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# Michigan’s Innovation Ecosystem Could Use a Boost

## In a Nutshell

- Economists agree that economic innovation and technological progress are critical factors in driving economic prosperity and living standards
- A forthcoming CRC report reviews existing empirical research that shows that public policy can be an important driver in generating more innovation
- The report also shows that Michigan’s public spending effort on innovation and entrepreneurship programs that aim to encourage innovation lags behind many neighboring states. The report outlines funding options that policymakers could use to address this gap.

Last year, as part of our award-winning research series, Michigan’s Path to a Prosperous Future, with our partners at Altarum, the Research Council outlined long-run economic trends related to income, education, and workforce skills that have and will continue to challenge Michigan’s economic prosperity going forward.

A forthcoming report from the Research Council dives into perhaps the most important factor influencing economic growth and living standards both in Michigan and the country as a whole: economic innovation. Economic innovation occurs when new technologies, ideas, and knowledge are commercialized into inventive new products and processes that change the way we work and live. Personal computers, smartphones, and emerging AI technology are prime examples of economic innovations.

The federal government invests significant resources to both provide and encourage the basic research and development that helps drive future innovations, and states also administer programs that aim to foster greater innovation in their economies.

The new report summarizes existing research that points to why we should care about economic innovation and then examines state-funded innovation and entrepreneurship (I&E) programs in Michigan and five neighboring states, comparing program scopes, funding, and successes.

Here is a preview of three major takeaways from this new research.

## **Economic innovation drives growth and living standards.**

The writer George Bernard Shaw is said to have once quipped that if all economists were laid end to end, they’d never reach a conclusion. Mr. Shaw had a point; there is much disagreement among economists on many economic matters. Importantly though, the critical role of economic innovation is not one of them.

There is a broad consensus among economists that innovation and technological progress along with work-

force skills – or what economists call “human capital” – are the key drivers of economic growth and rising standards of living. That’s because both innovation and better skills help fuel worker productivity gains. And it is those productivity gains that drive higher wages and, ultimately, higher living standards. Without innovation and enhanced human capital, modern economic growth theory suggests per-capita incomes and living standards stagnate.

However, economists also point to potential barriers to achieving innovation. We know major innovations can result in large societal benefits; think of the value provided by personal computers, for instance, in transforming both our home life and our work life. But, while the societal benefits from a particular innovation may be very large, the private monetary gain to its inventor may be more limited if competitors are able to learn from, adapt, or even copy the innovation for their own gains. If the innovation’s inventor determines that this “knowledge spillover” would reduce the private gain so much that it no longer covers the R&D costs of achieving the innovation, the innovation may never happen, and society does not benefit more broadly.

In addition, a startup company typically needs capital as it brings an innovation to market, but while the founders of the company may have great insights into the potential of its innovation, external lenders generally will not. Further, entrepreneurs may fear fully disclosing information about the innovation, lest it be leaked to other competitors. Evidence suggests young technology-focused startup firms face higher capital costs than larger firms and non-technology-focused firms because of these information challenges, and higher capital costs could conceivably prevent some new business ventures from achieving viability.

In short, the existence of potential knowledge spillovers and information challenges suggest that, without policy interventions, market decision-makers may underinvest in both R&D and young startup firms despite their high potential to produce beneficial economic innovation.

### **Public policy can help generate more innovation.**

The existence of these market challenges alone, however, does not necessarily imply that public policy can effectively address their potential negative effects. Crucially, our forthcoming report reviews the empirical evidence that shows public policy interventions have had a positive impact on R&D and technological innovation. Highlights from the report include:

- Research from the Federal Reserve Bank of Dallas that measured the impact of large historical increases in federal R&D appropriations. The analysis revealed that spikes in non-defense R&D appropriations resulted in increases in productivity, growth in the flow of patents, and growth in the science and engineering workforce roughly eight years following the spike and remaining persistent for another 15 years.
- Researchers found that businesses that received moderate support from publicly-funded venture capital sources achieved better outcomes in terms of total venture capital financing and in terms of a successful “exit” (e.g., achieving an initial public offering or being acquired by a third party) than businesses that relied solely on private venture investments.
- The federal government’s Small Business Innovation Research (SBIR) program provides grant support to firms in the early concept stage of developing a new innovative product. A study using ranked applicant data compared marginal winners and marginal losers of SBIR awards from the U.S. Department of Energy. A grant award had large, positive impacts on eventual patenting, future revenue, and the probability that the recipient received subsequent venture capital support. Those positive outcomes were particularly pronounced for small, young firms.
- A survey of recent empirical research concludes that a 10 percent drop in the tax price of R&D attributable to an R&D tax credit results in a long-run increase of 10 percent or more in actual R&D activities.

In short, the research points to several different policy interventions that have yielded positive outcomes in terms of encouraging innovation-inducing R&D, improving the prospects of young innovative firms, and achieving long-run impacts on productivity and patenting.

## Michigan invests less than its neighbors in I&E programs.

Recognizing the importance of innovation to economic growth, state governments commonly administer innovation and entrepreneurship (I&E) programs aimed at fostering an entrepreneurial “eco-system”. State programs provide financing and technical assistance to support the formation of new high-tech early-stage business startups. They also provide support to encourage the commercialization of new products and technologies arising from research and development, often with an emphasis on research generated by colleges and universities within the state. However, Michigan’s public support for these programs (measured relative to the size of the state economy) trails four neighboring states (Ohio, Indiana, Pennsylvania, New York), exceeding only Illinois in state spending effort.

Of particular note, Ohio, Indiana, and Pennsylvania all have systems that make significant public investments in coordination activities from long-serving and well-funded entrepreneurial service providers. Ohio’s five regional Entrepreneurial Service Providers; Pennsylvania’s Ben Franklin Technology Partners; and Indiana’s Elevate Ventures are all public-private partnerships that are assigned to provide a menu of supports including financing, business and technical supports, and establishing connections with state colleges and universities to promote research commercialization.

The report outlines a menu of funding options that Michigan policymakers could tap to increase I&E program spending effort to levels closer to these states. Options include tapping into sizable fund balances already earmarked for economic development programs as well as redirecting existing revenue streams. Policymakers could also consider a shift in existing MEDC appropriations toward I&E programs. A new \$60 million appropriation included in the Fiscal Year 2025 budget to support a new Michigan Innovation Fund will help provide limited-term support as well; legislation that sets parameters on how that funding is spent is still pending before in state legislature.

To be clear, there are many important areas of public policy where state funding might be gainfully utilized to improve the lives of Michigan residents. But within economic development programming, economic research suggests that I&E programs have a unique link to innovation-induced economic growth that policymakers should consider as decisions are made on future budget allocations.

## ABOUT THE AUTHOR

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Bob is in his second stint with the Citizens Research Council, having worked for the organization from 2013 to 2015. He has spent most of his time in state government, having worked in the Office of Health and Human Services – State Budget Office and as Associate Director for the non-partisan Michigan House Fiscal Agency (HFA). He has extensive expertise and has provided non-partisan advice and analysis on state policy and budget matters in areas including corrections, human services, and transportation. Prior to joining HFA, he was a research assistant and project manager from 1994 to 1996 for Public Policy Associates, a Lansing-based policy research and consulting firm. He also served for two years within the Michigan Department of State working on department budget and financial issues.

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