

The causes and consequences of activist states for enterprising firms and markets

Utah Strategy Summit



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Rewiring the World

Implications for Strategy Research



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Why this panel?

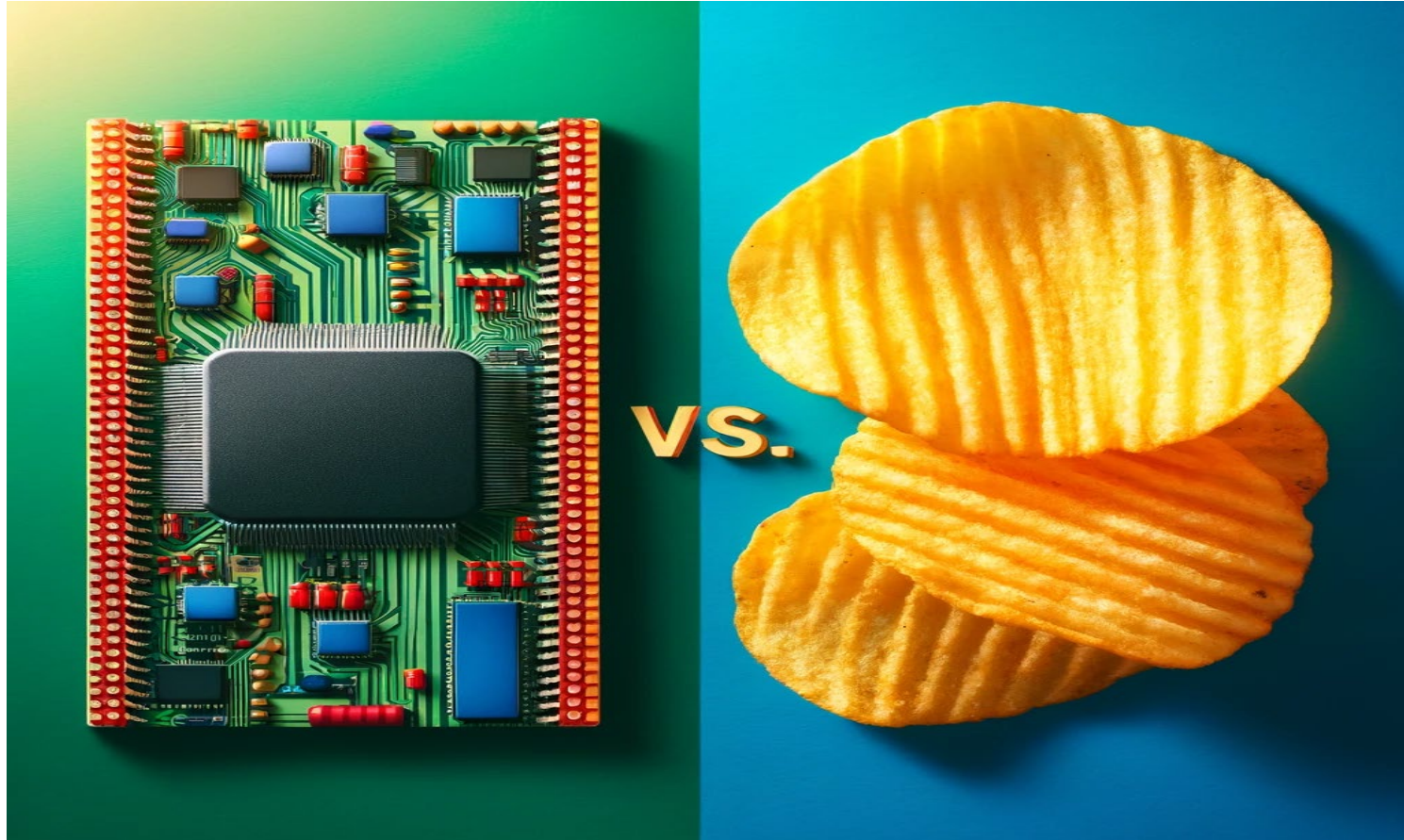
- The background music is changing
 - Deglobalization, decoupling and the rise of populism
- Activist states are on the rise as industrial policy returns
- What does it mean for firms and markets? (h/t to Zeke)
- How should it change the questions we ask and the direction of the field?

Back to the Future...

