

ECON FOCUS

A photograph of a worker in a yellow protective suit and hard hat walking through a semiconductor manufacturing facility. The worker is seen from behind, walking away from the camera. The facility is filled with large, orange and white machinery. In the background, there are signs for 'BAY 8' and 'BAY 6'. The floor is highly reflective, showing the worker's reflection. The overall scene is brightly lit, typical of a cleanroom environment.

**The Region's
Chip Industry**
Navigating a new age
of industrial policy

**Bringing Talent to
Small Towns**

**Payments in the
Fast Lane**

**Interview with
Melissa Kearney**

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DIRECTOR OF RESEARCH

Kartik Athreya

DIRECTOR OF PUBLICATIONS

Renee Haltom

EDITOR

David A. Price

MANAGING EDITOR

Lisa Davis

STAFF WRITERS

Tim Sablik

Matthew Wells

EDITORIAL ASSOCIATE

Katrina Mullen

CONTRIBUTORS

Stephanie Norris

David Ramachandran

Sam Louis Taylor

Laura Ullrich

Sonya Ravindranath Waddell

DESIGN

Janin/Cliff Design, Inc.

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of Richmond

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www.richmondfed.org

www.twitter.com/RichFedResearch

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Cover Image: The clean room at Wolfspeed's silicon carbide fabrication facility in Marcy, N.Y. Photo by Heather Ainsworth, Courtesy of Wolfspeed.



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Bringing Talent to Small Towns

Over the last few decades, we've seen small towns struggle, particularly those that lost manufacturers, which had historically helped build communities, employ residents, and forge local identities. As a natural reaction, economic development in small-town America has often focused on replacing those big employers. These efforts attracted investment, but success wasn't easy.

In the last several years, the focus of economic development efforts has shifted. We saw it nationally with Amazon's HQ2 decision a few years ago. When Northern Virginia won this very competitive contest, the determining factor didn't seem to be the direct economic incentives but instead the state's workforce and commitment to develop an even stronger employee pipeline.

The same criteria are coming to smaller towns. As I talk to employers considering expansions and as I talk to community leaders trying to recruit firms, there's an increasing focus on talent. I hear it most clearly in reshoring conversations; businesses question how they could relocate when they don't have confidence they will find the necessary workers.

The importance of a reliable labor supply isn't news to small towns. But, especially now that the pandemic has tightened the labor market further, smaller communities are going to have to figure out how to put their best foot forward. To win, small towns are going to have to up their games on attracting, developing, and retaining talent.

Small towns will need to recruit talent the way they recruit companies, which means pursuing four strategies.

First, just as prospective employers need to hear a compelling pitch, so do prospective employees — and their spouses. Small towns need to tell their stories. The last few years opened a



door. Workers seem to increasingly value what small towns offer: space, affordability, the outdoors. And of course, remote work frees workers to live anywhere. But open doors don't guarantee new workers will walk in. Each town is now competing with every other small town. That's where the story comes in.

These stories almost always start with a sense of place, and there are a lot of options. In Lake City, S.C., for example, a nine-day art festival and competition has expanded the creative economy and brought crowds to town. With displays in a wide array of local venues, the town isn't just showcasing art — it's showcasing what Lake City has to offer.

Other towns create a sense of place by rehabilitating their downtowns and bringing in shopping and restaurants. Danville, here in Virginia, comes to mind. It has developed its riverfront, building apartments with nearby dining establishments and creating a lively, downtown feel.

Towns can also leverage nearby amenities. As Fayetteville, W.Va., transitioned away from coal, it turned to outdoor recreation, which in turn

attracted entrepreneurial types who then created an entrepreneurial culture that persisted.

If a town can't tell a story on its own, we are seeing regions work together to bundle one. Southwest Virginia has the Crooked Road heritage music trail, the historic Barter Theatre in Abingdon, the Spearhead Trails for adventure, and wineries, breweries, and shopping. In southern West Virginia, we've seen similar efforts built around the Hatfield-McCoy Trails.

These stories bring in new talent. They also help encourage kids to stay.

Second, just as recruiters make a move easy for businesses, small towns need to make moving easy for workers. In today's world, the ultimate barrier to moving is housing. Every town seeing success is experiencing this challenge. Simply put, the math isn't working to put new residents into affordable homes. We don't have enough supply. And building is getting ever more expensive with construction, interest, and labor costs rising.

Small towns face their own issues. Their housing stock is often older. Rough terrain and absentee landlords often inhibit construction. Developers may have better options elsewhere.

But can we change the math? If we can find the funding to create buildable sites for businesses, why can't we develop buildable homesites for developers? If cities can transform office space into apartments, why can't small towns tackle the barriers to repurposing their old commercial or municipal spaces into residences?

Carroll County, Va., did just that. Working with the Virginia Housing Development Authority and developer Landmark Asset Services, it transformed a historic high school into 51 affordable housing units. The county donated the school. Virginia Housing helped identify Landmark as a

willing developer and offered permanent financing at a below-market rate. Landmark brought its expertise in adaptive reuse and affordable housing development. Together, they made the math work.

Making moving easy also means ensuring access to high-speed, reliable broadband. We've talked about this for years, but the last three years really brought it home. Progress is coming, as the funds provided in the Infrastructure Investment and Jobs Act fully roll out. But the mere existence of funding is not enough — it needs to reach the communities in need.

Third, just as recruiters pay incentives to companies, small towns need to think through how to encourage talent to move and to work. West Virginia is actually testing out a pretty direct incentive. Through their Ascend West Virginia program, they are paying a select set of individuals to move to the state. The incentives include \$12,000 over the first two years, access to free coworking space, and free outdoor recreation and gear rental for a year. (See "Paid to Relocate," *Econ Focus*, Third Quarter 2022.)

And there are ways to motivate people to join their local workforce.

Let's start with child care. Finding and paying for high-quality child care can become so costly that it makes more sense for a parent to stay home. The United Way of Southwest Virginia has leveraged state and federal funding to expand access to affordable child care by creating a new facility, giving technical assistance to existing ones, and building up the sector's workforce — with the intent that local employers

will support these facilities over time. In West Virginia, the Chamber of Commerce worked to get legislation passed last year to provide a tax credit to businesses that create a child care facility on their premises.

Transportation is also a motivator to connect people to places of employment. It has attracted some controversy, but beach communities have transported workers into their markets for years. The city of Wilson, N.C., is trying a more tailored approach; it has partnered with Via Transportation to replace its traditional bus system with an on-demand microtransit service. (See "Public Transit Rides Out the Pandemic Storm," *Econ Focus*, First Quarter 2023.) This allows riders to get curb-to-curb rides for a low price, saving time and expanding access to those who did not previously live near a bus route. Approximately half the rides are to or from work.

Finally, just as towns must grow their own local entrepreneurs, they also need to grow their own workers. Education and connecting locals to jobs is an evergreen challenge. But we are seeing a lot of innovation in this arena.

GO TEC (which stands for Great Opportunities in Technology and Engineering Careers) is helping build a pipeline of talent for Virginia's strategic sectors. Hoping to spark early interest, the program exposes middle schoolers to various career pathways, such as robotics and health care, as well as industry jargon and relevant equipment. Once in high school, students have access to industry certification programs and may then pursue post-secondary degrees.

The STEM East Network in North Carolina is training the key influencers in youth's lives — educators — to understand the workforce needs of the region. The hope is they in turn will help students visualize what participating in the local labor market could be like.

The Surry-Yadkin Works partnership, also in North Carolina, allows high school students to intern at local companies and access resources at their local community college. Students earn a real wage, a transportation subsidy, work experience, and the opportunity to get college credit and industry-recognized credentials. Nearly 70 percent of participants continued to work on their internships after finishing the experience.

It's trendy to say that post-COVID-19, we are in a "new normal." But I really do think, when it comes to small-town economic development, that the ground has shifted. The focus that employers are placing on talent is palpable, and the places that can supply that talent will be the winners. The good news is that small towns offer a sense of place and community that many of today's workers want.



Tom Barkin
President and Chief Executive Officer

A longer version of this essay was delivered as an address to the Richmond Fed's Investing in Rural America Conference on April 12, 2023.

BY KATRINA MULLEN

New from the Richmond Fed's Regional Matters blog

Sonya Ravindranath Waddell. "Is There a Credit Crunch? A View From Fifth District Businesses."

The Fed's Senior Loan Officer Opinion Survey, released in April, indicated tighter loan standards across loan types and firm sizes. Richmond Fed researchers followed up on these findings, seeking information from Fifth District businesses via the Richmond Fed manufacturing and service sector surveys to determine the extent to which Fifth District firms were finding it difficult to obtain credit. Most firms responding to the survey had not applied for new credit, nor did they plan to this year; the main reason reported for this was that they did not need the credit. Of the firms that did apply, nearly 60 percent said credit was either somewhat or much more difficult to obtain. The recurring response was lending standards had become more stringent, but some also felt banks did not want to lend.

Surekha Carpenter and Hailey Phelps. "CDFIs on the Prize: Recent Federal Awards for Community Development Financial Institutions."

The mission of community development financial institutions (CDFIs) is to expand access to financial services for low-income and other underserved populations. As a result of the COVID-19 pandemic, Congress has appropriated \$12 billion through three programs: the CDFI Rapid Response Program (RRP), the Emergency Capital Investment Program (ECIP), and the Equitable Recovery Program (ERP). In the Fifth District, of the certified CDFIs that applied, 75 percent received funding from RRP and 42 percent from ERP. Among certified depository CDFIs — that is, credit unions, banks, and holding companies — 40 percent received funding from ECIP.

Stephanie Norris. "Updates to Rural and Urban Areas Based on the 2020 Census."

The U.S. Census Bureau's 2020 urban boundaries, released earlier this year, changed the urban-rural distribution in the Fifth District. Compared to the 2010 census, the new criteria for urban areas replaced the existing threshold based on population density with one based on housing density. It also increased the population threshold and eliminated the two subcategories of urban areas. With the changes to housing and population requirements for urban areas, the United States and the Fifth District have seen increases in their rural-designated populations. In the Fifth District,

51 counties that experienced an increase in the rural population also saw an increase in the urban population. For example, the rural population of Johnston County, N.C., increased by more than 26,000 people, while its urban population increased by more than 20,000 people.

Zach Edwards and Sonya Ravindranath Waddell. "The Fifth District Labor Market: Normalization or the Beginning of a Slowdown?"

In 2021 and 2022, employers were adding 500,000 jobs per month on average; in 2023, employers have added more than 300,000 jobs per month on average, indicating signs of slowing in hiring. The Richmond Fed manufacturing and service sector surveys use diffusion indexes (the share of firms in the past month that reported increased employment minus the share reporting decreased employment) to determine employment changes. This year, the share of firms with increased employment dropped to 15 percent, while the share with decreased employment rose to 15 percent. Nonetheless, firms said it was easier to find workers with the necessary skills, with indexes within pre-pandemic levels. The largest share of firms expected to increase headcount in operational roles, such as production, front-line work, and IT.

Stephanie Norris. "Households Confront the End of Pandemic-Era Assistance Programs."

When the COVID-19 pandemic began in March 2020, the federal government responded by expanding the Supplemental Nutrition Assistance Program (SNAP) and pausing federal student loan payments. One major change to SNAP, which supports low- and moderate-income (LMI) populations and those facing temporary economic hardship, was the addition of emergency allocations (EAs) or extra funds. As of March, 4.3 million SNAP participants and 4.4 million federal student loan borrowers benefitted from these programs in the Fifth District. The EAs ended in February, and federal student loans are scheduled to resume this fall. These changes are expected to add economic challenges, particularly among LMI households. At the same time, a cost-of-living adjustment increased SNAP payments in late 2022, and the Biden administration has announced that student loan borrowers will not be delinquent or reported to credit bureaus for nonpayment through September 2024. **EF**



Semiconductor Industrial Policy and the Fifth District

Will the recently enacted
CHIPS Act bring major
growth to the region's
semiconductor industry?

BY MATTHEW WELLS

Chip maker Wolfspeed recently announced that it would bring the largest semiconductor materials facility in the world to Chatham County, N.C.

Chatham County, N.C., is a long way from Silicon Valley. Around 76,000 residents live here among the rolling hills of the Piedmont region, nestled between the Atlantic Plain and the Appalachian Mountains. Farming and mining have been the primary industries for generations. The county is about 2,700 miles away from Silicon Valley, the Bay Area region widely acknowledged as the world's semiconductor innovation hub for over half a century. But despite these differences in geography and reputation, in September 2022, Wolfspeed, a firm originally founded in North Carolina in 1987 as a developer and maker of LEDs, announced that Chatham County would be the home of a new \$5 billion semiconductor materials facility — the largest in the world and one that would bring 1,800 high-tech jobs by the end of the decade on top of the 3,000 the company already has at its existing facility in Durham, about 50 miles away.

Almost all modern technologies, from smartphones and washing machines to the electrical grid and defense systems, depend on semiconductors to function. As recently as the 1990s, the United States was the dominant producer of semiconductors, accounting for 37 percent of the global market. That number has shrunk to only 12 percent, and China now leads with 24 percent of the market. Tension between the two countries, however, has raised concerns among policymakers that in a geopolitical crisis, the United States may not have access to these crucial products, kneecapping its high-tech manufacturing ability. Further, Taiwan, which China regards

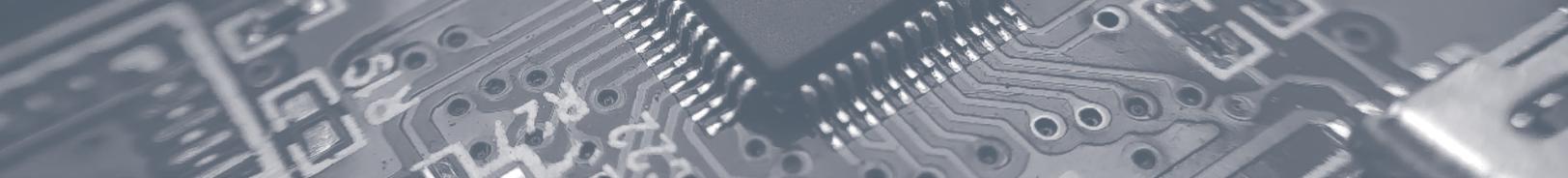
as a renegade province, has another 21 percent of the global market, and should China attempt to reassert control there, access to that source might also be in jeopardy.

