies at the Council on Foreign Relations and the author of *Digital Dragon: High Technology Enterprises in China*.

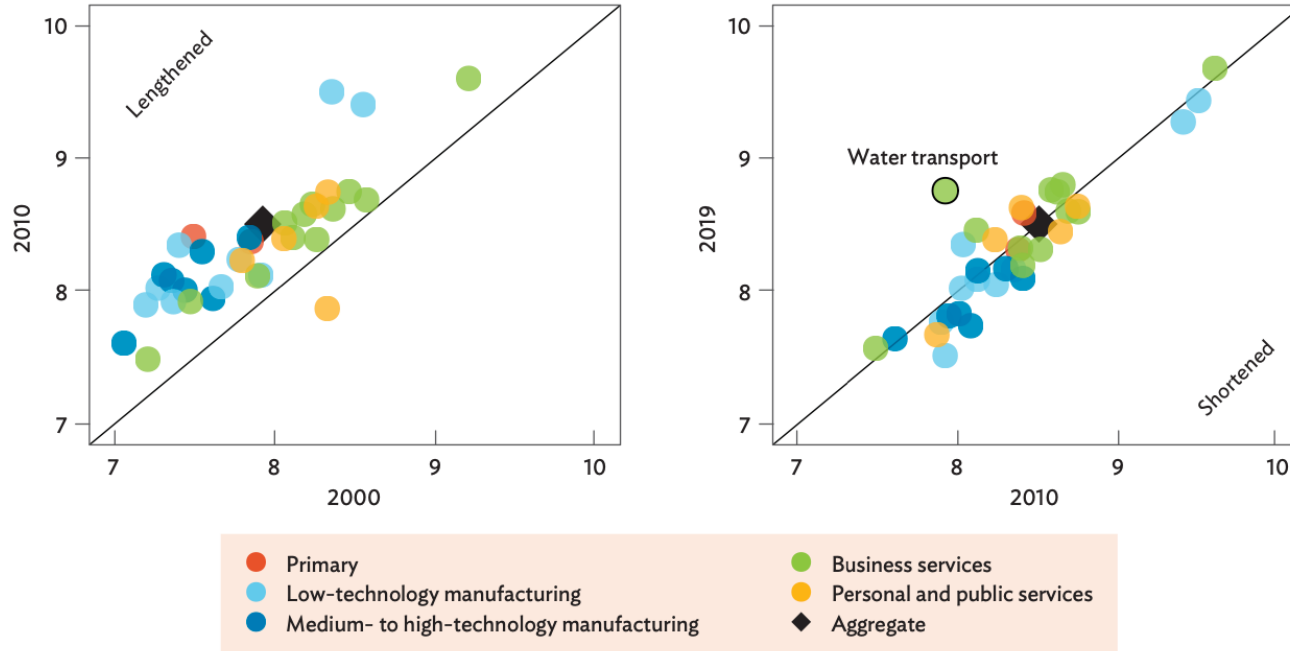
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New Interventions by Year



