

June 5, 2025

Distinguished chairman and members of Congress.

My name is Yossi Sheffi, and I am a professor of engineering systems at MIT and director of the MIT Center for Transportation and Logistics.

I was asked to inform the committee on two subjects: the challenges for increased domestic manufacturing, and specifically about the required workforce skills for efficient manufacturing and supply chain operations. The views in this statement represent my own and not MIT's.

First: What can be done to support reshoring manufacturing?

- Investing in automation (Robotics, AI, ML, etc.). These reduce reliance on manual labor (but require higher-skilled labor). This may involve a reform of regulations and tax regimes. We must regulate less and do more (we have to examine the trade-offs). Also: most companies still use point technological solutions and legacy systems rather than newer systems that avoid silos and inform entire processes.
- Investing in domestic sources of materials and intermediate processing. Example: rare earth materials. The main problem is not that China has them (the US has huge reserves), it is that China has developed a processing method and controls 80-90% of the processing capacity. This is dirty and expensive, but we have to decide if we want to depend on China and possibly relax some environmental regulations and permitting, or keep being at China's mercy.
- Targeted help, like parts of the Defence Production Act, which are aimed directly at supporting domestic manufacturing. But staying on message and not including unrelated issues.
- Improve infrastructure. Roads, bridges, ports, passenger railways, and airports. They are far behind advanced world standards. The Infrastructure Investment and Jobs Act was a good step in this direction, but what is required are consistent investments, faster paths to implementation, and not clouding the path with unrelated current political priorities.
- Short term: reduce Tariff uncertainty. Supply chain executives can deal with any hand that you throw at them, they just need to know the rules. When rules are changing seemingly haphazardly, it is impossible to plan, and the result is higher costs due to inventory accumulation and even bare store shelves.



An issue of utmost importance: the skills of the US workforce. This is the second related issue.

- One of the main challenges with re-shoring manufacturing is the lack of manpower not enough of the "right" labor. Even today, US manufacturing cannot hire what it needs.
- Two countervailing issues: the new plant will be high-tech and will not create many jobs, and we still do not have enough workers.
- Education issues:
 - The US has fallen behind on K-12 education. "Johnny cannot read." With the exception of special schools (religious, private, magnet), in many states, parents do not have the funds (directed at public schools) to send their kids to better schools. Maybe there is a Federal solution, even though this is a local control.
 - Universities have become obsessed with things other than education: DEI, antisemitism, etc., and their weak leadership is not successful in righting the ship. The administration must change this without killing this asset.
- However, new technologies can disconnect learners from the old paradigm of a teacher in front of the blackboard.
 - Example: MIT CTL MicroMaster: a series of five courses and a final exam in supply chain management. 1.2 million learners from every country except North Korea.
 - Online courses allow for continuous learning and upgrading of skills. Call it just-intime education.
- What is missing most: technology-savvy trade people: plumbers, electricians, operators of numerical control machinery, factory robot operators.
 - When friends and neighbors ask me where to send their kids to college, I try to direct them to trade school. If there is one thing the government should do, it is to fund a significant increase in the number (and quality) of trade schools.
 - These are the last positions that AI can replace. AI is already replacing white collar office workers, including artists, programmers, writers, lawyers, etc. Nobody is replacing plumbers or factory machine operators.
- An action with immediate impact will be to change immigration laws to be consistent with the country's needs, not the lottery or those who cross illegally.
 - Today's need: nurses, tradesmen, but also high-level scientists and engineers.
 - Allow STEM PhDs to stay in the country and contribute (right now, we teach them and send them home)
 - Other countries have a "point system" based on the current needs of the economy and businesses. Maybe the US should adopt one.
 - Increase the number of postdocs and visitors to universities from places with leading STEM researchers.

Sincerely,

Yosen Sheffi

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