The COVID-19 pandemic also made clear that international supply chains can rupture for extended periods, contributing to economic instability. To hedge against these potential threats to the nation's security and prosperity, federal policymakers have adopted an industrial policy to reestablish a domestic semiconductor manufacturing base. The centerpiece of this targeted intervention, the bipartisan CHIPS and Science Act, was passed by Congress and signed into law by President Joe Biden last summer. With \$52.7 billion for semiconductor research and development, manufacturing, and workforce development (including \$39 billion in subsidies for computer chip makers and a 25 percent investment tax credit for the establishment of chip plants), and \$200 billion for research and manufacturing in technologies such as artificial intelligence, robotics, and quantum computing, it represents an unparalleled federal initiative to expand the nation's semiconductor industry.

THE CHIPS ACT AS "PLACE-BASED" INDUSTRIAL POLICY

The original semiconductor industry that emerged in Silicon Valley in the 1960s wasn't the product of industrial policy. Many of the firms were spinoffs, or spinoffs of spinoffs, of Fairchild Semiconductor, which was founded by a group of scientists who previously worked for William Shockley,

IMAGE: COURTESY OF WOLFSPEED



the leader of the Bell Labs group that invented the transistor. Local talent also was abundant in the area, as Stanford University's electrical engineering department had already attracted and encouraged the development of high-tech manufacturing, particularly in the areas of vacuum tubes and microwave electronics. To be sure, many of these firms benefitted from government contracts, but the industry's overall development and growth was not the result of any "place-based" policy, that is, a government intervention targeted to aid a region's or community's economy.

That was then. Today, private manufacturing firms are applying for the billions of dollars in federal funding and tax breaks to subsidize their operations under the CHIPS Act. Also, while the legislation is intended to boost the broader economy and secure the country's semiconductor supply lines, it also includes a crucial "place-based" element: the "Regional Technology and Innovation Hubs" grant program, or Tech Hubs. Instead of markets allocating capital and financing to sectors and places, this \$10 billion program will use a competitive grant process to direct federal dollars to at least 20 selected regions across the country where the relevant industries are located or plan to be located. According to the U.S. Department of Commerce's Economic Development Administration, which runs the program, Tech Hubs "aims to invest in regions with the assets, resources, capacity, and potential to become globally competitive, within approximately ten years, in the technologies and industries of the future." A 2022 report by the Brookings Institution notes that while "such programs may aim to boost the broader economy, they do it by directly helping local economies thrive — engaging with the local needs of individuals and industries and leveraging the 'bottom-up' energy of local talent, networks, clusters, institutions, and ecosystems." In other words, the CHIPS Act treats local and regional economic development as a key part in the rebuilding of a domestic semiconductor industry.

IN NORTH CAROLINA, A LEGACY EVOLVES

Realizing the value of tech-based economic development, the North Carolina legislature created and funded the nonprofit Microelectronics Center of North Carolina (MCNC) in the early 1980s to support the work coming out of universities such as North Carolina State University in Raleigh, Duke University in Durham, the University of North Carolina at Chapel Hill, North Carolina A&T State University in Greensboro, and the University of North Carolina at Charlotte. Also, MCNC utilized the National Cooperative Research Act established by Congress to provide antitrust protection for corporations that wished to collaborate with other semiconductor leaders to develop next generation design and fabrication technology. MCNC served as a network where researchers from across these universities could collaborate on innovations that would make North Carolina a key location for the American semiconductor industry. Holt Anderson was the founding secretary/treasurer and director of administration of MCNC from 1981 to 1995. He says that

it was a "center point for developing a policy foundation and standards for collaboration, which became very important as we moved forward with bringing in industry."

The effort paid dividends at the time, as Mitsubishi Electric Semiconductor chose northern Durham County as its American headquarters and wafer fab soon afterward. ("Fab" is short for fabrication plant, where raw silicon wafers are turned into integrated circuits.) General Electric Semiconductor soon followed, and then Silicon Valley firm Sanmina Corp., rounding out this initial industry presence in the state.

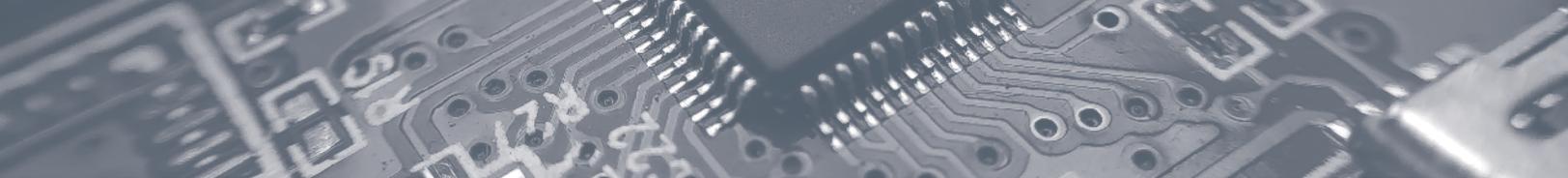
As with many industries, however, it experienced ebbs and flows over the years. In the 2000s, life sciences and biopharmaceuticals became the focus of research and development investment in North Carolina, while the semiconductor sector declined as the industry migrated overseas. But during that time, the state's universities still played an important role in maintaining a professional infrastructure that has been crucial to the region's semiconductor resurgence, as they have continued to produce engineers and conduct basic research that has led to ongoing technological innovations by Wolfspeed, which was originally a spinoff from North Carolina State University, and the other semiconductor firms spread across the state, including Qorvo Inc. in Greensboro and Triad Semiconductor in Winston-Salem.

Since 2002, for example, Duke University has run the Shared Materials Instrumentation Facility, which promotes collaboration in semiconductor development and manufacturing across universities, government laboratories, and industry. Much of its recent focus has been on identifying and testing new, more efficient materials and blending them with existing semiconductor architecture and technology.

North Carolina State University also has identified a need to integrate emerging technologies with what is currently in use. Along with Purdue University in Indiana, it has received funding from the National Science Foundation to develop a proposal for the Center for Interface Science for Emerging Devices & Systems, which would focus on research aimed at ensuring cutting-edge materials are able to work well with each other, as well as with existing parts of semiconductor devices used in the fields of energy, communications, and medicine.

State and local governments have also been active participants in attracting firms to the region, as they see significant upside in this form of economic development — specifically, good, high-paying jobs — when they bring tech firms into their communities. Attracting those firms isn't cheap, however. For example, when deciding between Chatham County and Marcy, N.Y. (where it has a second production facility) for its new manufacturing location, Wolfspeed received state and local tax incentives that totaled about \$1 billion, including over \$159 million from the state and \$615 million from Chatham County.

Additionally, the state is building five advanced manufacturing megasites that it anticipates will host companies producing semiconductors or their component parts, as well as firms that will use semiconductors in



the products they make. This effort is managed by the Economic Development Partnership of North Carolina, a nonprofit public-private partnership under contract with the state's Department of Commerce. Two such locations are in Chatham County: Triangle Innovation Point (TIP) and Chatham-Siler City Advanced Manufacturing Site, which will host the new Wolfspeed facility. Officials have stated that while their names are confidential for now, there are about a dozen firms considering locating in these campuses.

Three companies that are potential purchasers of those semiconductors have already announced that they will be moving into the state. Toyota is investing \$3.4 billion in an electric battery plant at the state's Greensboro-Randolph megasite, creating 2,100 jobs. Vietnamese car company VinFast will also be establishing the state's first automobile assembly plant, a \$4 billion investment, at TIP, adding approximately another 7,500 jobs. As demand for electric vehicles increases, manufacturers like VinFast are looking for the most powerful and efficient semiconductors, and Wolfspeed builds chips from silicon carbide, which, according to the firm's internal studies, produces a 13-1 energy savings in an electric vehicle's semiconductors, compared to traditional semiconductors made from silicon. And Boom Supersonic, which builds supersonic airliners for commercial service, broke ground in 2022 on a manufacturing facility in Greensboro.

CHALLENGES TO BUILDING A HIGH-TECH WORKFORCE

When reflecting on why North Carolina's semiconductor industry has enjoyed such tremendous growth in recent years, Tom White, the director of the Economic Development Partnership at North Carolina State University, says, "With the onshoring and reshoring of semiconductors, we've been there, done that. We have that nucleus of higher education. We know how to train the workforce for these skill sets."

North Carolina may be an outlier when it comes to the presence of a skilled semiconductor workforce as there is a nationwide dearth of both the engineers to design the semiconductors and the technicians to build them. Due to intense competition from tech giants like Google and Meta (formerly Facebook) for STEM graduates and a lack of training programs for technicians, McKinsey and Co. has estimated that the country may be short 300,000 engineers and 90,000 skilled semiconductor technicians by 2030. Further complicating the situation is that the industry cannot necessarily rely on the immigration of overseas talent to make up for the lack of a homegrown workforce, as those policy discussions are subsumed by a thorny political debate over the country's broader immigration system.

With these difficulties in mind, many of the initiatives for bringing in new firms prioritize workforce development. Like North Carolina, Virginia also has a semiconductor manufacturing legacy that it is seeking to energize. Richmond was the North American base of operations for

German firm Qimonda, which manufactured semiconductors for computer memory and data storage technology. At its height, Qimonda's Richmond factory employed 2,500 workers. Much of its production became obsolete, however, and it closed its doors in 2009. More recently, Micron Technology has invested heavily in a Manassas, Va.-based plant.

To build its production capability, the state recently established the Virginia Alliance for Semiconductor Technology (VAST), which is led by Virginia Tech and its top-ranked computer engineering program. VAST also incorporates several of Virginia's other universities, including the University of Virginia, Virginia Commonwealth University, Norfolk State University, and George Mason University, and partners with community colleges across the state. A key element of that collaborative effort is the development of a new curriculum for undergraduate STEM degrees; the state expects to graduate 5,000 students from those programs over the next three years. As a part of that effort, Virginia Tech is building a \$1 billion, 1 million-square-foot Innovation Campus in Alexandria that will focus on quantum information sciences, intelligent interfaces, artificial intelligence, and machine learning. Its Chip-Scale Integration program, one of 14 majors within the umbrellas of electrical and computer engineering at the school, was the result of a Revolutionizing Engineering Departments grant from the National Science Foundation.

In their efforts to recruit semiconductor firms to set up shop, North Carolina and Virginia tout their colleges and universities as both key components of talent pipelines that they can tap and sources of research and development that will drive future innovations in the industry. But it isn't just the high-profile research universities that are taking part. VAST also is working with community colleges on creating an adult learning program aimed at veterans and traditionally underserved communities: Fast Track to Semiconductor Careers. It will offer three 10-week certificate programs on different elements of semiconductor manufacturing that plan to train a total of 600 learners, award 550 certificates, and create as many as 100 internships over two years. Similarly, in North Carolina, Nash Community College in the city of Rocky Mount recently launched a 96-hour certification course geared to students without a traditional four-year degree who are seeking a career in chip manufacturing.

Wolfspeed CEO Gregg Lowe said that the presence of North Carolina A&T State University in Greensboro also "gave a little bit of a tipping edge" to the state over New York when deciding to build its new facility in Chatham County. Wolfspeed is in the midst of a five-year commitment it made in 2020 to donate \$4 million to the historically Black university for the creation of the Wolfspeed Endowed Scholars Program, and now the company and the university are collaborating on the development of undergraduate and graduate training and credential programs, as well as professional development programs for workers already working in semiconductor manufacturing.

IS THE CHIPS ACT WORTH THE PRICE?

Semiconductor chip fabs are sprouting all over the country. Large firms such as Intel, GlobalFoundries, TSMC, and Samsung Foundry are planning to spend over \$70 billion by 2025 building new chip fabs in Arizona, Texas, New York, and elsewhere, and private investments over the next decade may reach as high as \$200 billion. Clearly, a lot is also happening in the Fifth District when it comes to the semiconductor ecosystem in terms of firm activity and workforce development. All this raises an important question: If the market seems to believe that a domestic semiconductor industry is worth building, what is the need for the CHIPS Act?

But for proponents of the law, even though the CHIPS Act's primary goal is the rebuilding of a domestic industry, the process of getting to that goal includes other objectives that are geared to regional economic development. To be sure, areas of North Carolina and Virginia have experienced tremendous growth, both in their semiconductor industries and in other sectors of their economies. But plenty of areas have not — and supporters contend that the programs will bring opportunity to those communities.

“We had a recession in North Carolina before the Great Recession, where we lost tens of thousands of jobs in textiles, furniture, and tobacco,” says Tom White of North Carolina State University. “If you can encourage capital investment and job creation in more rural and micropolitan markets, I think it would help those markets recover. We’ve got capacity, and we thankfully are indeed starting to see that capital investment and job generation.”