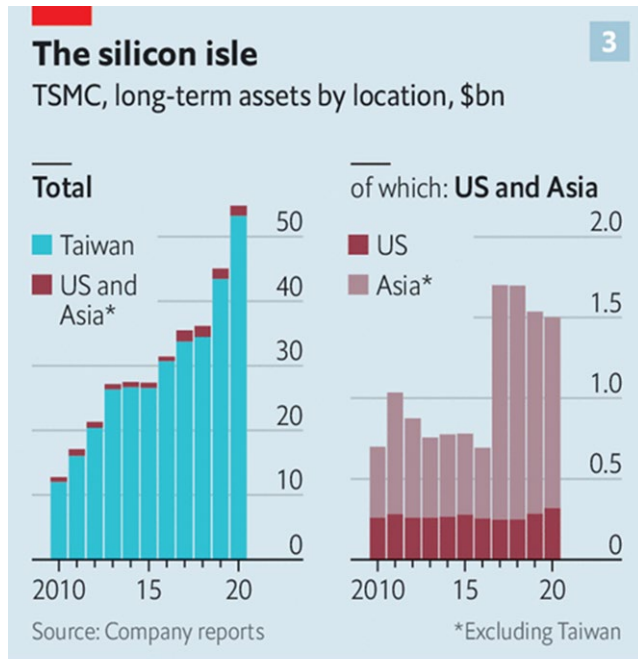
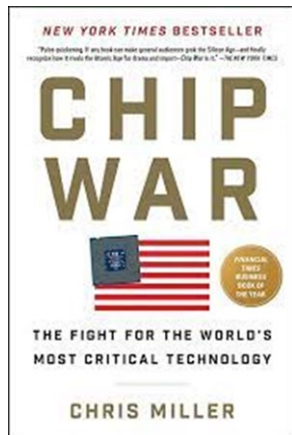
- The origin story for strategy
 - The rise of Japan
 - Industrial policy and national competitiveness
- My origin story
 - Berkeley BPP
 - Developed my academic identity at peak globalization
- Today
 - Lots of perspective from doing “industrial policy” in the U.S. govt
 - BPP imprint remains



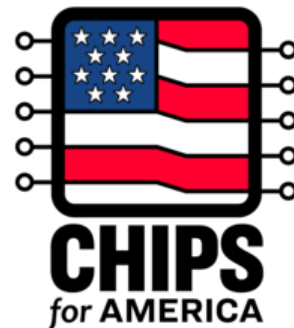
Economics 101: Are computer chips and potato chips the same?



Econ 102: No.

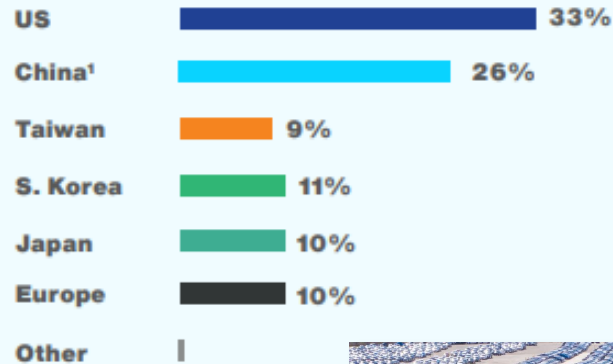


The Economist



Chips shortages cost the US economy \$240 billion in 2021

- US automakers alone faced **\$210 billion** in lost revenue as unfinished vehicles went from production lines to parking lots to await belated chips
- Demand for chips by automakers and consumer electronics was sparked unpredicted increased in demand for both industries
- Downstream US firms are responsible for the majority of semiconductor global demand

