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Trying to write something about CHIPS, IRA, and American industrial policy. But so far the only thing that has jelled has been the history-oriented preliminary throat-clearing:

Back in the 1840s Friedrich Engels was really annoyed by the writings of the economists that crossed his desk. They wrote about land, labor, and capital. But there was something more important as well:

> A factor which the economist does not think aboutâ€¦ What has the economist to do with inventiveness? Have not all inventions fallen into his lap without any effort on his part? Has one of them cost him anything? Why then should he bother about them in the calculation of production costs? Land, capital and labour are for him the conditions of wealth, and he requires nothing else. Science is no concern of his. What does it matter to him that he has received its gifts through Berthollet, Davy, Liebig, Watt, Cartwright, etc.â€“gifts which have benefited him and his production immeasurably?â€¦ A single achievement of science like James Wattâ€™s steam-engine has brought in more for the world in the first fifty years of its existence than the world has spent on the promotion of science since the beginning of timeâ€¦ 1

Engels recognized that the market economic order of private property, exchange, and the pursuit of profit that the members of the business class had ringmastered, the increasing scale of the internal within-corporation divisions of labor that they ran, and their direction of profits to the industrial research labs in which, increasingly, the science and engineering were being done were all essential. At the end of the 1840s he, along with his BFF Karl Marx, were to marvel at how the business class â€œplayed a most revolutionary partâ€¦ created more massive and more colossal productive forces than have all preceding generations togetherâ€¦ what earlier century had even a presentiment that such productive forces slumbered in the lap of social labour?â€☐ 2

But all the potential prosperity the market could generate rested on science and engineering. And thus the economist got it wrong: â€œHe does not know how to calculate such things; the advances of science go beyond his figures.â€☐ In Engelsâ€™s view, we needed to replace the market economy and the analyses of its tame propagandist economists with â€œa rational orderâ€¦ [going] beyond the division of interests as it is found with the economist, [where] the mental element certainly belongs among the elements of production and will find its place in economicsâ€¦â€☐

Those who took Engels too seriously and tried to replace the market economy with an all-thumbs command economy created what were the greatest economic disasters of the twentieth century with their systems of really-existing socialism. But Engelsâ€™s pointâ€”that the market is going to get it wrong because it cannot price, it does not see, the value of the non-rival ideas of science and of the communication networks of communities of engineering practiceâ€”is 100% right. And scotch-taping together some system of restricted appropriability via intellectual property â€œrightsâ€☐ and public funding of basic research is highly, highly, unlikely to be a sufficient fix for the problem.

And so we have, here in America, since Alexander Hamilton, largely successfully, had ***industrial policy*** to try to fill in the gap, to properly value and hence promote the spillovers and positive externalities from the research, the development, and the knowledge-exchange of the communities of engineering practice in a way that the invisible hand of the market, to which such things are themselves invisible, cannot. As Steve Cohen and I wrote in our *Concrete Economics: The Hamilton Approach to Economic Policy*:

> In successful economies, economic policy has been pragmatic, not ideological. It has been concrete, not abstractâ€¦ policies to shift its economy onto a new growth directionâ€¦ collective choicesâ€¦ notâ€¦ the emergent outcomes of innumerable individual choices aimed at achieving other goalsâ€¦ not been the unguided results of mindless evolutionâ€¦ [rather] intelligent designsâ€¦ 3

And this has not been a process disconnected from the market:

> Yes, there was an â€œinvisible hand,â€☐ and enormous entrepreneurial innovation and energy. But the invisible hand was repeatedly lifted at the elbow by government, and re-placed in a new positionâ€¦ Government signaled the direction, cleared the way, set up the path, andâ€”when neededâ€”provided the means. And then the entrepreneurs rushed in, innovated, took risks, profited, and expanded that new direction in ways that had not and could not have been foreseenâ€¦ Underneath the rhetoricâ€¦ [was] a critical though often unspoken interdependence of entrepreneurship and governmentâ€¦ The choice of new direction was based on a general perception of where Americaâ€™s economy ought to be going and what would be needed to move the economy in that direction. There was, always, an unsightly tangle of interests and compromises. But eyes stayed on concrete realityâ€¦

Or so it was until the Neoliberal Turn of the 1980s.