John Hardin is the executive director of the North Carolina Department of Commerce's Office of Science, Technology, and Innovation, which provides support to the communities across the state considering applying for Tech Hubs designation. He echoes this sentiment. “There are a lot of communities out there that have a lot of pieces in place, but it takes a lot of time and a lot of money to reorient their economies,” he notes when describing the purpose of the Tech Hubs component of the CHIPS Act. “It’s helping communities that are on the cusp actually achieve their potential.”

Determining whether these investments bring about the types of change that drive them can be tricky, however. In particular, identifying what really happened is not straightforward, according to Richmond Fed senior economist Santiago Pinto. Pinto offers the example of a community receiving significant investment in one year that results

in some measurable change, perhaps an overall reduction in the amount of people living in poverty. That reduction, he suggests, could come from an actual increase in wages for those living there, or it could be that those investments attracted new, better paid workers who drove out the existing poorer population. To accurately determine what is happening in these communities that receive CHIPS funding, “we need to have good policy evaluation and a clear understanding of what the policy should accomplish,” he says.

The programs in the CHIPS Act that provide subsidies to firms for the construction of new production facilities have requirements that the firms make investments in the people and communities where they are located. To be competitive, applying firms must, among other things, explain how they plan to hire, train, or retain workers; provide transportation and housing assistance as well as child care for facility workers and builders; and consult and coordinate with a range of partners when it comes to establishing pay and benefit structures.

These provisions are problematic, according to opponents of the policy. Scott Lincicome of the libertarian CATO Institute, for example, has argued that such regulations are counterproductive and “impose additional costs on subsidy recipients, potentially diverting finite resources — money, time, labor, etc. — away from producing more chips onshore and toward these other requirements.” Goldman Sachs has suggested that the CHIPS Act will only boost U.S. global market share by less than 1 percent because it “costs 44% more to build and run a new fab in the U.S. than in Taiwan.”

Lincicome has argued that, in general, industrial policies in the United States have rarely achieved their stated goals — even when motivated by national security concerns — because of the increased costs associated with domestic production. “Just doing something does not necessarily mean that you’re going to be in a stronger position than if you had a little more faith in markets and did what we would call horizontal policies,” he contended in an American Enterprise Institute podcast. “In other words, improving the tax environment, immigration, basic research, etc., instead of cherry-picking specific industries because of these perceived threats.”

For proponents of the law, semiconductors are a valuable enough cherry to justify billions in federal aid and a higher level of federal involvement. What is clear is that the CHIPS Act is as ambitious as it is controversial, both in terms of its desired end of a strong domestically based semiconductor industry and the broad economic development it is meant to create along the way. **EF**

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BY DAVID RAMACHANDRAN

Adapting Sovereign Debt to Climate Change

Toan Phan and Felipe F. Schwartzman. “Climate Defaults and Financial Adaptation.” Federal Reserve Bank of Richmond Working Paper No 23-06, March 2023.

As stronger hurricanes become more common due to climate change, understanding what factors drive recovery is increasingly important. How quickly a country recovers is influenced by its ability to attract foreign capital — making recovery challenging for emerging economies, as investors are more reluctant to invest in countries that are more likely to default on loans. The challenge for these countries to secure capital suggests an area for financial instruments to be adapted to better suit their needs. To gain a clearer understanding of the interplay between climate-related disasters and these financial challenges, Richmond Fed economists Toan Phan and Felipe Schwartzman created a model to quantify the welfare implications of a change in disaster risks and the benefits of financial adaptation strategies.

Phan and Schwartzman used a modified version of a growth model of a small open economy. They based the risk of a climate-related disaster on empirical observations of disasters. In the model, the risk of an affected country defaulting is determined by the relationship between its debt-to-GDP ratio and the loss in output it suffers due to the disaster. The model includes variables both for whether a disaster occurs in each period and for how strong the disaster is, allowing variation in frequency and strength of the disaster. The country can borrow from international lenders by issuing one-period bonds that are repaid the following period unless the country defaults.

The authors found that the model generates results that are in line with prior empirical observations of

emerging economies. For example, the model demonstrates how severe weather can cause long-lasting adverse macroeconomic effects that are worse and longer lasting in countries with less financial development. Specifically, a disaster destroying a country’s capital increases the risk that the country will default, which forces the country to reduce its borrowing, resulting in lowered output and investment. That lowered borrowing capacity results in higher borrowing costs, creating a feedback loop that continually reduces a country’s capital post-disaster.

Using prior research from both the climate science literature and economics, the authors set up the disaster shock variable in the model to represent hurricanes. Mexico was chosen as the emerging economy that is subjected to the disaster risk as its business cycles are well studied in macroeconomics and the country routinely faces hurricanes. Under this calibration, the authors found that after a hurricane strike, the feedback loop described above can result in a significant delay in recovery by at least two decades.

By adjusting the variables to simulate more frequent and severe hurricanes, in line with current climatology predictions, the authors estimated the losses resulting from such hurricanes. Specifically, the authors utilized the well-known predictions published by several MIT researchers in 2008 that hurricane activity in the Atlantic is likely to increase 10 percent by the end of the century. Under those conditions, Phan and Schwartzman found, the welfare loss would be equivalent to a permanent drop in consumption of about 1 percent.

To understand the potential for financial adaptation to mitigate these effects, the authors examined two financial instruments: disaster

insurance and catastrophe bonds. Disaster insurance aims to smooth consumption and net worth across disaster and non-disaster periods, allowing the country to quickly rebuild its capital. The benefits are limited, however, by the country’s already-constrained debt capacity from which it must pay insurance premiums in non-disaster periods. Thus, the insurance results in a slight increase in wealth and capital in the long run, but not enough to offset the losses from climate change.

Catastrophe bonds are like regular short-term bonds where the issuer repays the principal with interest until it reaches maturity, except that in the event of catastrophe, the obligation is deferred or forgiven. Thus, by issuing these bonds, the country can decrease its debt burden in times of disaster, reducing its default risk. Insurance, on the other hand, does not improve a country’s default risk, as foreign creditors are generally not able to seize insurance payouts in the event of default.

By integrating both financial instruments into the model, the authors found that each one has its unique benefits. More specifically, insurance provides a country with resources to speed up its recovery but does not reduce default risk, while catastrophe bonds help a country avoid defaulting in a state of disaster but do not provide insurance that can be applied directly to disaster recovery. Thus, the two instruments should be seen as complements rather than substitutes. Used together, the authors estimated, about a quarter of the lost welfare from the increased hurricane risk can be recovered.

Phan and Schwartzman expressed hope that their research will help policymakers better understand the interplay between climate change and financial risks. **EF**

BY CHARLES GERENA

Talking Technology-Enabled Disruption

Understanding the economic effects of technological change — and of the world-changing disruptions that new technologies may bring about — is important for central bankers. Maintaining price stability means paying attention to how technology empowers buyers to shop for lower prices, for example, adding pressure on the margins of sellers. Maintaining maximum employment means closely watching how technology restructures or eliminates jobs, adding pressure on the income gains and productivity growth of workers. Technology-enabled disruption also influences business investment: Companies facing one or more disruptive competitors may be moved to invest more — or become more cautious about expanding their capacity and investing in major capital projects.

That's why the Richmond Fed, the Atlanta Fed, and the Dallas Fed teamed up to organize the fifth Technology-Enabled Disruption Conference, held at the Richmond Fed in May.

"Because technology is such a fundamental driver of business cycles and long-run growth, policymakers like the Fed surely want to pay great attention and keep pace with the market development as well as research progress in this space," notes Zhu Wang, vice president for research in financial and payments systems at the Richmond Fed. Wang has been involved in the planning process for the last two conferences along with Kartik Athreya, Richmond's director of research; Jonathan Willis, a vice president and senior economist at the Atlanta Fed; and Mark Wynne, vice president and associate director of research at the Dallas Fed.

Robert Kaplan, president of the Dallas Fed from 2015 to 2021, recognized the importance of understanding technology-enabled disruption and spearheaded the organization of a conference to explore the topic in 2018. "Before joining the Fed, Kaplan had been a professor at Harvard Business School, where they like to talk about disruption a lot," Wynne recalls. "I think he talked about the issue a lot with several of his colleagues at the FOMC."

According to Wynne, the typical Fed conference brings together academic economists and researchers from the Reserve Banks and the Board of Governors to share their latest work, "usually in technical language that only other economists can understand." The Technology-Enabled Disruption Conference, which came to be known as the TED Conference, would be different. "Kaplan thought that there would be value in having economists hear from business leaders on how disruption plays out in the real world. 'Disruption'

is a term that is a little bit alien to most academic economists."

The list of speakers at the first TED Conference in May 2018 achieved that mix. Executives from AT&T, J.C. Penney, and Southern Co. shared their perspectives along with economists and presidents from six Reserve Banks and experts from Harvard University, MIT, New York University, Stanford University, the University of Chicago, and the University of Maryland. In addition, conference attendees

heard from educators, including from two community colleges and a historically Black Methodist college, who were involved in training workers.

That conference was well received, prompting the Richmond Fed to join the Dallas Fed and the Atlanta Fed in organizing another one the following year. Other than taking a break in 2020 due to the COVID-19 pandemic, the three Reserve Banks have presented the conference ever since. The most recent edition was hosted in Richmond for the first time in May 2023, with discussions of energy technologies, AI, and technology investment decisions, among other topics.

The focus of the TED Conference has evolved in several ways in recent years, according to Wang. The first change has been "tying the conference more closely with ongoing economic hotspots," he says. "Reflected in the conference

titles, the 2022 conference focused on disruptions from the pandemic and the 2023 conference shifted to market and policy uncertainties in the post-pandemic world."

The second change has been broadening the conference theme beyond the monetary policy implications of technology-enabled disruption. "In the 2022 conference, we covered supply chain disruptions and also introduced the discussions of technology-enabled disruption in the payment and credit sector," Wang notes. "In the 2023 conference, to keep up with market developments, we covered the latest disruptions associated with the energy transition and the rise of AI."

What hasn't changed about the TED Conference is the objective of bringing together experts from different backgrounds to cover different angles of technology-enabled disruption. "Business leaders have their feet on the ground, and they know the market pulse well," says Wang. "On the other hand, academic researchers have systematic research frameworks and tools that are good at analyzing big-picture issues. Such a combination is very unique and valuable." **EF**

"Business leaders have their feet on the ground, and they know the market pulse well. Academic researchers have systematic research frameworks and tools that are good at analyzing big-picture issues."

BY AAYUSH SINGH

The Rise and Fall of Company Towns

They're long gone, but they have much to tell about America's economic history

In the heart of Appalachia, just up the road from vast forestry and national parks, lies the town of Gary, W.Va. Built at the turn of the 20th century, Gary and its surrounding region was blessed by geography; the town sat on valuable coal fields and was on the route of a major rail line. Its creation was no accident: U.S. Steel, the brainchild of J.P. Morgan and Andrew Carnegie, needed the coal in the area to supply its blast furnaces. The gargantuan corporation owned and operated the city — it was named after Judge Elbert Gary, U.S. Steel's chairman of the board — and it was the typical company town. The company owned the factory, the houses, the schools, and the government.

For a while, business was booming. The area was once so prosperous that in the early 1900s, the neighboring town of Bramwell had the highest per capita income in the United States. Fourteen millionaires reportedly lived there, building lavish mansions that were a testament to the fact that coal was king.

But by the midway point of the century, things had taken a dramatic turn. Employment fell, and Gary had become such a symbol of blight that then-Senator John F. Kennedy visited the town during his presidential campaign, vowing that help was on the way. Once inaugurated, Kennedy's first executive order established the modern food stamp program, and its first recipients were residents of McDowell County, home to Gary.

The rise and fall of Gary — and that of company towns across the country — mirrors the arc of the nation's economy. From the textile mills of the early 1800s to the coal mines of the 20th century to the manufacturing hubs that defined America's industrial prowess, the story of the United States can be

told through the company town. It is a tale of abundance and abandonment, boom and bust, plenty and poverty.

THE EARLY COMPANY TOWNS

The first company towns were primarily textile mills in New England, reflecting one of the dominant sectors of the world economy at the time (it was just a few years earlier that Eli Whitney had invented the cotton gin). The deliberate nature with which these all-encompassing locales were built — Pierre L'Enfant, the famous engineer who planned Washington, D.C., was also involved in building one of the first company towns — was a direct response to the perceived squalor of industrialized England, which, the philosopher Friedrich Engels wrote, consisted of “filth, ruin, and uninhabitableness.” Ambitious and grandiose, L'Enfant's plans included factories in the center of a bustling city, with hundreds of diagonal roads, canals, and aqueducts decorating the scenery and providing transportation.

Although these manufacturing towns may seem like the quintessential representation of the American industrial age, their early creation was subject to fierce debate. As UC Berkeley architecture historian Margaret Crawford noted in her 1996 book *Building the Workingman's Paradise*, the conversation about company towns at the time echoed the two sides in the debate over industrialization: one arguing for market-driven growth, and the other raising social concerns about how the manufacturing economy would warp cultural norms, the class system, and democracy itself.

Perhaps the most famous example of the textile company town is Lowell, Mass. — the nation's “first large-scale

planned industrial community,” as business writer Hardy Green put it in his 2012 book, *The Company Town*. Lowell's landscape marked a new industrial reality, a far cry from the picturesque tableaux Pierre L'Enfant had in mind. As Crawford wrote, the layout of the settlement resembled the factory hierarchy, with housing for executives located close to the town square and boardinghouses for workers located near the factory. “The rigid geometry and tight spacing echo the increasing regularity of the textile production process,” Crawford explained.