**Figure 1.3: Global Value Chain Production Lengths by Sector, World, 2000, 2010, 2019**

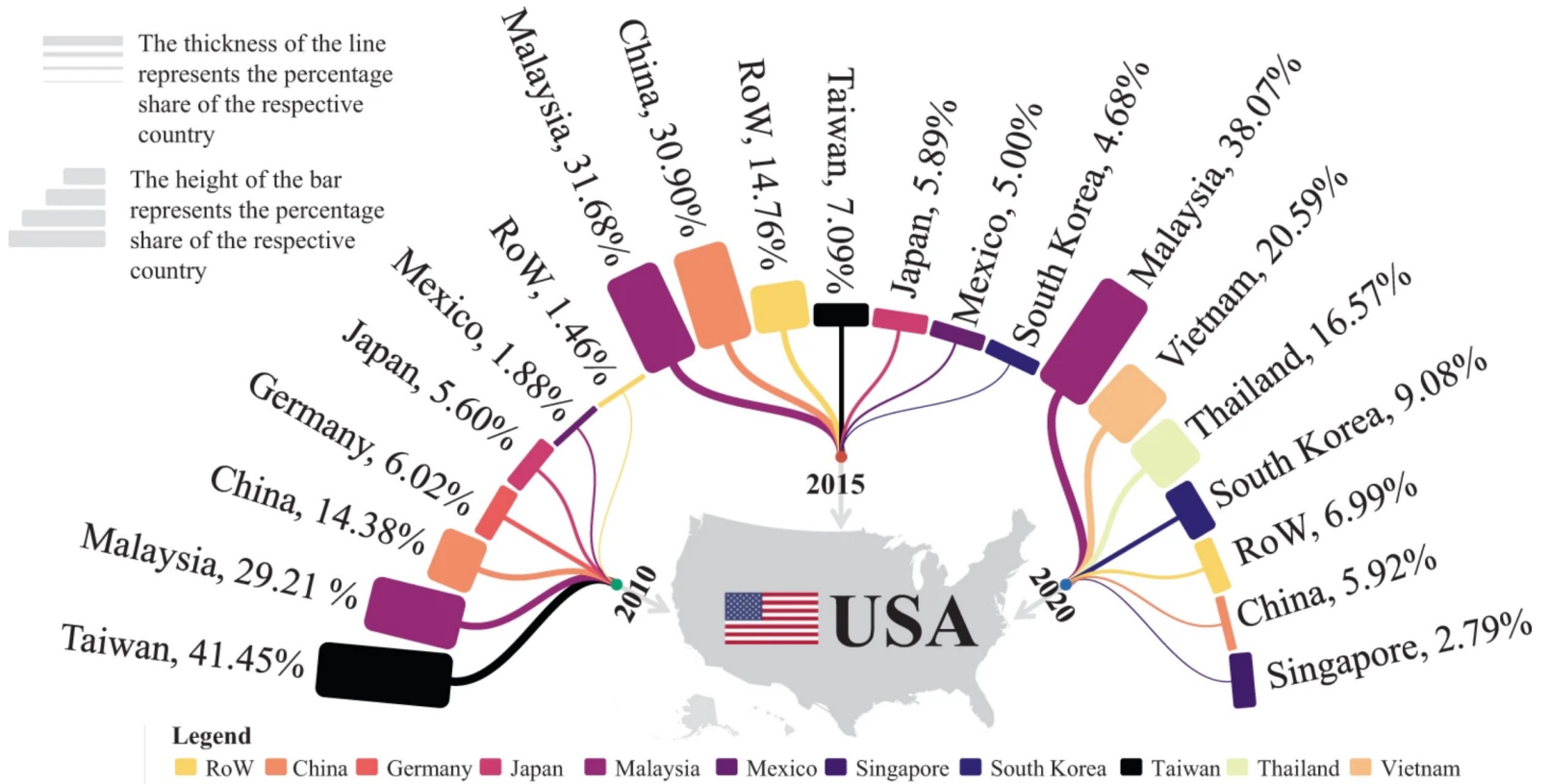


Notes: Global value chain production lengths are the sum of backward and forward lengths, computed following the methodology of Z. Wang, S. Wei, X. Yu, and K. Zhu. 2017. *Characterizing Global Value Chains: Production Length and Upstreamness*. NBER Working Paper. No. 23261. Cambridge, MA: National Bureau of Economic Research.

Sources: Asian Development Bank. Multiregional Input-Output Database. <https://mrio.adbx.online> (accessed 31 July 2021); Asian Development Bank estimates.