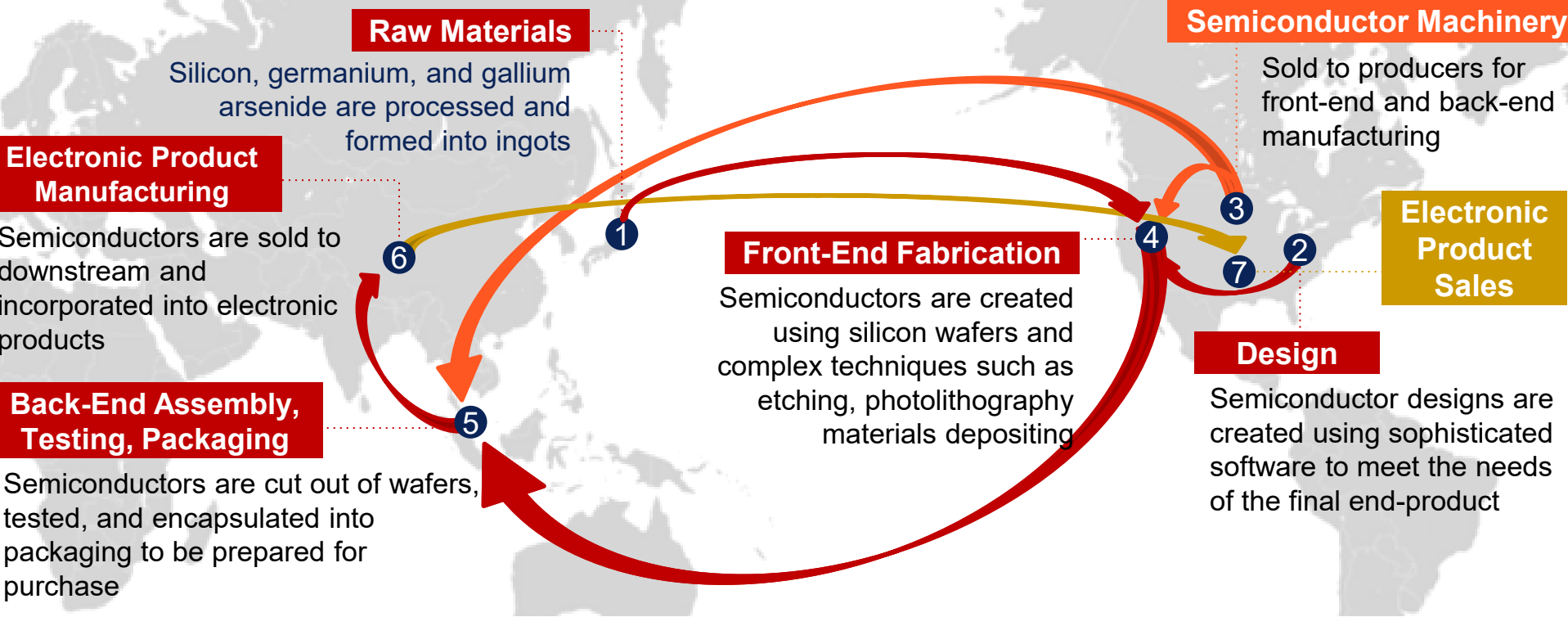


Consumption of Semiconductors by Country



Ford trucks off manufacturing lines awaiting chips

The interconnected nature of the semiconductor supply chain



The pillars of America's new industrial strategy



American Rescue Plan

- **\$1.9 trillion** designed to stimulate the economy out of the pandemic
- **Increased economic growth**, avoiding a double-dip recession in 2021
- Set the stage to implement large-scale industrial strategy



Bipartisan Infrastructure Law

- **\$550 billion** to invest in infrastructure projects
- Already funded over **32,000 projects** in all 50 states and every territory
- Crowding in private investment in key sectors



Inflation Reduction Act

- **\$500 billion** to boost clean energy, reduce healthcare costs, increase tax revenue
- **\$11.7 billion** for the Loans Program Office at DoE to help support innovation
- Aims to accelerate our response to the global **climate crisis**



CHIPS and Science Act

- Appropriates **\$53 billion** to boost US semiconductor manufacturing, R&D, & tech hubs
- **Over \$300 billion** in private sector investments since CHIPS was passed
- **Hundreds of thousands** of well-paying jobs estimated to be created

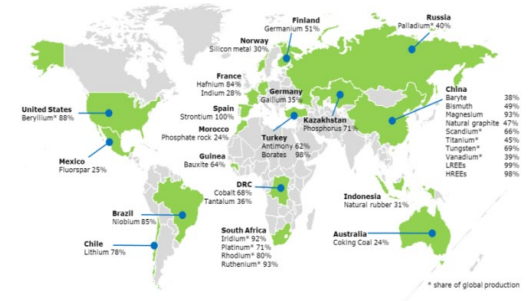
Industrial policies are often aimed at supporting manufacturing sectors with significant employment

- EV transition is important to policymakers but they also care about the people who work in the industry
 - Balance between taking actions that will accelerate EV production at scale vs. proceeding in a way that preserves and expands high-paying American jobs
 - Battery JVs with foreign companies that create jobs that might not be covered by negotiated contract with the Big 3
- Worker organizing is on an upswing across sectors
 - Tight job market
 - Shifting political consensus on trade and immigration



Geopolitical risk in supply chains creates opportunities and challenges for business

- China's leading role in key supply chains
 - The processing and refining of critical minerals
 - Key inputs into solar panel production (polysilicon)
 - Production of electric vehicles
- Other nations with key roles in critical supply chains
 - Chile, Indonesia, Russia, Ukraine
 - How will the U.S. balance national security and energy transition goals?
- Deglobalization, decoupling, and derisking
 - How will these trends impact corporate supply chains and how quickly?
 - Where are the potential investment opportunities?