Built by the Boston Manufacturing Co., Lowell was immensely profitable and became famous for employing young women (known as the “Lowell Girls”). Because the region was fairly remote at the time, laborers were recruited from a wide swath of the country. This became common practice for company towns; there are significant startup costs associated with building a city from scratch, and building housing is chief among them. Workers who weren't from the area would have to rent from the company, thus allowing it to recoup some of its initial cost. Once its laborers were on the premises, the Boston Manufacturing Co. kept a watchful eye on them, a prospect made easier because its workers were also its tenants. Such paternalistic regulations included mandatory church attendance, the prohibition of alcohol, and even a ban on dance classes. This moral policing defined a new social contract between employer and employee. Crawford argued that this corporate paternalism arose out of “the sagacity of self-interest.” Employers believed that curtailing workers' perceived excesses would stop the kind of unruliness that would serve as kindling for labor protest. Yet in a theme that would be



Children play outside of their homes in Gary, W.Va., in August 1946. The U.S. Coal and Coke Company (a subsidiary of U.S. Steel) operated a sprawling coal mining complex and built several company towns in McDowell County.

repeated in nearly every other company town, the Boston Manufacturing Co. was unsuccessful: Wage cuts in 1834 and 1836 led to work stoppages, with female workers petitioning the state-house for a 10-hour workday.

Eventually, prevailing economic conditions came for Lowell. Outside competition, overproduction, and the onset of the Civil War led to 10,000 workers in Lowell losing their jobs. The mills would operate into the 20th century, but the Boston Manufacturing Co.'s dominance was long gone. With it came the unraveling of the company town. The company dropped requirements like church attendance and the mandate that workers had to live in employer-owned houses. Lowell's story resembles what can be called the life cycle of a company town: early success, followed by protests from workers, and later, financial troubles that render the city unrecognizable.

THE HEYDAY OF THE COMPANY TOWN

As the structure of the American economy changed — with industries like coal and steel taking a greater share

and textiles' importance dwindling — so too did the company town. Many of the company towns that popped up in the late 1800s were examples of what Green called “industrial satellite towns” that were built close to natural resources. Gary, W.Va. was one such town.

It was a time of change in the economy, with railroads, steel, and coal forming what Louisiana State University historian Ronald Garay called an “industrial triad” in his book *U.S. Steel and Gary, West Virginia*. Coal was necessary for the manufacture of steel, which in turn was necessary to build the railroads that connected the continent. This trinity came to dominate the American economy for a time — from 1850 to 1890, consumption of coal doubled every decade — and was responsible for the birth of Gary.

Like Lowell, Gary had ornate houses for its engineers and superintendent — some even had six bedrooms — while laborers lived in rows of tightly packed dwellings. But this was the era of industrial paternalism, sometimes called welfare capitalism, in which businesses sought to provide additional benefits to their employees. In Gary, this meant that clubhouses, pool halls,

and bowling alleys were scattered around town, providing workers with sources of entertainment.

Nevertheless, the industrial satellite towns that powered the new economy were marked by a balance of power so tipped in favor of the employer that Green called them “exploitationvilles.” One reason was the nature of the work: Mines could not pop up just anywhere — they had to be where the resource was — and so these towns were often isolated and dispersed. As a result, unionization proved to be particularly difficult across the sector.

Yet Gary was also representative, in many ways, of company towns across the nation. For instance, there was no city government: Gary was run by the general superintendent of the U.S. Coal Co.; he was not elected, but he was the de facto mayor of the town, even possessing the power to evict residents. Indeed, many company towns in the United States remained unincorporated, run only by the employer. It is in this broader context that unions became essential to workers, for they served not only an economic purpose — in building worker power to counteract corporate demands — but a political one as well.

How else could workers restore some semblance of democracy to a town like Hershey, Pa., when its sole owner and operator was Milton Hershey?

Nevertheless, unionization was no straightforward process. According to Garay, the mines recruited Eastern European immigrants and “displaced Blacks from the American South,” groups that didn’t have much experience in the coal fields. As such, they were initially unorganized and received paltry wages. But unionization was also difficult because companies worked hard to prevent organizing. So effective were these regulations that Green called the closed company town the most effective mechanism to block worker action. Employers limited visits to the town, often restricting guests to only family of employees. They also exercised control over law enforcement; in Logan County, W.Va., for instance, the sheriff received money from mine owners in return for assaulting union sympathizers. Leases were contingent on employment, so the company could evict striking workers. “Even thinking about the United Mine Workers could result in eviction,” quips Drake University economist William Boal, who has extensively researched the economic history of company towns.

Regarding the difference in wages between unionized and nonunionized coal fields, Boal says, “The union wage differential was very large” by the mid-1920s — so much so that “employers would do anything to get rid of the union.” But for workers, there was no other choice. An injury could mean both the loss of one’s job and an eviction, a particularly cruel fate because dangerous working conditions were the norm. This extended beyond the inherently deadly work of mining: In Kannapolis, N.C., for example — once home to the world’s largest manufacturer of towels — brown lung was common. The seven-day workweek and 12-hour workday that was in place for much of Gary’s existence also significantly increased the possibility of injuries. Unions were

able to make a difference. Boal states that, at one point, “About three workers out of 1,000 were dying every year. That’s just astronomical compared to today.” Unions reduced that fatality rate “on the order of 30 percent.”

Despite these findings, there is substantial debate within the field of economics about just how much power company towns had. At first glance, it may be tempting to view company towns as the textbook example of a monopsony: a labor market with only one employer. Yet modern research paints a far more nuanced picture. In a 1995 article for the *RAND Journal of Economics*, Boal found that labor supply in West Virginia company towns was actually quite elastic, and that “miners moved relatively quickly in response to wage differences across employers.” He attributes this in part to railroads: “Even these remote mining towns have to have a way to get the product out, and that meant a railroad. And the railroads also had passenger cars.” This unravels one of the central pillars of monopsony models, for the available transportation means that workers can take their labor to another employer. “Wages were, by our current standards, quite low,” Boal explains, but “you don’t need monopsony to explain why.”

Monopoly, another economic concept which has historically been used to explain company housing and stores, has also begun to come under more scrutiny in recent years. Research from University of Arizona economist Price Fishback indicates that companies charged relatively competitive rents because workers could move between towns, and because workers demanded roughly a dollar increase in monthly wages for every dollar increase in monthly rents. Housing forms a large part of the argument in favor of company towns. As Fishback explained, company housing eliminated some market imperfections, because the employer had already surveyed the land and because the success of investments in the mine and in housing were “strongly intertwined.” In a similar

vein, prices at the company store were also far more competitive than they would have been if the store had monopoly power. Boal attributes this in part to the union demand that some noncompany stores be allowed in the area. The upshot is that while wages were low and conditions were poor, workers had a greater degree of mobility than many have believed.

RACE AND COMPANY TOWNS

It is no accident that the pinnacle of the company town — especially in the former Confederacy — came in the decades following the Civil War. If company towns were marked by conflicts between labor and capital, the post-Civil War economic order — defined by Jim Crow practices that sought to maintain a permanent underclass of Black workers — allowed companies to profit from lower-paid Black employees. In 1891, miners at the Tennessee Coal and Mining Co. went on strike, and the company responded by firing all of its employees. The reason it could do this? At the time, Tennessee — like many states — allowed convict leasing, a form of penal labor that mainly exploited Black men. The convicts replaced the miners, and the conflict eventually morphed into an armed uprising of displaced miners, leading to Tennessee becoming one of the first states to formally abolish convict leasing in 1896. In Clinchco, Va., a company town of Clinchfield Coal Co., much of the workforce was made up of Black laborers from outside the state. Many of them came to the coal town to flee coercive practices like sharecropping that developed in the aftermath of slavery. This was the first generation of Black freedmen in the American South, and their labor was crucial to the functioning of the company town.

In addition, company towns reflected the inequities of the time. Unequal pay between Black and White teachers in schools persisted, and company housing was often segregated. As Boal

explains, company housing would be built with three clusters: “native White people, European immigrants, and African Americans who had migrated up from the South.” Some towns went even further. In Kannapolis, the Cannon Mills Corp. expressly rejected Black labor, with one manager testifying, “Mill life is the only avenue open today to our poor whites.” It was not until a federal lawsuit in 1971 when Kannapolis agreed to stop discrimination in employment and housing.

Unionization, though historically fraught with racial conflicts, gradually became one avenue by which these racial disparities could be closed. In his chapter of the book *Blacks in Appalachia*, history professor Russell Parker wrote, “Unionization in the mid-1930’s reduced the vulnerability of black workers.” At a time when Black workers were often brought North to break strikes, labor solidarity was an important conduit for ethnic and racial solidarity. “The United Mine Workers journal for a while had a section in Italian and a section in Slovak,” Boal said, illustrating the importance unions put on cross-group understanding. “The United Mine Workers had many problems,” he continued, “but one of the things they did out of necessity was to try to get all these groups to work together.” When asked about race relations, one miner in Clinchco said in an interview in 1982, “Miners always get along together. Miners is a clan.”

THE FALL

By the mid-20th century, company towns were little more than a relic of a bygone era. A few factors contributed to their demise. Perhaps the biggest was technological developments like

the automobile, which significantly lessened transportation costs and allowed people to live further from where they work. It also gave workers more of an ability to move between towns in search of better conditions, in turn lessening companies’ ability to impose paternalistic regulations on their workforce.

It is also notable that the demise of the company town coincided with the passage of the New Deal. By significantly empowering workers, the New Deal rewrote the contract between capital and labor and made the existing business model of the company town untenable. For instance, the Cotton Textile Code, part of the National Industrial Recovery Act (NIRA), declared, “There is something feudal and repugnant to American principles in the practice of employer ownership of employee homes.” Although the NIRA was later struck down by the Supreme Court in 1935, the Wagner Act — passed later that same year — guaranteed the right of private sector employees to join unions and engage in collective bargaining. In the eight years after the law’s passage, union membership tripled. The more obscure Guffey-Vinson Coal Act protected miners’ right to organize, resulting in an increase in union membership and wages. “West Virginia in particular became 99.9 percent unionized” after New Deal legislation was passed, Boal says. As Crawford explained, after seeing unions amass more power, companies eventually started to sell off their houses, undoing the very fabric of the company town.

Beyond their immediate effects, these laws defined a new economic order where the government more vigorously protected workers’ rights

and where both workers and executives saw unionization as inevitable. As Boal states, “If the goal was to keep the union out, you couldn’t do that anymore after the New Deal.” The paternalistic contract between capital and labor written centuries ago in Lowell was gone, and with it, the company town was too.

Perhaps the final death knell for the company town was the changing structure of the American economy. Company towns reflected prevailing economic conditions for as long as they existed, and they were thus not immune to forces like deindustrialization and globalization that significantly reduced the United States’ manufacturing capacity. Sectors that saw their jobs shipped overseas were heavily represented in company towns; as such, their decline corresponded with the end of many company towns. From 1955 to 1960, coal production in Gary fell by 28 percent, and the workforce saw a 38 percent cut, in large part due to foreign competition.

In 1932, the writer William Faulkner set his novel *Light in August* in a company town, describing it as such: “All the men ... worked in the mill. ... In seven years more it would destroy all the timber within its reach. Then some of the machinery and most of the men who ran it... would be loaded onto freight cars and moved away ... [leaving a]... scene of profound and peaceful desolation. ...” Faulkner’s city is fictional, but his description is a fitting end to the story of the company town. Gary saw migration out of the city take place en masse in the 1960s, leaving schools and company stores closed. In 2020, its population sat at just 772. Less than a third of McDowell County residents are in the labor force. **EF**

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BY SAM LOUIS TAYLOR

The CFPB in the Supreme Court, Again

The Consumer Financial Protection Bureau (CFPB) has been a source of debate since its creation in the 2010 Dodd-Frank Act. These debates, which have spilled out from the legislative branch into the courts, have often centered around the relative political independence granted by the agency's unique structure. A case that is now before the U.S. Supreme Court, *CFPB v. Community Financial Services Association of America*, challenges the constitutionality of the CFPB's funding structure and has the potential to throw into question regulatory decisions made by the agency.

The CFPB is an independent agency within the Fed that is charged with implementing and enforcing consumer protection laws in the financial services sector. The Board of Governors does not influence the operations of the CFPB, and regulatory decisions by the CFPB can be overturned only by a two-thirds vote of the Financial Stability Oversight Council, or through a special resolution of Congress. The CFPB is funded not through the annual appropriations process but through transfers from the Fed as well as penalties collected from its enforcement actions. The law requires the Fed to transfer the amount requested by the agency based on the director's assessment of need, subject only to certain statutory caps. The Fed itself is a self-funded entity and does not receive appropriations from Congress for its normal operations. This, in addition to other protections of its funds, makes the CFPB "double-insulated" from the normal congressional funding process and is unique even among other independent, self-funded agencies.

The CFPB's structure was previously before the Supreme Court only a few years ago. In its 2020 ruling in *Seila Law v. CFPB*, the court overturned

restrictions limiting the president's ability to remove the director of the CFPB from office but did not address whether the agency is constitutional.

The new case originated from a challenge to an agency rule related to payday lending that eventually worked its way to the U.S. Court of Appeals for the 5th Circuit. Though the appeals court judges dismissed many of the arguments made by the plaintiffs, they did agree that the CFPB's funding structure violated the Appropriations Clause of the Constitution. The 5th Circuit cited this "power of the purse" as an expressed "restriction upon the disbursing authority of the Executive department." The court wrote that, though the Fed is accountable by statutory requirements that any excess annual earnings be sent to Treasury's General Fund, Congress expressly excluded the CFPB from such a requirement and, essentially, created a perpetual funding stream without appropriate oversight. Congress, the court wrote, violated the Appropriations Clause and the separation of powers by giving too much of its funding authority away to the CFPB. Because the payday rule in question was created and enforced using an unconstitutional funding scheme, the court found, the payday rule in question was invalid.

