National Economic Research and Resilience Center

An Introduction

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We are pleased to introduce the National Economic Research and Resilience Center (NERRC), an interdisciplinary economic research center at Argonne National Laboratory (Argonne). Our mission is to provide innovative and transparent economic data access, research, and analysis to support and strengthen economic development and resilience in communities across the nation. NERRC is an outgrowth of Argonne's ongoing partnership with the U.S. Economic Development Administration (EDA) and represents our commitment to supporting the economic development community for years to come.

This short article is the first in a series of quarterly economic resilience research reports that our team will produce in the coming months and years. It introduces the economic development community to Argonne and to NERRC, and highlights the types of research we will conduct and tools we will develop.

Argonne National Laboratory: A Short History

Argonne was the first of the U.S. Department of Energy (DOE) National Laboratories, created in 1946 as an outgrowth of the University of Chicago's work on the Manhattan Project. Based in Lemont, Illinois, our original mission focused on the peaceful deployment of nuclear energy, as well as basic physics and chemistry research. Over the ensuing decades, researchers at Argonne developed foundational technology that informed the development and design of nuclear power plants and nuclear submarines, discovered two elements in the periodic table (einsteinium and fermium), developed techniques to analyze the surface of the moon, and made significant advances related to tracking and observing subatomic particles.

While nuclear, physics, and chemistry research remain key focus areas at Argonne, our mission has significantly expanded over our 75-year history. We lead multi-organizational partnerships that produce leading energy storage, materials science, and quantum information science research. We conduct a wide range of sponsored research projects, often in collaboration with universities, industry, and other national laboratories on topics such as disasters, community resilience, clean energy supply chain, national security, and climate change. Finally, we are a DOE scientific user facility, providing researchers from around the world with access to powerful tools such as super computers and ultra-bright, high energy x-ray beams. Collectively, Argonne's ongoing research and resources create new technologies, spur innovation, and strengthen economic resilience across the United States.

NERRC At a Glance

NERRC is a new center within Argonne, but it leverages and builds on existing capabilities throughout our organization. Housed within the Decision and Infrastructure Sciences Division, our interdisciplinary team includes economists, data scientists, community planners, operations researchers, and public policy experts. We focus on applied research that is intended to help economic developers in their day-to-day work. We also aim to serve as an entry point for the economic development community to access relevant research and resources from across the laboratory.

With the support of a $2.4 million grant from EDA, NERRC is organized around four key pillars of activity, described below.

Figure 1: NERRC's Four Pillars of Activity

Data Access and Analytics

We currently maintain two economic development data tools. Launched in January 2022, the National Economic Resilience Data Explorer (NERDE) consolidates information and data on economic distress criteria, demographics, the existence and emergence of industry clusters, and COVID-19 impacts to local economies. It is intended to inform local and regional economic development planning and initiatives, as well as to help communities evaluate potential eligibility for EDA assistance. It includes a county-level dashboard and an Economic Development District dashboard.

More recently, we released the Economic Development Capacity Index (EDCI), which brings together 53 unique indicators to assess critical

Figure 2: National Economic Resilience Data Explorer Industry Snapshot for DuPage County, IL

elements that contribute to a county's overall economic development capacity. The EDCI can be used to support or inform economic development planning, project identification, or applications for assistance. It can also assist communities with identifying areas of relative strength or opportunities for growth.

Over the course of the next year, we will be working to expand and enhance our suite of data tools. Namely, we will create an interactive economic development information clearinghouse that provides stakeholders with ready access to critical data, research, and analysis. The clearinghouse will be fully public and available to all economic development users. What we create will be rooted in the needs of the economic development community, and we will seek input from many of you throughout the development process.
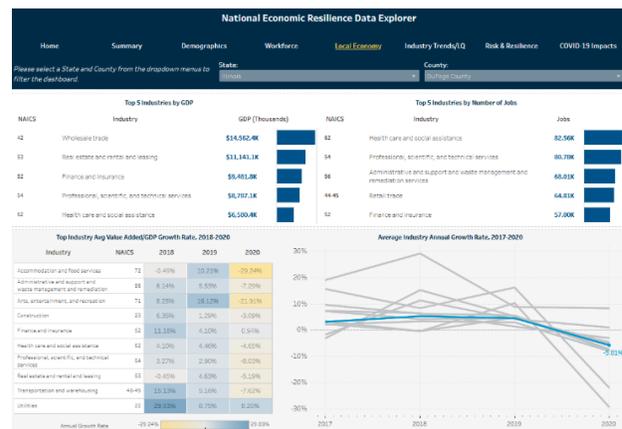
Research and Analysis

NERRC will apply decision science capabilities to address high-priority research topics for EDA and the broader economic development community. For example, we are conducting research and examining existing literature, policy, and guidance to advance our collective understanding of equity in the economic development context, document equity measurement methods and approaches, and highlight best practices. In addition, we will use machine learning to identify and evaluate trends, best practices, commonalities, and approaches for economic development planning.

These two topics represent the starting point for building our comprehensive research agenda. All of our research will complement the amazing work already taking place across the economic development community, and we look forward to forging new partnerships and building our research agenda around the needs of the economic development community.

Program Evaluation

We will build on our existing effort with EDA to develop and implement new methods for estimating investment impacts. This effort uses third-party, open and publicly accessible data combined with new quantitative assessment techniques. The goal is to deepen our understanding of the specific near and long-term effects of programmatic investment in economic development capacity at the local and regional level and, ultimately, will allow for future investments to be better aligned with community needs. It supplements the excellent program evaluation work that other organizations are undertaking and provides a method for more quickly detecting and monitoring quantitative impacts from investments.

Economic Resilience Learning Collaborative

To provide timely, relevant, and actionable research, we will be hosting quarterly webinars that bring the latest in economic resilience research and analysis to those who are doing the important work on the ground. In addition, we will produce a quarterly economic resilience research report, intended to be a digestible synthesis of cutting-edge research that can be immediately applied in the field. Finally, we will be hosting an annual convening at Argonne's main campus in Lemont, Illinois that will bring together practitioners and researchers from across the country to share best practices, tackle economic resilience challenges in a collaborative environment, and identify priority research needs. This line of effort will be partnership driven from the start, and we look forward to providing a forum for diverse perspectives.

Our Commitment

We recognize that we are joining a vibrant community of researchers and practitioners who do incredible work each day. We intend to be a partner, collaborator, and resource to this community. Our tools and research will be user-driven and tailored to meet your data and research needs. Importantly, we welcome and encourage feedback at any time to ensure that what we produce is as impactful as possible. Please do not hesitate to reach out to us at NERRC@anl.gov.