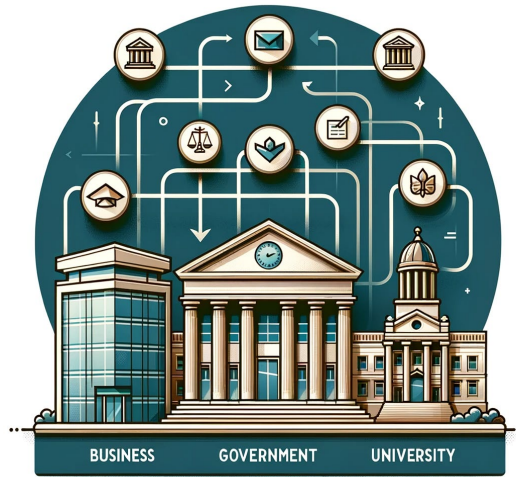


Corporate investment will be clustered in geographic areas, creating new winners and losers

- \$5 billion investment by Wolfspeed in Durham, North Carolina to manufacturer silicon carbide wafers and chips that go into EVs
- \$2 billion investment by EV maker VinFast in Chatham County, North Carolina
- \$6 billion investment by Toyota in battery production in Liberty, North Carolina
- \$1.3 billion investment by Albemarle to process lithium from North Carolina mines
- How will companies work with state/local govt, educational institutions, regional economic development officials, civic and labor groups to achieve shared goals? (McGahan panel)



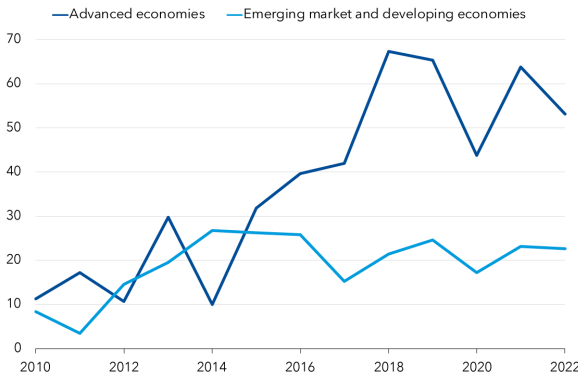
Re turn of industrial policy will empower activist states to support the private sector



On the rise

The number of countries pursuing industrial policy has increased significantly in recent years.

Share of industrial policies within trade policies (percent)



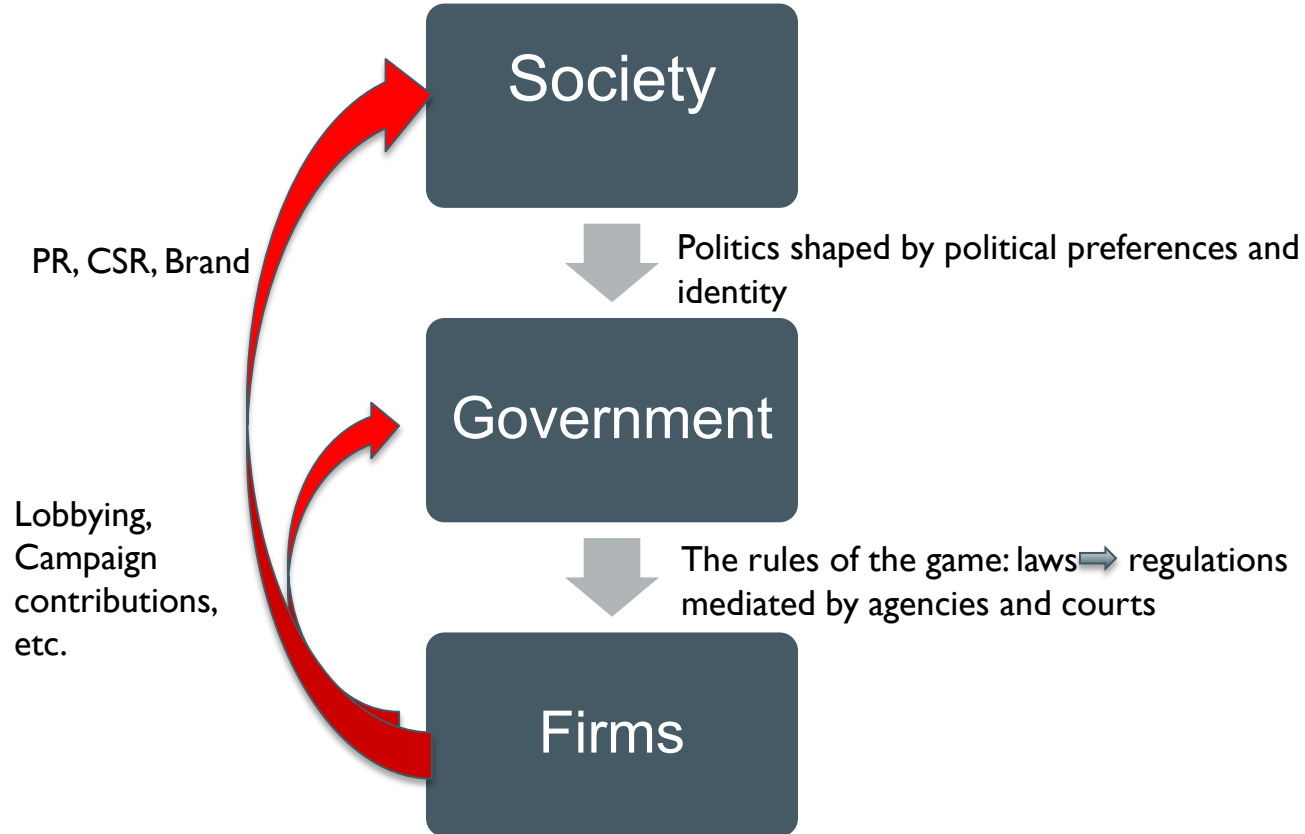
Sources: Global Trade Alert database; IMF staff calculations.