Now that this case is before the Supreme Court, members of Congress have chosen to weigh in. As expected, given the historical disagreements over the CFPB, support for the agency has largely fallen along partisan lines.

In a friend of the court brief, 132 Republicans, led by House Financial Services Committee Chair Patrick McHenry, R-N.C., and Senate Banking Committee Ranking Member Tim Scott, R-S.C., are supporting the 5th Circuit ruling, urging the Supreme Court to overturn the CFPB's funding

structure and bring the agency into the regular appropriations process. Difficult funding decisions, they state, are "a feature, not a bug, of Article I and the Appropriations Clause." They argue that the total structure of the CFPB "amount to a clear transfer of Congress's Appropriations Clause powers over the CFPB."

A brief filed by 144 Democrats presents a contrasting argument. Led by Senate Banking Committee Chair Sherrod Brown, D-Ohio, and House Financial Services Committee Ranking Member Maxine Waters, D-Calif., they argue that the funding structure of the CFPB is just a recent example of Congress' clear authority to structure appropriations as it sees fit to meet the needs of the nation, which in this case was a lack of robust consumer protection enforcement leading up to the 2008 financial crisis. "To solve these problems," the Democrats' brief argues, "Congress consolidated federal regulatory authority for certain consumer protection laws into a single new agency—the CFPB—and provided the CFPB with a steady but capped appropriation." They also argue that the CFPB is not free from congressional oversight, citing the requirements for "semiannual testimony before two Committees of Congress and extensive financial auditing and reporting."

The Supreme Court is scheduled to hear the case on Oct. 3. A decision overturning the agency's funding structure could trigger challenges to many current CFPB rules as well as an intense debate in Congress over the future of the agency. Upholding the agency's structure would be unlikely to cool Republican calls for legislative reforms. The CFPB has been a keen point of interest for Congress since its inception and is sure to remain so for the foreseeable future. **EF**

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Melissa Kearney

On the American fertility decline, the role of social norms, and the link between single-parent households and economic gaps

Over the past two decades, University of Maryland economist Melissa Kearney has been researching economic inequality and mobility, poverty, and children's well-being. She was first drawn to such topics, she says, by her own family's experiences.

"My parents grew up as poor kids in the Bronx, but they managed to build a middle-class lifestyle in suburban New Jersey for my sisters and me," she recalls. "They always taught us to recognize how lucky we were. My sisters and I all went off to college after high school, something my mom didn't have the opportunity to do. I think seeing my own circumstances, and how they compared to those of my parents and other people around me, made me keenly interested in questions about economic opportunity and social mobility."

Kearney's future research interests were further sharpened by a college summer internship at a welfare-to-work center in Bridgeport, Conn. "I was teaching classes to young mothers who were my age but obviously living totally different lives from me. That summer made me profoundly interested in the way economic circumstances shape the life trajectories of women and children, in particular."

Kearney went on to win Princeton's prize for best undergraduate thesis in economics for her 96-page senior thesis on the economic factors influencing the age when American women have their first child. From there, she earned her economics Ph.D. at the Massachusetts Institute of Technology and embarked on research analyzing the economics of the family, the polarization of the U.S. labor market, and declining male labor force participation, among other issues.

Her new book, *The Two-Parent Privilege: How Americans Stopped Getting Married and Started Falling Behind*, published in September by the University of Chicago Press, brings together many of her research interests; it looks at evidence that diverging patterns in marriage are reinforcing the economic disadvantages already borne by children of non-college-educated parents.

David A. Price interviewed Kearney by phone in July.



EF: You have pointed out that there has been a dramatic decline in U.S. birth rates since around the time of the Great Recession in 2007, and that this decline kept going during the economic recovery. Why do you think this has been happening?

Kearney: I'm convinced there's no one straightforward economic or policy factor that can account for this. Once you start looking at the data, it becomes obvious that it can't be something as simple as child care costs suddenly becoming too expensive or women's economic opportunities suddenly opening up. Nothing like that changed suddenly around 2007. And in fact, when you look across the U.S., you don't see contemporary policy or economic changes lining up with changes in birth rates the way we would predict.

For instance, we don't even see in the data that births have fallen more in places where rental costs or student debt loads have increased by more than in other places. I don't think, based on my look at the data, that these are the major driving factors. In work I've done with my colleague Phil Levine, we've been able to rule out some of these straightforward potential explanations. It's quite telling that the decline of birth rates in the U.S. has been widespread across the country, across socioeconomic groups. We're really left in a place where what we need is some sort of universal explanation, I think.

Furthermore, the declining U.S. birth rate means that the fertility rate in the U.S. now seems to be belatedly converging to the lower level of other high-income countries. So that would lead me to think it's something that has happened across the cohort.

Here's the speculative hypothesis that Phil Levine and I have put forward. We proposed that priorities have shifted across cohorts, such that people reaching adulthood in more recent years are less committed to having kids or multiple kids than people used to be. We're not just suggesting that preferences have shifted. It's potentially also about parenting having become more intensive over decades, over a period when women have more career opportunities, so the conflicts between focusing your adult life on having and raising kids and pursuing a career is more in conflict than it used to be. People might want to spend more time now in non-family-oriented activities than in the past, and that's become more socially acceptable.

So basically what I think is going on is that young adults today who were born in the 1980s and 1990s are making different decisions about how they want to spend their adult time and money, as compared to the cohorts of people who were born in the 1960s and 1970s. It's important to note that this is speculative.

Relatedly, I'm doing work now with Lisa Dettling and Taylor Landon looking at how housing costs have affected young adults' decision to marry, which of course is related to birth rates, though it is separate. I thought going into the project that perhaps rising housing costs were part of the explanation for why young adults today are putting off marriage, but we are not finding support for that.

EF: The iPhone came on the scene in 2007. Is that a plausible change to be thinking about as a factor?

Kearney: A lot of social changes happened in the years after the iPhone came out: the decline in birth rates, a delay in marriage, the rise in mental health challenges. I find the notion that these are linked to the introduction of the iPhone completely plausible. But I

have yet to see or figure out a way to really nail the causal identification.

And again, it's always hard for us empirical economists when something happened sort of universally. Some people think about it as people spending more time on their iPhone, so they're having less time with other people; if that leads to less relationship formation or even less sex among married couples, that would lead to a reduction in birth rates. Again, that's plausible.

But something that I'm intrigued by is the possibility that the iPhone and

"These divergent trends in marriage and family structure mean that household inequality has widened by more than it would have just from the rise in earnings inequality. You've got this double whammy of earnings inequality happening at the same time as the groups experiencing declining earnings and declining employment are also more likely to just have one adult in the household."

access to social media really amplified social messaging or trends. This is completely speculative and anecdotal, and I wish I could think of a way to study this. Yet I have heard from many young women that they are trying to decide whether they want to have kids, that they're going online and seeing all of these posts on Instagram, TikTok, etcetera, suggesting that people not have kids and saying how kids are a burden to freedom and their life. And so I think the amplification of social norms is perhaps one of the ways that the spread of the iPhone and social media is potentially having an effect. But I hasten to add that I can't point to causal evidence in favor of those hypotheses yet.

EF: In *The Two-Parent Privilege*, you argue that the decline in marriage and the corresponding rise in the share of children being raised in one-parent homes has been widening economic gaps between haves and have-nots. In what way?

Kearney: The decline in marriage and the rise in the share of children being raised in a one-parent home has happened predominantly outside the college-educated class. Over the past 40 years, while college-educated men and women have experienced rising earnings, they continue to get married, often to one another, and to raise their children in a home with married parents. Meanwhile at the same time, the earnings among adults without a college degree have stagnated or risen only a bit. And these groups have

become much less likely to marry and more likely to set up households by themselves.

So just mechanically, these divergent trends in marriage and family structure mean that household inequality has widened by more than it would have just from the rise in earnings inequality. You've got this double whammy of earnings inequality happening at the same time as the

groups experiencing declining earnings and declining employment are also more likely to just have one adult in the household. So in a direct sense, that demographic trend has widened economic gaps.

More consequentially for children's outcomes and socioeconomic gaps, children born to college-educated parents are now much more likely to live in a household with married parents and have the associated benefits of that. To be specific, 84 percent of children whose mothers have a college degree live with married parents, compared to less than 60 percent of children whose mothers don't have a college degree.

This means that the kids born to college-educated mothers live in a household with much higher levels of income, not just because their mother has the potential to make more income, but because she's much more likely to have a working spouse in the home or to have a spouse in the home at all. But also, there are many more

parental resources in general when there are two parents in the home — more parenting time for supervision, nurturing, and so on. To the extent that parenting inputs shape children's outcomes, this widens the gap in kids' behavioral and educational outcomes and exacerbates class gaps. This is why I referred to this phenomenon as the “two-parent privilege,” because the two-parent home has now become another advantage of the college-educated class and their children.

EF: You wrote that when you brought up the subject of family structure at an economics conference, you encountered a lot of discomfort from other economists. What do you think made them uncomfortable?

Kearney: This has happened many times over the years. In fact, I was at a conference on poverty earlier this summer where someone in attendance, not me, brought up the subject of family structure. The panelists, who were not all economists — they included sociologists and a social worker — were visibly uncomfortable, even annoyed, and promptly dismissed the person's question.

I think this discomfort stems from a well-intentioned instinct to not want to come across as sounding judgmental or shaming certain types of families. And I'm very sympathetic to that instinct. The problem, though, is that avoiding this topic is counterproductive. Denying the importance of family structure and the role of families to children's outcomes and economic mobility is just dishonest, based on the preponderance of evidence.

Another reason why I think it makes economists, in particular, uncomfortable is that we don't have a ready solution for the challenge. It would be much easier for us to talk about this issue if there were an obvious policy lever to address it. We're generally very comfortable arguing for, say, a specific tax cut to stimulate a certain type of business activity or a tax credit for

Melissa Kearney

■ PRESENT POSITION

Neil Moskowitz Professor of Economics, University of Maryland, College Park

■ SELECTED ADDITIONAL AFFILIATIONS

Director, Economic Strategy Group, Aspen Institute; Research Associate, National Bureau of Economic Research

■ EDUCATION

Ph.D. (2002), Massachusetts Institute of Technology; B.A. (1996), Princeton University

educational investment, but trying to incentivize family formation outcomes starts to feel like we're moving into territory we might not want to be in. And even if we got over that hangup, it's just a harder set of outcomes to move with the types of economic policy interventions we're used to studying and thinking about.

EF: Can this development be accounted for by parents simply cohabitating in a committed relationship rather than getting married?

Kearney: No, it can't. That's something that highly educated Americans often speculate about this topic: “Oh, we're just becoming more northern European in our attitudes about this.” But that's not what's happening. The decline in marriage among parents in the U.S. has not been replaced with a corresponding rise in unmarried parents stably living together for the long haul and essentially being married in all but name. In the U.S., cohabitation is a very fragile arrangement.

EF: You report in your book that Asian families are an exception to the trends you're describing, with high rates of two-parent families across all levels of education. What do you think is driving that?

Kearney: This is something that I was surprised to learn when doing the data

work for this book. Much of the work that I know in the social sciences in the U.S. has looked at differences in family structure between White and Black families. There's just been less of an emphasis over the past 40 years looking at Asian Americans in the U.S., since they have been a smaller population group.

What I can see in the data is that within the other three major race and ethnic groups in the U.S. — Whites, Blacks, and Hispanics — there's a large gap in family structure based on the mother's education level. Within each of those three major race and ethnic groups, the share of children living with married parents is substantially lower for children whose mothers are not college educated. But for children whose parents identify as ethnically Asian, even among children whose mothers don't have a college education, close to 90 percent live in a married-parent home. In other words, we don't see the same education gradient within this ethnic group.

I'll be honest: I need to learn more about what might be driving this. I just looked to see if it could be explained by the economic situation of non-college-educated Asian men being noticeably better than non-college-educated men in the other groups. That doesn't explain it. Despite similar trends in earnings over time, their rates of marriage just haven't fallen as much. I suspect that social norms might be playing a role here, but I am by no means an expert on Asian or Asian American culture.

The data do show, though, that single-parent homes are quite uncommon in Asian countries. So to the extent that that might be indicative of any sort of social or cultural norms that these groups maintain in the U.S., perhaps that's part of the explanation.

EF: You cite research indicating that places with higher rates of two-parent families have higher rates of upward mobility, economic mobility. What is behind that?

Kearney: On this point, I'm citing the 2014 paper by Raj Chetty, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. This is one of the first papers to make use of access to millions of U.S. tax records to track social mobility across the country. What really jumped out at me from that paper is that a factor highly correlated with the rate of upward mobility in a place was the share of households headed by a single mother. In contrast, economic policies and factors including EITC exposure, tax progressivity, the number of colleges per capita, or local area college tuition are not particularly highly correlated with the rate of upward mobility.

This finding is challenging for economists — what do we make of it? I think it tells us that the way people form their families, the way they are raising their children, is really predictive of upward mobility.

And interestingly, it's predictive at a neighborhood level. It's not just about a child's own family structure; it's about the characteristics of the place. Another paper that came out of Harvard's Opportunity Insights Lab in 2020 documents that the presence of Black fathers in the neighborhood, not just Black men but Black fathers, is the strongest local area predictor of upward mobility rates for Black boys. And it's the factor that is most predictive of a smaller racial gap in adult male earnings for the boys when they grow up.

EF: You've suggested that the trend toward one-parent families has been driven in part by changes in economic conditions that have hurt men in the labor market, such as the loss of manufacturing jobs. What's the connection?