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On the right, the 1980s saw Ronald Reaganâ€™s declaration that government could not be the solution but was the problemâ€”that the solution was large tax cuts for the rich, so that the successful, the entrepreneurial, and the innovative could focus on creating good jobs rather than spending their time focused on their tax-avoidance strategies. On the center, we had the very sharp Charles Schultze and many others drawing a substantive and moral equivalence between Reaganite overpromises on supply-side tax cuts and worries that Americaâ€™s economic structure was shifting away from sectors with large positive research, development, and engineering-community externalities and into sectors with many fewer such, and even into sectors of negative-sum dissipation. For, Schultze wrote back in 1983:

> America is not de-industrializing. Japan does not owe its industrial success to its industrial policy. Government is not able to devise a â€œwinningâ€ industrial structure. Finally, it is not possible in the American political system to pick and choose among individual firms and regions in the substantive, efficiency-driven way envisaged by advocates of industrial policyâ€¦ 4

That an excessively large chunk of income in America flows to dissipative activitiesâ€”health-care administration, financial churningâ€”is not something I have heard anyone deny in recent years. That the Japanese experience gives us â€œno reason to believeâ€¦ [the governmentâ€™s] influence, on balance, improved the choices in any major wayâ€¦. [It was] a huge saving rate, aggressive business leaders, and a backlog of modern technology waiting to be exploitedâ€¦â€ that did it rings very hollow today, given the inability of emerging markets in general to converge to Dover-Circle-Plus levels of productivity, and the success of not just Japan but its emulators Korea, Hong Kong, Taiwan, Singapore, Malaysia, Thailand, coastal mainland China, Indonesia, and now Vietnam. But perhaps the most ahistorical claim in Schultze (1983) was â€œwe actually know precious little about identifying, before the fact, a â€˜winningâ€™ industrial structureâ€¦â€.

Alexander Hamilton set out to redesign the agrarian economy that Britainâ€™s mercantilist policies had imposed on the North American colonies, and for which Americaâ€™s unlimited land and limited population density so well suited it: he knew that the winning industrial structure had manufacturing and banking in prominent places, rather than having the United States be a gigantic New Zealand. After Hamilton, Jefferson, Madison, and their successors quickly decided that their small-government, agriculture-first principles had been an out-of-power luxury, and the â€œAmerican systemâ€ of industry-promotion, protective manufacturing tariffs, and infrastructureâ€”especially canal and railroad building. Preâ€“Civil War America, safe from foreign military threat, channeled Department of War money to fund the development of promising high-tech industries at the Springfield Arsenal and elsewhere. And Robert E. Leeâ€™s first major post-West Point army job was not commanding soldiers on some border but rather making the Mississippi River behave in the area around St. Louis. Railroad expansion, state land-grant colleges, homesteads to prevent the growth of latifundia and latifundistasâ€”the post-Civil War governmentâ€™s infrastructure constructions and land allocations were big government incarnate. Regulation of natural (and unnatural) monopolies. Amending the constitution and shifting from a tariff- to an income tax-based government. And we are not even up to World War I.

And if you had tried to argue to either FDR or to Eisenhower of the Interstate Highway System and the post-Sputnik moment that we did not know what a â€œâ€˜winningâ€™ industrial structureâ€ was, they would have laughed.

No. The only truly live argument in Schultzeâ€™s *Industrial Policy: A Dissent* is the last: â€œit is not possible in the American political system to pick and choose among individual firms and regions in the substantive, efficiency-driven way envisaged by advocates of industrial policyâ€¦â€ This is the point of Mancur Olsonâ€™s *The Rise and Decline of Nations*: that the very success of the United States in the years up to the 1980s had created a large degree of institutional sclerosis and a great vulnerability to rent-seeking by those willing to invest in political influence.5 The U.S. government, as a result, lacked what Peter Evans calls â€œembedded autonomyâ€, and the larger its scope for action the more the government will distort economic activity toward things preferred by the politically powerful, even if policies fly the false flag of promoting high positive-externality activities 6.

Perhaps. Perhaps the gas tank powering the engine of American Exceptionalismâ€”of exceptional technology-led economic growth and developmentâ€”was filled at filling station FDR and then topped-off at filling station DDE, but there are no more filling stations. Perhaps now the Silicon Valley infotech hub; the Boston, San Francisco, San Diego, and Research Triangle BioTech hubs; plus the widely distributed CleanTech efforts are simply running on fumes. Perhaps CHIPS and IRA and follow-on efforts will be unsuccessful. As Laura Tyson and Lenny MendonÃ§a very politely put it: â€œGetting an industrial policy right is never easy, and getting a place-based one right will prove even more challengingâ€¦â€7. If so, then the 21st century will definitely not be an American century in any sense.

But perhaps not. It is in our hands.