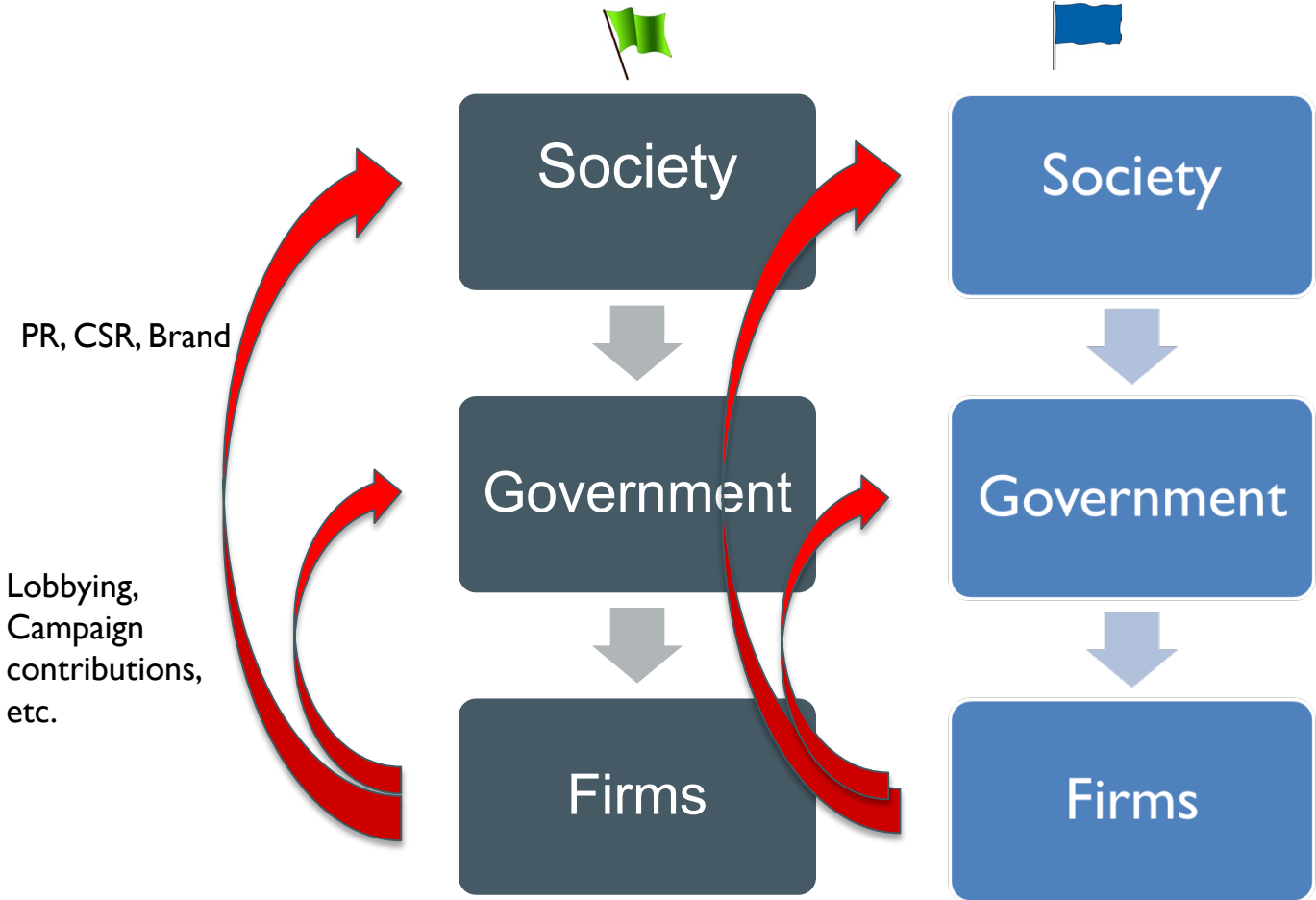
What does industrial policy look like if the firm is a black box? (Reeves panel)