Kearney: This notion is related to William Julius Wilson's observation in the 1980s that differences in the availability of what he referred to as "marriageable men" — approximated by

the share of men in an age group who are fully employed — were contributing to the gap in marriage and married-parent families between Black and White individuals at the time. I am applying that concept to what is going on now in terms of the class or education gap in marriage and married-parent families. The trends over the past 40 years fit with this story, in that conditions that have hurt men in the labor market have led to an increase in one-parent families.

"A factor highly correlated with the rate of upward mobility in a place was the share of households headed by a single mother. . . . This finding is challenging for economists — what do we make of it? I think it tells us that the way people form their families, the way they are raising their children, is really predictive of upward mobility. And interestingly, it's predictive at a neighborhood level."

There are multiple studies that document that there is a causal link between the economic struggles of men in recent decades and the rise in single-mother households. For instance, research by David Autor, David Dorn, and Gordon Hanson, as well as a paper by Eric Gould, show a causal link between the reduction in U.S. manufacturing jobs, which has historically employed many men and provided good wages, and a reduction in marriage and a rise in single-mother households and child poverty in affected communities.

Gould's research goes further to show that this trend has had particularly large negative effects on Black communities, worsening racial gaps. The idea is quite simply that as men become less reliable as financial providers for their families, the value proposition of marriage, at least marriage between a man and a woman, falls. In practice, this could reflect men themselves deciding they can't reliably provide for a family, and so they decide not to commit to it. Or women deciding they're better off providing for themselves and

their children by themselves rather than setting up a household with a man who's often out of work and potentially brings other personal struggles to their relationship.

On that point, I would note the same communities that have been affected by a loss of manufacturing jobs have also experienced increased rates of drug and alcohol abuse and what Anne Case and Angus Deaton call "deaths of despair." So broadly speaking here, the economic challenges facing non-college-educated men have spilled over from the labor market and economic sphere into the sphere of family with profound implications for children in society.

EF: You have found that the trend is path dependent. That is, once economic decline in an area pushes marriage rates down, economic improvement doesn't necessarily reverse that trend. That seems surprising.

Kearney: I was surprised by this, too. For a long time, I was of the view that to turn around the decline in marriage and the rise in non-marital childbearing, we needed to see an increase in economic opportunities and economic security for less-educated men. Then there was an economic shock in the past, say, 15 years that was actually good for the employment prospects and earnings of non-college-educated men: the fracking boom. I set out to study the family formation response to this economic shock in work with Riley Wilson.

I was expecting to find that in communities that had an increase in male employment and earnings because of a local fracking boom, there would be a reduction in the non-marital birth share. But it turns out that's not what happened in those places. The number of births did go up in response to the increase in male earnings and incomes. That's not surprising given past research

showing positive income effects leading to increased birth rates. But what was surprising to me was that the increase in births was in similar proportion among unmarried and married mothers, and there was no increase in marriage.

Then we looked back at what happened during the coal boom and bust of the 1970s and 1980s. That was a similar shock in similar communities, but what happened then was different: The increase in male earnings led to an increase in marriage and a reduction in the non-marital share of births.

I think this is potentially indicative of a feedback loop between economic and social forces. It's entirely consistent with the various pieces of evidence that economic pressures that have reduced the, let's say, economic attractiveness of non-college-educated men over the past 30 or 40 years led to a situation where in certain communities, among certain groups, non-marital childbearing has become commonplace. The social norm tying marriage and having and raising children together has been broken. And now it's going to take more than just a change in economic circumstances to reverse that. My current view is that it will likely require both economic and social changes to bring about a sort of return to the bundling of marriage and having and raising children.

To be clear, I don't think any of us would like to return to a situation where someone really had to be married, even if the marriage was harmful. But I think there's a question about whether a lot of people, at least outside the college-educated class, have become agnostic about the benefits of a married two-parent home for kids.

EF: Would income transfers take care of the problem?

Kearney: An obvious policy response to addressing the gaps in resources between one- and two-parent homes would be to increase government support to one-parent homes or more generally to lower-income homes. This would, to some extent, help close

resource gaps. Now to be sure, I am in favor of increasing income support to low-income families with children, given all we know about the benefits of alleviating material deprivation for children.

I hasten to add that this should be done regardless of parental marital status. Certainly, receipt of benefits should not be conditioned on having an absent parent as U.S. welfare used to be, since that explicitly disincentivized marriage. But I do want to acknowledge the concern that insofar as transfer payments increase the economic viability of single-parent households, that might lead to some small increase in these types of households. My read of the evidence is that the behavioral effects there are likely to be small.

But either way, I'll take the trade-off. I am firmly of the view that we cannot just allow children to continue suffering the consequences in the hope that entices some more parents to get married.

Having said that, even an increase in transfer payments isn't going to fully make up for the absence of the second parent in the home. Parents do more than just pay the bills. They invest their time and energy into their children. They provide supervision and guidance. They read to them and play with them. We should be clear that a government check is never going to be able to fully make up for the absence of a second committed parent in the home.

Furthermore, the reality is that in this country, we couldn't even muster the political support last year to maintain an annual child tax credit of \$3,000 per year. That indicates to me politically how far we are from a situation where we might conceivably have income transfers to make up for the absence of a second earning parent in the home. What are the chances we're going to have a child allowance equal to, say, the median earnings of a high school graduate, around \$40,000 a year, year after year until the child is 18? The idea that we're going to solve

this problem with a government check is just not plausible. And it doesn't account for all the many things that a second parent brings to the home beyond income.

EF: Any thoughts on what policy-makers should be doing?

Kearney: First, I think that policymakers and advocates for children and family well-being and social mobility need to acknowledge the fact that the unprecedented shift away from the institution of having and raising children within a married-parent home has not been good for children. And given the divergence across education groups in this trend, it has exacerbated class gaps. We need to acknowledge that this is a challenge and not pretend that it doesn't matter — or that we can just rely on schools or counselors or training programs to make up for the deficit that children often experience when they come from one-parent or unstable homes.

Once policymakers are willing to acknowledge that, it should lead to a shift in thinking about how to design government and social programs in ways that explicitly support and promote two-parent families. Certainly not by penalizing single-mother families. But rather by looking for ways to bring nonresident fathers into the family fold in a way that's productive and beneficial for everyone. Also, by supporting efforts to continue to innovate with programs and policies that would support and encourage the formation of two-parent healthy, married households.

And I would also add that recognizing the urgency of this problem and how the economic struggles of non-college-educated men have had disastrous consequences for families and children in America heightens the imperative of bolstering economic opportunity and promoting skills and jobs. We cannot be complacent about what's happened in certain groups and in certain parts of the country in terms of the economic struggles that have happened there. **EF**

BY TIM SABLİK

Bringing Payments into the Fast Lane

With the launch of FedNow, the Fed is seeking to promote the growth of instant, always-on transactions

In July, the Fed launched its first new payment service in more than 40 years. FedNow enables money to move instantaneously from sender to recipient 24 hours a day, seven days a week — weekends and holidays included. While there are already mobile payment apps, such as Zelle, Venmo, or Cash App, that appear to instantly transfer funds between users, many of these services still rely behind the scenes on older payment technologies like the Automated Clearing House (ACH) network that can result in some delays. Additionally, these apps are focused on person-to-person payments. In contrast, financial institutions can use FedNow to offer instant processing of all types of payments, including person-to-person, business-to-business, and business-to-customer.

The launch is a milestone achievement of work the Fed began nearly a decade ago when it assembled payment industry stakeholders to discuss ways to speed up noncash payments in the United States. (See “Speeding Up Payments,” *Econ Focus*, Fourth Quarter 2017.) In many ways, cash remains the ultimate fast payment. It takes seconds to exchange currency, and once done, the transaction is finished. But the use of cash as a payment method has gradually diminished as consumers have increasingly turned to payment cards for in-person and online transactions — a trend that accelerated during the COVID-19 pandemic. According to the Fed’s 2023 Diary of Consumer Payment Choice, cash was used in 18 percent of payments in 2022, down from 26 percent in 2019. Similarly, the Pew Research Center found that the share of Americans who said they didn’t use cash for purchases in a typical week

jumped from 29 percent in 2018 to 41 percent in 2022.

In contrast, the volume and value of noncash payments have soared in recent years. According to the 2022 Federal Reserve Payments Study, the value of core noncash payments grew faster from 2018 to 2021 than in any previous three-year period going back to 2000. (See chart.) Consumers have also increasingly embraced mobile person-to-person payments as smartphones have spread. According to a recent survey by Federal Reserve Financial Services, a collaboration among the 12 Federal Reserve Banks, nearly three-quarters of Americans

used mobile payments in 2022, compared to just one in 10 in 2013.

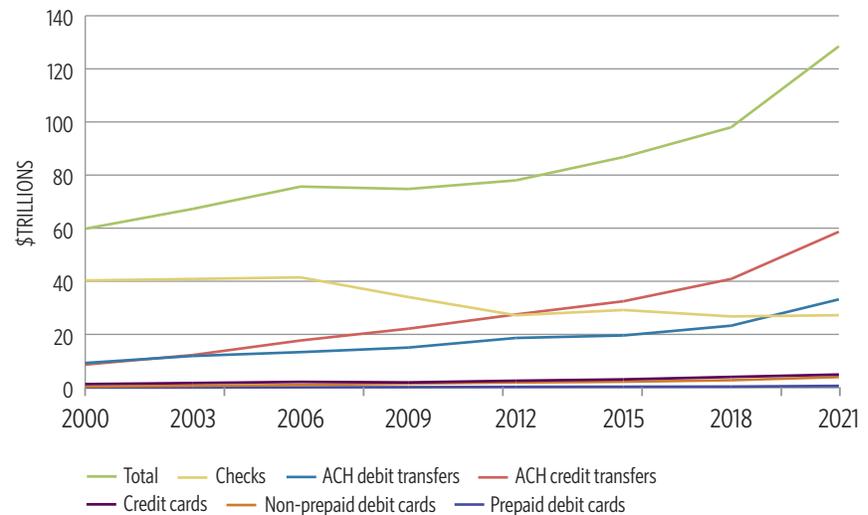
As households and businesses have become accustomed to doing more on the go without delay, there has been growing demand for payments to keep pace.

HOW DOES FEDNOW WORK?

Processing transactions on any payment system involves two main steps: clearing and settlement. In the clearing step, financial institutions exchange details about a transaction, weeding out errors or fraud. In the settlement step, funds are

Growth in Non-Cash Payments

The value of non-cash payments surged from 2018-2021



SOURCE: The Federal Reserve Payments Study, 2022 Triennial Initial Data Release.

NOTE: All estimates are on a triennial basis. Card payments were also estimated for 2016, 2017, 2019, and 2020. Credit card payments include general-purpose and private-label versions. Prepaid debit card payments include general-purpose, private-label, and electronic benefits transfer (EBT) versions. Estimates for prepaid debit card payments are not displayed for 2000 and 2003 because only EBT was collected.

transferred from the sending financial institution to the receiving institution. Historically, most payment systems have used deferred net settlement, meaning that they collect transactions in batches and settle the net balance between financial institutions at certain times of the day to minimize the number of transfers. As technology has improved, it has become more feasible to settle transactions individually in real time. FedNow employs this method of real-time gross settlement.

How does this work in practice? Imagine that Bob wants to send \$25 to Alice using FedNow. Bob initiates the payment through his bank. His bank then submits a payment message to the FedNow service, which validates that it meets all required specifications. FedNow then sends the message to Alice's bank to confirm that it can receive the payment. Once confirmed, FedNow debits the master account of Bob's bank (the account it holds with the Fed) and credits the master account of Alice's bank. Both banks then receive messages that the settlement is complete. The entire process is designed to be completed in less than 20 seconds.

As the above example illustrates, FedNow is an interbank settlement service for financial institutions that have accounts at the Fed or a correspondent relationship with an institution that has one. Individuals will not be able to directly access FedNow; instead, financial institutions will need to sign up for FedNow and then offer their customers payment services that use its capabilities. At launch, FedNow will support only credit transactions, meaning that the sender must initiate the payment. Individuals or businesses will be able to request payment through the system but not directly debit funds from a payer's account. Financial institutions will also have the option to sign up only to receive payments.

While FedNow is similar to cash in its immediacy and finality, it is not a central bank digital currency. Like other Fed payment services, it is a

system for settling payments between financial institutions. Individuals can access the FedNow service only through a participating financial institution. The Fed has separately been researching a central bank digital currency, which would be a liability of the Fed (in the same way that physical dollars are a liability of the central bank) that the public could access directly. However, it has not announced any plans to issue one, and Fed Chair Jerome Powell has said that any such decisions would require congressional approval. (See "Fed Eyes Central Bank Digital Currency," *Econ Focus*, Second Quarter 2022.)

FedNow will also include a tool to help banks manage the liquidity demands for real-time payment services. Because FedNow allows for transfers to happen at any time and day, banks may need to access liquidity to process payments when traditional sources (such as the Fed's discount window) are not open. Additionally, a real-time gross settlement service like FedNow may require banks to have greater liquidity on hand than they would need for a traditional net settlement service. Under deferred net settlement, financial institutions only need enough funds to process the balance of payments with other institutions at set times. The new liquidity management tool will operate around the clock and is designed to meet such needs. It will also be available to support other private sector real-time payment systems, not just FedNow.

"With the FedNow Service, the Federal Reserve is creating a leading-edge payments system that is resilient, adaptive and accessible," Richmond Fed President and FedNow Program Executive Sponsor Tom Barkin said in a March press release announcing the launch of FedNow in July.

WHOM WILL FEDNOW HELP?