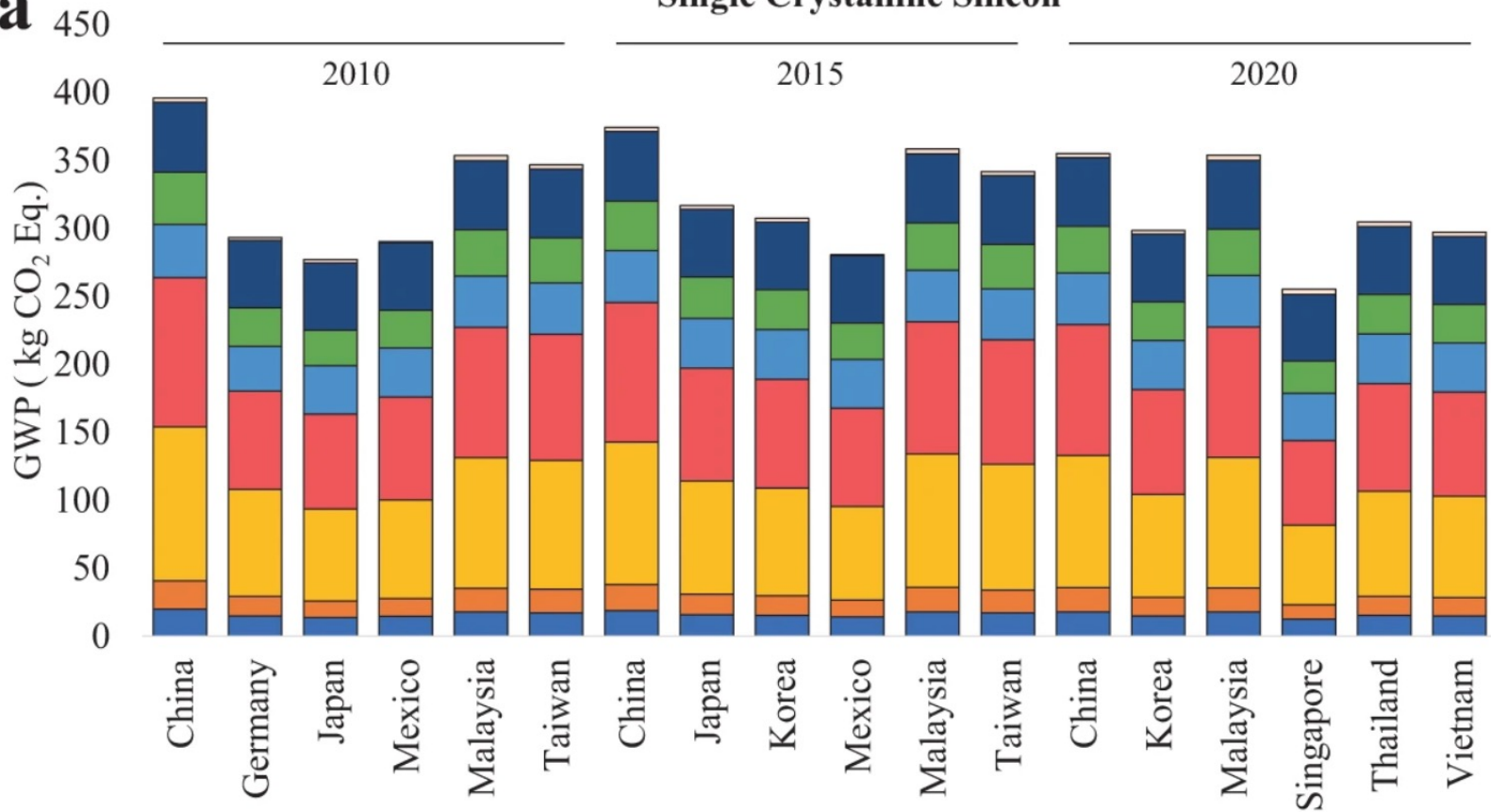




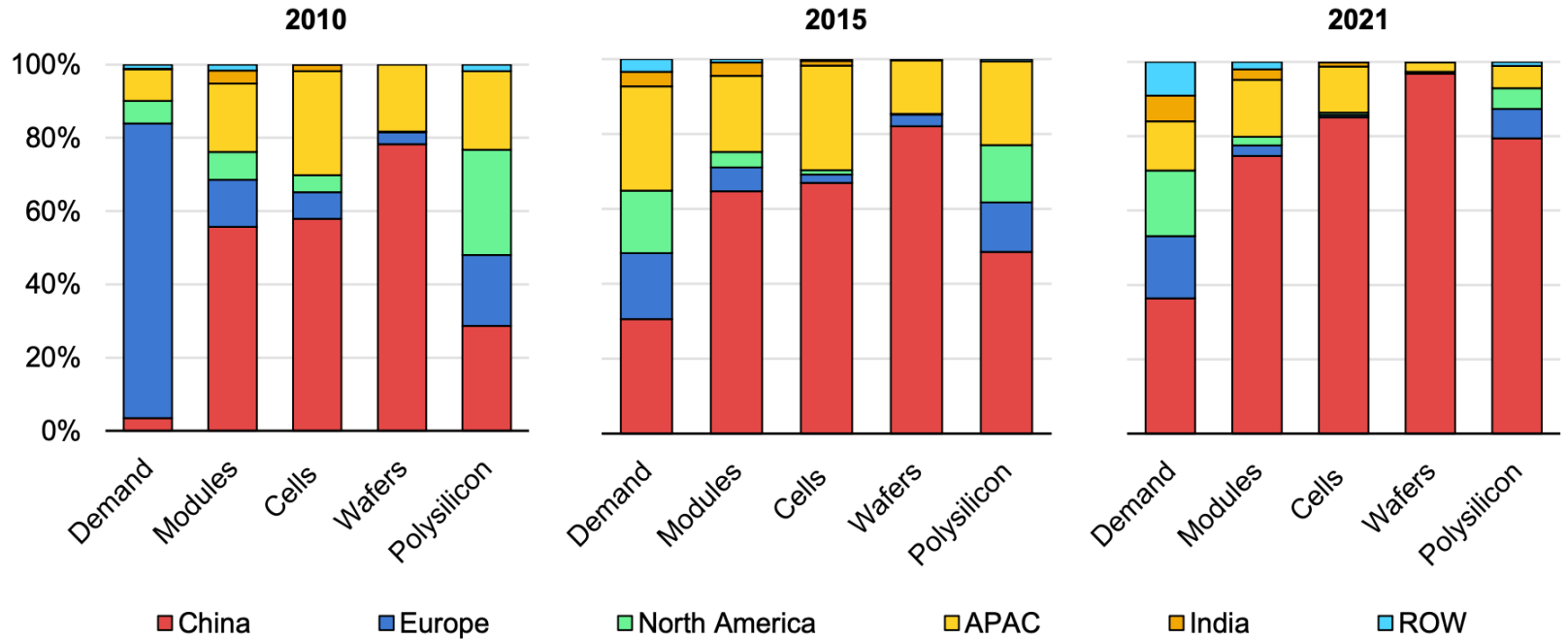


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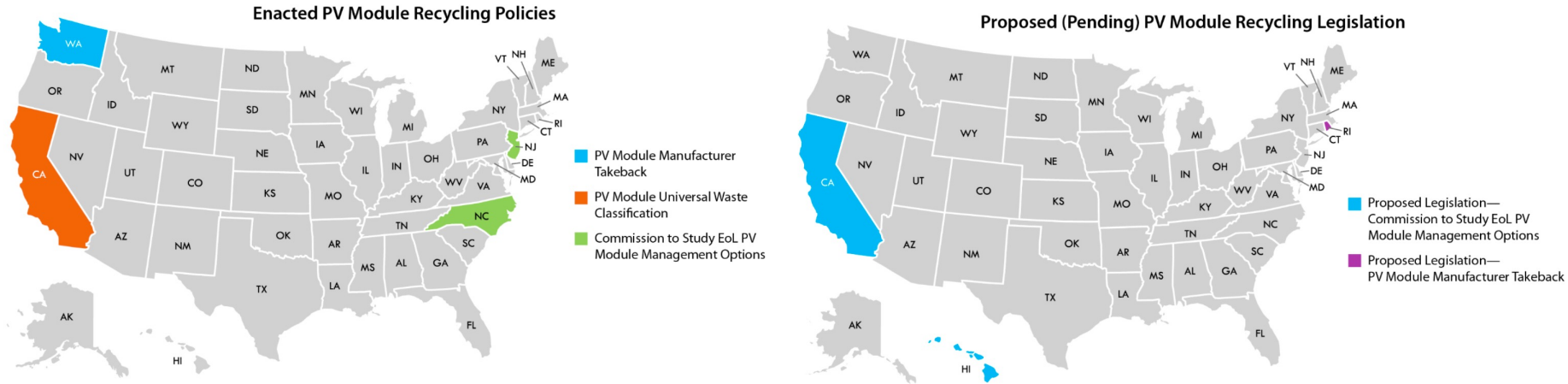
## Single Crystalline Silicon



# Solar PV manufacturing capacity by country and region, 2010-2021



# Solar PV Module End-of-Life Management Programs – Public Initiatives



# Solar PV Module End-of-Life Management Programs – Industry Initiative

## SEIA National PV Recycling Program

The Solar Energy Industries Association (SEIA) and its members are committed to responsible end-of-life management and are proactively developing recycling best practices for the solar and storage industry.

While many module manufacturers already operate take-back and recycling programs for their products, SEIA is working with its members to create a robust recycling network to ensure the clean energy economy remains sustainable for years to come.

The National PV Recycling Program, founded in 2016, is a network of recycling and refurbishment providers that can provide end-of-life management services to solar and storage installers, project and system owners, developers, distributors and other parties. These organizations are capable of providing repair, refurbish, resale, and recycling services for PV modules, inverters and other solar equipment.

### Current partners include:

| Company Name       | Services                             |
|--------------------|--------------------------------------|
| Echo Environmental | Recycling                            |
| Fabtech Services   | Repair, refurbish, resale            |
| SOLARCYCLE         | Recycling                            |
| WeRecycle Solar    | Recycling, refurbish, repair, resale |
| Zeep               | Recycling                            |