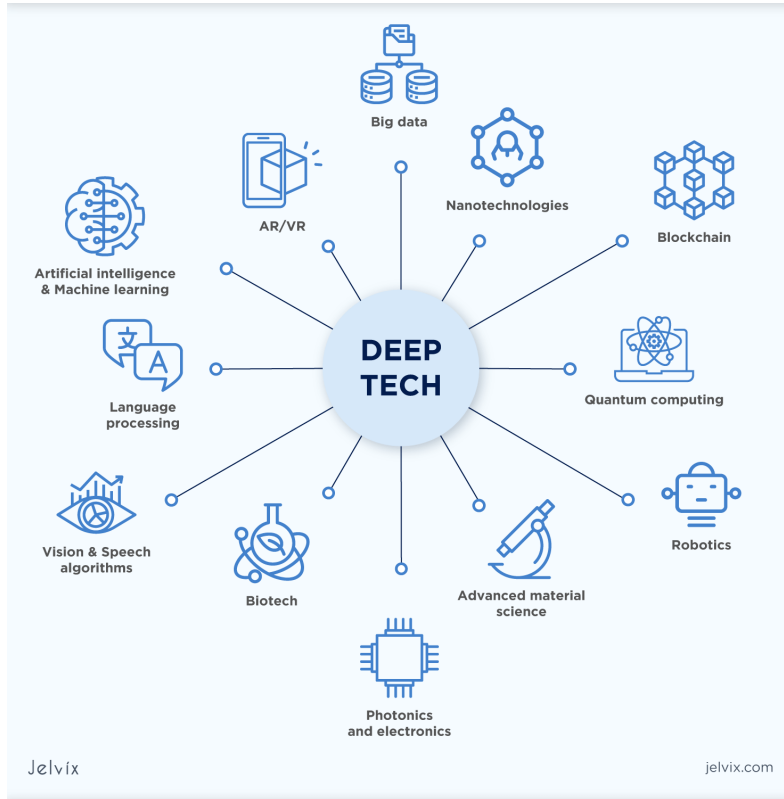
What does “non-market strategy” look like if we do not understand that the world has changed?



Do firms have to pick a side?



These trends are even more important in “deep tech” which require breakthroughs in science and engineering (Seamans panel)



- Typically requires significant R&D
- Intellectual property protection really matters
- Government and university research links are crucial
- Often connected to grand challenges like climate change and national security
- IMPLICATION: Governments are very interested in deep tech and these companies are very interested in what government is doing