Households and businesses with a large financial cushion can usually manage day-to-day expenses without

much concern, making the time it takes funds to move from one bank to another less critical (as long as it happens within a few days). However, those in more precarious financial positions can benefit from faster execution of payments.

According to a recent survey by PYMNTS, a payments data and news platform, and LendingClub, an online financial services company, nearly two-thirds of Americans last year were living paycheck to paycheck. For these households, waiting several days for a paycheck to clear when bills are due means choosing among costly options. They can incur late fees on the bills (which could also mean eviction or loss of services), they can take out a payday loan or use a check cashing service to get access to their money sooner (for a fee), or they can overdraft their bank account (also for a fee). The Consumer Financial Protection Bureau found that frequent overdrafters (those who pay more than 10 overdraft fees a year) account for less than 10 percent of bank customers but pay nearly three-quarters of all overdraft fees — an average of \$380 a year. Overdraft revenue fell during the pandemic as some banks reduced their fees, but it still totaled more than \$7.7 billion in 2022.

"About half of Americans always have over \$1,000 in their bank account and never worry about overdraft fees," explains Aaron Klein, a senior fellow at the Brookings Institution and longtime advocate of payment and financial reform. "The other half frequently have less than \$1,000 in their bank account, with balances often falling close to zero. For too long, we've had banking and payments policy run by people in the top half making assumptions that the world operates similarly for the bottom. And the reality is that the bottom half live in a radically different world where basic banking is quite expensive."

Many small businesses face similar challenges. According to the Fed's 2022 Small Business Credit Survey, 94 percent of small business owners

reported experiencing some financial challenge over the prior year, such as difficulty paying operating expenses or managing uneven cash flows.

Paychecks sent over FedNow would be immediately available to workers. In addition to helping households living paycheck to paycheck, this is valuable for temporary and contract workers, who could receive payment as soon as a job is completed. FedNow could also speed up federal benefits payments. During the COVID-19 pandemic, federal stimulus checks were delayed by legacy payment systems and the need to mail out paper checks to some households. FedNow would enable such emergency funds to reach recipients instantly. Indeed, the Treasury Department is among the initial group of FedNow participants. Financially constrained households could also use FedNow to pay bills at the last minute, providing greater flexibility and eliminating the risk of late fees due to delays in payment processing.

“If your electricity is going to be cut off at midnight, you’ll be able to make a payment at 11 p.m. to keep your power on,” says Steve Kenneally, senior vice president for payments at the American Bankers Association. “Similarly, if there is a massive hailstorm in Texas, it could allow an insurance company to send out immediate payments so people could get their windshields replaced that day instead of waiting a week for a check to arrive.”

Small businesses would also benefit from more than just increased speed. FedNow uses ISO 20022, a global payment messaging standard that allows additional information about a transaction to be sent alongside each payment. That information is coded in a way that can be easily read by a computer. Today, many businesses still receive invoices separately from payments, and those invoices don’t

adhere to any standard formatting. This requires businesses to manually sort and pair each payment and invoice to complete accounting records. Through ISO 20022, FedNow promises to automate and greatly speed up this process.

DON'T WE ALREADY HAVE FAST PAYMENTS?

As the Fed’s own surveys reveal, 75 percent of households and 83 percent of business are already using fast payments. So why is the Fed launching FedNow?

Paychecks sent over FedNow would be immediately available to workers. In addition to helping households living paycheck to paycheck, this is valuable for temporary and contract workers, who could receive payment as soon as a job is completed.

As it turns out, the Fed already operates another real-time gross settlement service called Fedwire. However, Fedwire is not available around the clock. In 2021, the Fed’s Board of Governors extended the operating hours of Fedwire and said it would continue to analyze the “risk, operational, and policy implications of further expanding operating hours.” But in a recent post for “The Teller Window” blog, New York Fed researchers Michael Junho Lee and Antoine Martin wrote that the technology behind Fedwire (which originally launched using telegraphs in 1918) was not designed to be updated without interruption, necessitating some downtime. By contrast, FedNow can receive updates while staying open.

There is also a private sector real-time gross settlement system that predates FedNow. The Clearing House, a banking association and payments

company formed in 1853, launched the RTP network (which stands for Real-Time Payments) in 2017. RTP works through a joint Fed master account that participant banks prefund. Those funds can then be used to instantly settle payments with other institutions on the RTP network. Hundreds of financial institutions have joined RTP. Use of the RTP network has grown steadily since its launch, although its overall share of noncash payments is still relatively small. In the second quarter of 2023, RTP handled 58 million transactions worth \$29 billion.

RTP developed alongside the

Fed’s efforts to encourage faster payments. In 2015, the Fed created the Faster Payments Task Force, a group of private and government entities convened to make recommendations for faster payment services in the United States. Several countries around the world — including the United Kingdom, Sweden, and South Korea — had already launched

instant payment systems. The task force concluded that any new U.S. payment service needed to be ubiquitous, broadly inclusive, efficient, safe, highly secure, and fast. The Clearing House, which had begun initial work on RTP in 2014, participated in the task force and presented RTP as a solution that met those criteria.

In its final report in 2017, the Faster Payments Task Force called upon the Fed to continue supporting the development of fast payment systems. That same year, the Fed updated its rules to allow the creation of joint master accounts, helping to enable RTP. But the task force also recommended that the Fed create its own real-time settlement service to be made available year-round, 24/7.

The Fed has a history as a payment operator going back to its founding. One of its first core functions was to provide check clearing services to member banks. In the 1970s, the Fed

became involved in the development of ACH, which used emerging computer technology to automate and accelerate check processing. Today, the Fed operates one of two ACH networks (the other being operated by The Clearing House).

Despite this long history, the Fed didn't make the decision to launch a new payment service lightly. The Monetary Control Act of 1980 recognized that the Fed enjoys many advantages that could allow it to compete unfairly with private payment providers. The law requires the Fed to price its payment services to recover its costs in the long run. In response to that reform, the Fed adopted criteria that any new payment service it created would need to meet. These include that the new service "yield a clear public benefit" and that it be one that "other providers alone cannot be expected to provide with reasonable effectiveness, scope, and equity."

After seeking public comments on the creation of a 24/7 real-time settlement system in 2018, the Fed announced the launch of FedNow in 2019, noting that most of the comments it had received had been in favor of such a move. In its "Additional Questions and Answers" document for FedNow, the Fed's Board of Governors said it had concluded that private sector services alone "were unlikely to provide an infrastructure for instant payments with reasonable effectiveness, scope, and equity." Separately, a 2016 report from the U.S. Government Accountability Office found that, on the whole, the Fed's participation in

the payments services market had been good for competition, helping to lower prices for customers.

CHALLENGES AND NEXT STEPS

Launching a new payment service entails confronting new challenges. Fraud is a problem for all payment types, but it has become a particularly hot topic for instant payments because of their speed and finality. Once an instant payment has settled, it can be hard to reverse if it later turns out that fraud was involved. In its initial rollout, FedNow provides tools to help banks mitigate fraud. This includes giving participating financial institutions the ability to reject payments from suspicious accounts and to put limits on the amount of each transaction. The Fed will also provide tools to help financial institutions investigate suspected fraudulent transactions.

Some commentators have also raised concerns that widespread availability of instant payments could exacerbate banking panics by allowing depositors to withdraw funds more quickly at any time and day. In a July 12 speech at the National Bureau of Economic Research, Cleveland Fed President Loretta Mester noted that FedNow participants "could lower their transaction limit, restrict access to the service to certain non-wholesale customers, or change to 'receive payments only' status" to mitigate sudden deposit outflows. "They could also design their own controls to limit the total volume of transfers to manage their risks while serving their customers," she added.

Another challenge for any new

payment service is attracting a critical mass of users. Payment systems are subject to what economists call network effects, meaning that the value of the system increases as the number of users increases. A method of payment is most valuable if it is widely accepted. In order for households and businesses to reap the benefits of fast payments, financial institutions need to sign up for FedNow and offer services that utilize its capabilities to their customers.

"Simply turning on the switch to FedNow does not solve the problem of how long it takes a customer to access their funds," says Klein. "The customer has no control over whether or not their bank uses it or the other bank sending them money is using it."

The Fed has noted that while some countries have mandated that financial institutions adopt instant payment services, that is not the case in the United States. The Fed has been working to educate and prepare financial institutions for FedNow, but for many banks, adoption and rollout is anticipated to take time.

"Implementing FedNow will be a big technological lift for a lot of banks," says Kenneally. "So, we expect to see implementation over time rather than all at once."

In June, the Fed announced that 57 FedNow early adopters had completed their testing and certification to go live when the service launched in July. The Fed plans to continue working with financial institutions in the years ahead to support network growth with the ultimate goal of reaching all institutions big and small. **EF**

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BY STEPHANIE NORRIS, LAURA ULLRICH, AND SONYA RAVINDRANATH WADDELL

Community Colleges as Anchor Institutions in Rural Areas

The Fifth Federal Reserve District — comprising Maryland, North Carolina, South Carolina, Virginia, most of West Virginia, and Washington, D.C. — is home to 122 public two-year institutions that have a wide range of both traditional academic and technical programs. More than half of these community colleges are located in rural counties. The 66 rural community colleges, like the private and public four-year institutions of higher education in rural areas, play an anchor institution role in their communities. But this role is not always accounted for in the formulas that federal, state, and local governments use to fund institutions of higher education. Understanding and appropriately measuring the role that community colleges play in rural areas is important to how we evaluate policies and funding for workforce and community development throughout the rural Fifth District.

THE ANCHOR ROLE OF COMMUNITY COLLEGES

Community colleges, sometimes known as junior or technical colleges, are institutions of higher education that play an important role in the landscape of workforce development, particularly for traditionally underserved populations. Community colleges offer two-year curricula for associate degrees; provide transfer programs to four-year degree programs; offer short-term certificate and credential programs; identify and provide training required by local employers; and augment local high school course offerings. (See “Community Colleges in the Fifth District: Who Attends, Who Pays?” *Econ Focus*, Fourth Quarter 2019.) Their role in education and training is well known, even if there is work to be done in measuring their

success in that area.

What is less well known is their role beyond education and workforce development, particularly in rural areas. In many rural regions, the community college may be one of the few institutions with the local presence and trust to facilitate economic and community development — in other words, community colleges play the role of anchor institution. Anchor institutions are organizations that have influence, trust, and a role in their communities beyond their immediate (usually public) mission. In addition, according to the Rural Local Initiatives Support Corporation (Rural LISC), “anchors can *hire* employees from the local community, *buy* needed goods and services from local small businesses, and develop and preserve real estate in their surrounding neighborhood to create places for local residents and employees to *live* and *shop*.” In small towns and rural areas with few large employers, these anchor institutions often remain stable drivers of economic activity.

Research on anchor institutions often centers on large universities and hospital systems — the so-called “eds and meds” — and their role in community and economic development. (See “Rural Hospital Closures and the Fifth District,” *Econ Focus*, First Quarter 2019.) The Alliance for Research on Regional Colleges underscores the importance of rural public colleges, including community colleges, in sustaining local economies and fueling economic development — including not only providing college-educated workers for local industries, but also building infrastructure or building trust in the community. For community colleges, this community role can be even more central because they often serve a formally defined area, such as a set of counties.

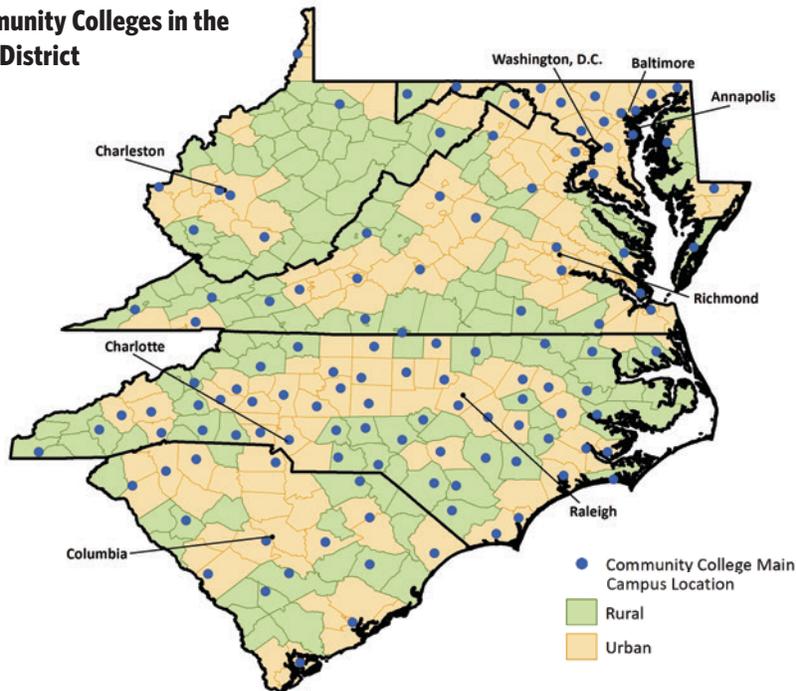
RURAL COMMUNITY COLLEGES IN THE FIFTH DISTRICT

The 122 community colleges in the Fifth Federal Reserve District are not distributed evenly among communities. North Carolina, for example, aims to have a community college within a 30-minute drive of any citizen of the state. With its 58 community colleges, North Carolina has the third-largest number of community colleges in the country. Additionally, it has the fifth-largest number of students enrolled in community colleges, while ranking ninth in terms of overall population. West Virginia, on the other hand, has only nine community colleges; of course, West Virginia also has a smaller population. Nonetheless, on a per-capita basis, North Carolina has the largest community college system in the district.