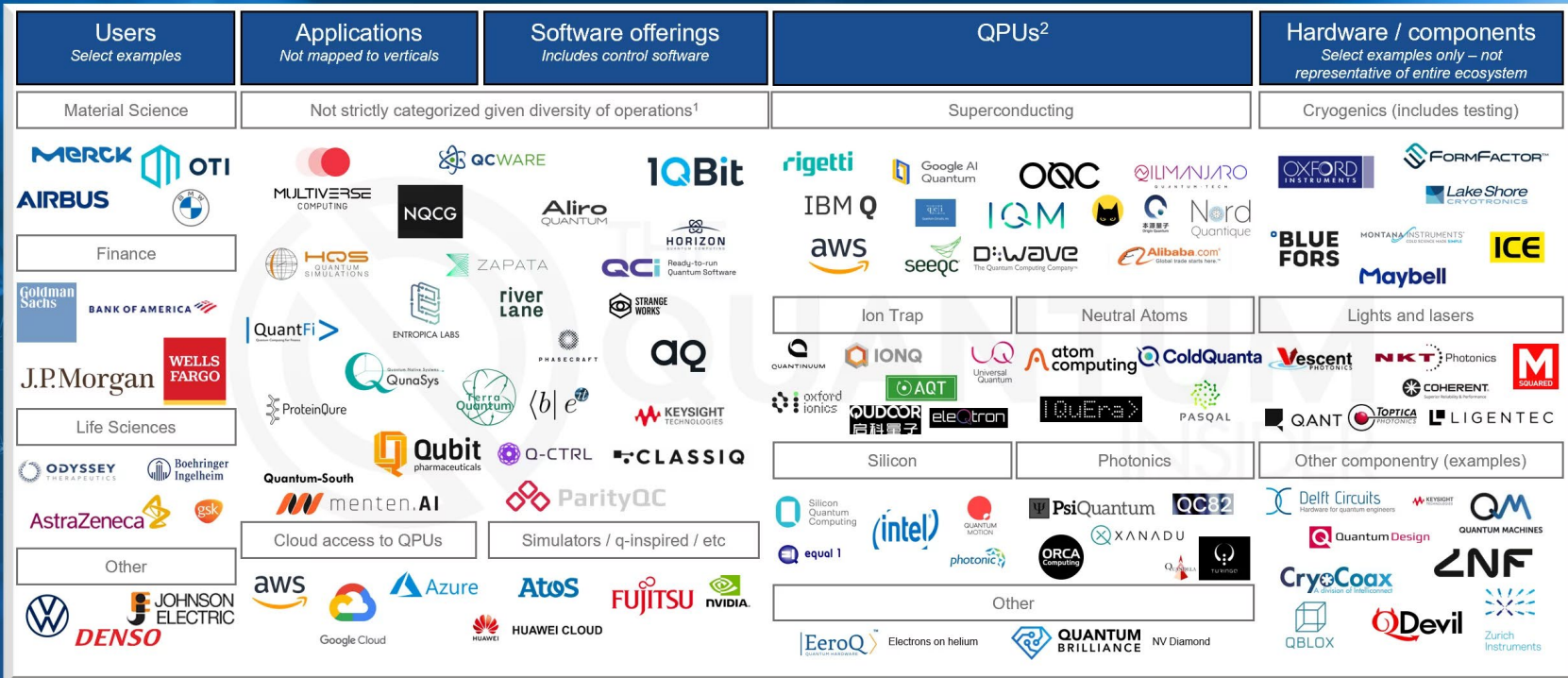
Examp le: The race to build the world's first "useful"

quantum computer



Quantum Computing Market Map

Non exhaustive and in no particular order. Excludes details on control systems, assembly languages, circuit design, etc.



¹ Software offerings can be further classified into SDKs, firmware / enablers, algorithms / applications, simulators etc. but many companies are offering a mixture across the stack

² Many QPU providers are offering full stack services (e.g. Pasqal acquired Qu&Co, Quantinuum was originally CQC prior to merger with HQS, etc.)

The “dual use” of industrial policy

Can the French “leapfrog ahead” with their 2021 National Quantum Strategy?

- €1.8 billion euro mix of public and private capital over 4 years
- PROQCIMA program is a threestage industrial policy (concept, maturation, and industrialization) that begins with € 500 million for 5 French teams to work on a prototype

Will Australia’s big bet payoff?

- Joint investment by Australian federal government and Queensland (A\$1 billion) in PsiQuantum
- Company will build and operate the world’s first “useful” quantum computer in Brisbane

Should China’s public spending on quantum be a “Sputnik” moment for the U.S.?

- China spending 4x in public spending on quantum compared to the U.S.



How I am integrating this into my teaching....(Alcacer panel)

- Different business environment
 - **Supply Chain** -90% of U.S. chip industry supply of neon gas comes from Ukraine
 - **Competition** -Who should build green hydrogen in India? Reliance vs. Shell
 - **Customers** -How big is the potential market when we have to choose between the U.S. and China?
 - **Barriers to entry** -Chinese EVs in Europe
 - **Substitutes** -Carbon border adjustment mechanism changes the prices of carbon-intensive alternatives
- Different strategic decisions
 - Is Samsung a Korean company or a global company?
 - Where should TSMC build a computer chip factory?
 - How much should Exxon invest in Guyana's Stabroek block vs. carbon capture and storage?
 - Does Saudi Aramco need to understand quantum computing?
 - Should Sequoia split up its firm by geography?

What are the most important* research questions to ask? (I)

- People and places
 - Which regions are most successful in attracting and sustaining these manufacturing investments?
 - What are the successful workforce development models that can train workers at scale for new industries?
 - Which factors shape workers' preferences for advanced manufacturing work?
- Firms and innovation
 - Which firms will create new jobs and “new work” and how do these diffuse across industry?
 - How does increased geopolitical tensions impact collaboration among researchers?
 - How will export controls impact the rate and direction of innovation in China?
- Org structure and supply chain resilience
 - How will “deglobalization” impact the boundaries of the firm?
 - How do we measure supply chain resilience at the national level, firm level or within products?

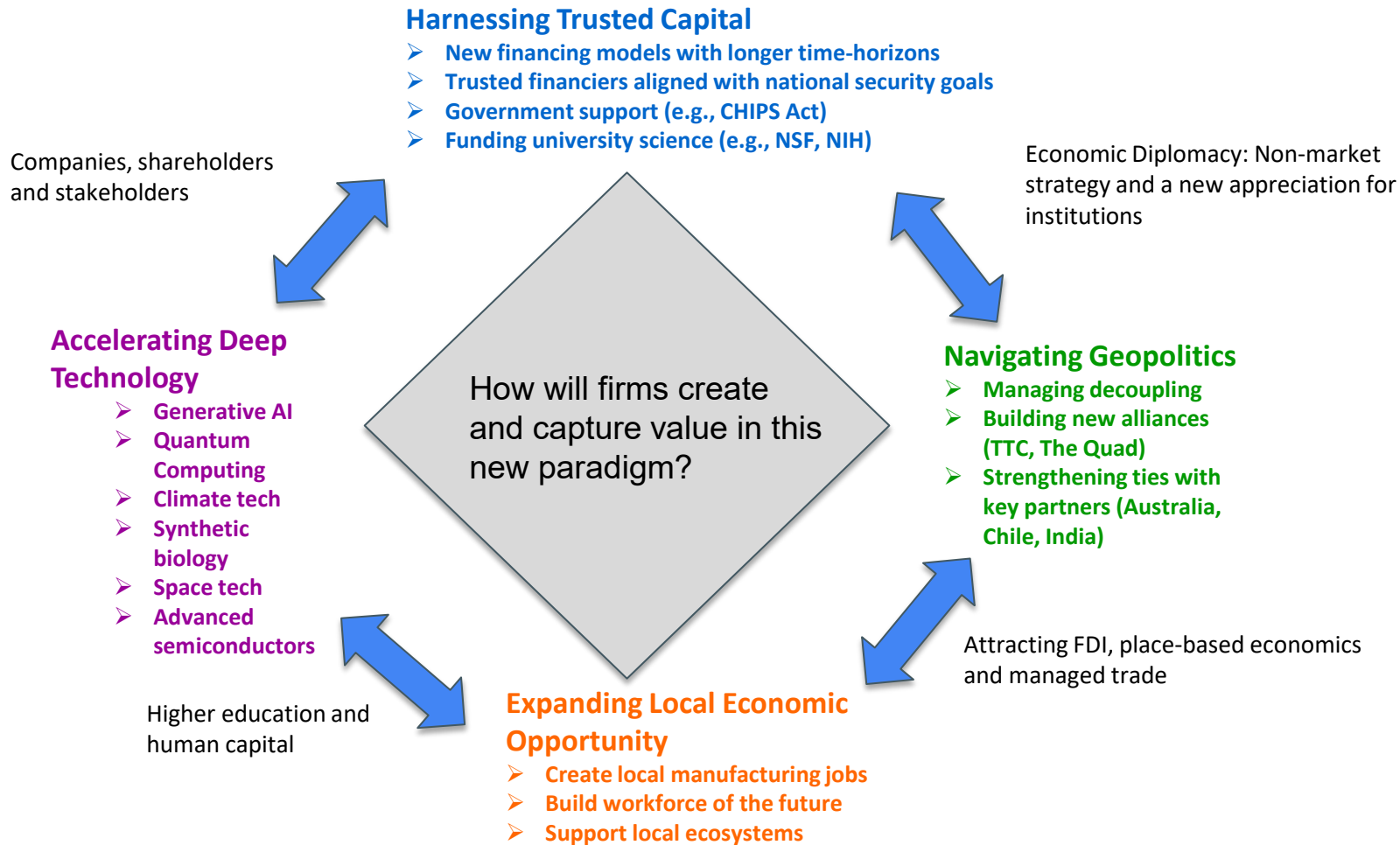
What are the most important* research questions to ask? (II)

- Firms and non-market strategy
 - How do firms shape industrial policy through non-market strategies?
 - How responsive are firm investments to national governments identifying “critical technologies”?
 - Which firms use green tax credits and how does it impact development of key technologies?
- Firms and financing
 - How do CEOs pitch climate-friendly initiatives to ideologically diverse stakeholders?
 - How will geopolitics impact macroprudential policy, interest rates and the provision of private capital for enterprising firms?
- Grand challenges (Lenox Panel)
 - What does a rewired world imply for the global effort to adapt to and mitigate climate change?
 - Will AI be the climate unlock or another headwind?

Caveats

- Strategy research for the world as it is as opposed as it “should” be
- The downsides of activist governments
- Connection to the partisan divide over the role of government
- How broadly will we define national security?

A new economic paradigm: Reindustrialization



Thank You!



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