Given that population is not distributed evenly across places, it is not surprising that community colleges are not distributed evenly within district states. In Virginia, for example, the largest community college (Northern Virginia Community College) and the highest concentration of satellite campuses are in Northern Virginia, which is also home to over a third of the state’s population and employment. These more populated areas also have more options for higher education in general, via four-year public institutions or private colleges and universities. On the other hand, in the more rural parts of Virginia, the local community college is often either the closest or the only source of higher education or postsecondary skill development for area residents.

Community colleges in rural areas can also be one of the largest employers in the region. Craven Community College in Craven County, N.C., for

Community Colleges in the Fifth District



NOTE: A community college is a two-year degree-granting and/or certificate-granting public institution. There are 122 in the Fifth District. County-level urban and rural designations are based on the U.S. Department of Agriculture's 2013 Rural-Urban Continuum Codes (RUCC). Counties with an RUCC of one or two are urban, and counties with an RUCC of three through nine are rural, based on Federal Reserve Bank of Richmond categorization.

SOURCE: U.S. Department of Agriculture 2013 Rural-Urban Continuum Codes. U.S. Department of Education, IPEDS.

example, employs 331 full-time equivalent (FTE) people in a county with a population of 101,000. That creates a presence in their region that Central Piedmont Community College in Charlotte, which employs 1,516 (FTE) in a county of 1.1 million, does not. In fact, rural community colleges are frequently among the top 10 employers in the county where their primary campus is located.

ANCHORING INITIATIVES OF COMMUNITY COLLEGES

Like many anchor institutions, rural community colleges can make investments directly in their communities while leveraging their institutional influence and capacity to build momentum around projects. In rural North Carolina, leaders at Mayland Community College had a vision of turning Mitchell, Avery, and Yancey counties into a regional destination. Thus, they created the Mayland

Community College Enterprise Corporation, which has supported downtown development in the town of Spruce Pine; partnered locally to develop an observatory and the largest public telescope in the Southeast; and driven the redevelopment of a hotel and downtown event space. There are other examples, too: Eastern West Virginia Community and Technical College and North Carolina's Piedmont Community College are leading efforts to drive innovation in their local agriculture industries.

Community colleges often serve as resource hubs in rural areas with limited access to important institutions and as providers of critical services. The Technical College of the Lowcountry in South Carolina provides support services to local businesses and community members. For example, its Hampton Campus, in rural Hampton County, S.C., has a public computer lab that anyone in the community can access; for some,

it's the only local access to computers and, particularly, reliable high-speed internet. The college also operates the Center for Business and Workforce, which provides free seminars and tutorials to local small business owners. Lack of child care, a frequently cited barrier to employment, presents a challenge in rural areas. In South Carolina, Northeastern Technical College partnered with the Chesterfield County First Steps to start an on-campus child care program to serve students and working parents in the community. The child care center of Vance-Granville Community College in North Carolina is another example. This facility is used as a training laboratory for students, but also serves the rural community with a high-quality child care option for local residents. Chesapeake College in Maryland operates a facility called Corner of Care, which provides toiletries, food, and beverages for those in need.

A direct way that rural community colleges contribute to economic development is by partnering with businesses and leveraging their strengths in workforce development. Local businesses seeking to shore up their workforce with specific skills may look to a rural community college. In order to invest in local workers, Danville Community College in southside Virginia partnered with Hitachi to design a curriculum around the types of skills Hitachi needed in its workforce. Community colleges can also attract businesses and industries to rural areas with tailored training and education programs. The readySC program guarantees customized training and recruiting systems for companies that bring new jobs to the state via relocation or company expansion. Rural South Carolina community colleges, such as Orangeburg-Calhoun Technical College, provide readySC programs for companies in their service area along with corporate training courses that can be utilized by any local company or institution.

FUNDING COMMUNITY COLLEGES

While community colleges, especially in rural areas, play a role that goes beyond educating their enrolled students, the funding mechanisms that support the schools are largely based on enrollment.

Revenue streams for community colleges can vary by college, location, and program, but most community colleges in the Fifth District are funded primarily through a combination of tuition and state government funding. In Maryland, North Carolina, and South Carolina, local funding is also common, while it is much rarer in Virginia and West Virginia. In some cases, the economic or community development activities of colleges are funded through other sources, such as external grants.

Most of the time, state funding is tied to enrollment. In Virginia, for example, state appropriation bills from the General Assembly allocate general funding to the Virginia Community College System, which then allocates it to community colleges based on enrollment (funding can also be designated for specific programs at specific colleges). North Carolina provides community colleges with a base amount of support regardless of size (15 percent of funding) but then allocates funding primarily based on enrollment (83 percent of funding) and to a small extent based on student outcomes across a standard set of measures (2 percent of funding). Maryland has an allocation mechanism that is heavily based on enrollment. West Virginia recently passed a new performance-based funding formula that relies on enrollment for base funding; it will go into effect in 2024. South Carolina also has a funding formula that is based on enrollment (although it is used in a less formal way than in other states).

There are also federal and state supports targeted specifically to students for use in higher education. For example, many low-income community college students use federally provided

Pell Grants if they are seeking traditional associate degrees or for-credit certificates. Pell Grant funds make up a significant percentage of community college revenues; this is especially true in rural counties where a higher percentage of students are Pell eligible. (See “Pell Grants and Community College Success: Improving Metrics via our Community College Survey,” *Regional Matters*, Sept. 8, 2022). There are also many examples of state-funded scholarships, such as the Virginia Guaranteed Assistance Program, the South Carolina Lottery Tuition Assistance Program, or West Virginia PROMISE. Most, if not all, of these state-funded scholarships or grants require the student to be in a for-credit, degree-seeking program. Many also require full-time attendance. One exception to this is the Maryland Community College Promise Scholarship, which was expanded recently to include noncredit programs that lead to industry-recognized licensure or certification.

Typically, federal funding is targeted to the students, via Pell Grants, and not the schools. One notable exception to this was the Higher Education Emergency Relief Funds (HEERF) that were allotted to institutions of higher education in the three COVID-related stimulus bills. This funding represented an unprecedented increase in higher education funds (approximately \$4,700 per FTE student). For many schools — particularly community colleges and schools with lower-income students — this was a windfall of funding. For example, Orangeburg-Calhoun Technical College in South Carolina received a total of \$14.2 million in HEERF funding — an incredible amount given that its state appropriations in 2022 totaled \$5.9 million. This funding, however, is short-lived; HEERF grant performance periods expired on June 30, 2023, with a potential one-year extension for grant spending — through June 2024.

Revenue from local appropriations, largely generated through property or sales taxes, are an important funding

source for many community colleges in the Fifth District. Urban community colleges, often supported by growing populations and robust tax bases, are likely to benefit the most from this revenue stream. On the other hand, rural community colleges are more likely to be facing population declines and often are surrounded by other nontaxable properties like state and national parks. For example, Horry-Georgetown Technical College, which is located in the same county as Myrtle Beach, S.C., benefits from local appropriations generated by property taxes in Horry and Georgetown counties and sales taxes generated in Horry County. In fiscal year 2022, county appropriations from property taxes amounted to \$4.5 million. The technical college also receives 6.7 percent of the revenue generated from Horry County’s one-cent sales tax for education, which is a tax largely exported to tourists visiting Myrtle Beach. Between 2008 and 2022, the one-cent tax raised over \$953 million, providing Horry-Georgetown Tech with more than \$5 million a year in additional funds. Combined, Horry-Georgetown Tech gets around \$10 million per year from local sources, approximately \$1,230 per student. Now contrast that with rural Piedmont Technical College in Greenwood, S.C. In fiscal year 2022, it received \$2.7 million in county appropriations, approximately \$510 per student.

ENROLLMENT

Even with the addition of federal HEERF dollars and the local appropriations relied upon by some colleges, community college revenue streams rely heavily on funding from state government. And state government funding is tied to enrollment. There are three reasons why understanding the nuance in funding based on enrollment is important. First, there are two ways to think about the number of students in a school: the number of total students taking courses (headcount) and the number of full-time equivalent

Total Headcount (Full- and Part-Time Students) at Community Colleges

	Spring 2019	Spring 2023	Change (%)
Maryland	106,775	86,065	-19.4%
North Carolina	202,800	197,468	-2.6%
South Carolina	72,325	74,406	2.9%
Virginia	132,893	116,280	-12.5%
West Virginia	11,897	9,417	-20.8%
Fifth District Total	526,690	483,636	

SOURCE: National Student Clearinghouse; authors' calculations

students (FTEs). For most four-year schools, such as UNC-Chapel Hill, the gap between FTE and headcount enrollment is minimal. At community colleges, however, many more students attend part time. So, while the ratio of FTE to headcount enrollment was 0.91 at UNC-Chapel Hill for the 2020-2021 academic year, that same ratio was 0.51 at rural Sandhills Community College, just 60 miles south.

Most of the time, state and local funding is based on FTEs rather than headcount enrollment. For example, if two students are in school part time, then they are likely considered one student for funding purposes. This makes sense in some cases, such as paying teaching staff or buying machinery. But for most of the services described above, such as career counseling or child care, two students require more resources than one student. And, of course, no funding based on FTEs would include funding for the community-available computer lab.

Second, some community colleges across the district face declining funding due to declines in enrollment. Only in South Carolina — where many community colleges used federal funds to waive tuition for students in qualifying programs for both the 2021-2022 and 2022-2023 academic years — has headcount enrollment increased slightly. (See table.) The funding decrease that will accompany the decline in enrollment could impact the programs that a rural area might rely on from their regional community college.

Finally, the enrollment (headcount

or FTE) numbers include only students enrolled in for-credit programs, with some states providing no appropriations for noncredit programs and some providing FTE funding for noncredit at lower rates than for-credit programs. (The one exception is Maryland, which funds both credit and noncredit programs equivalently.) But noncredit programs (such as programs for commercial driver's licenses) can be critical programs for students at community colleges and the employers they work for, particularly those in rural areas. Since 2021, the Richmond Fed has been working to develop the Fifth District Survey of

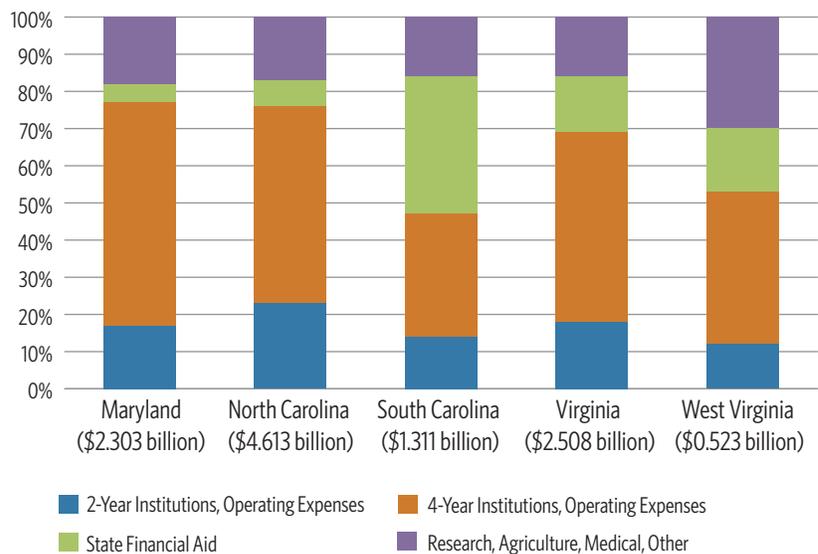
Community College Outcomes, which will help to better understand the role that noncredit programs play in workforce development. Results of the pilot survey were released in 2022, and the extended pilot survey results will be released in fall 2023.

WHERE DOES THE FUNDING GO?

What do we know about where state appropriations for higher education are being allocated?

Together, Fifth District states spent an annual average of \$11.26 billion on higher education between 2019 and 2022. (See chart.) With the exception of South Carolina, which allocates a significant share of its higher education expenditures to direct aid to students in the form of grants and scholarships, the majority of state spending goes toward operational expenses at two- and four-year institutions. Two-year community colleges accounted for an average of 34 percent of public FTE enrollment, ranging from 17 percent in West Virginia to 46 percent in North Carolina. Yet only 27 percent of

Where Does State Higher Education Spending Go?

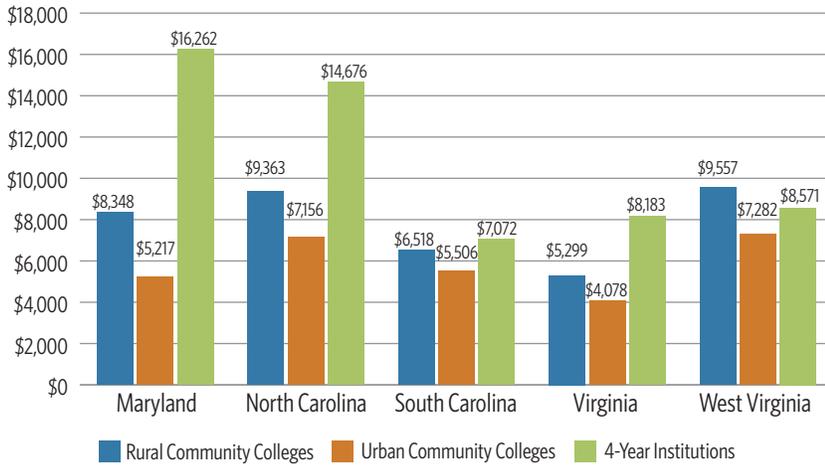


SOURCE: 2023 State Higher Education Finance (SHEF) Report, State Higher Education Executive Officers Association; authors' calculations.

NOTE: Annual spending averaged over 2019-2022 FY.

Institutional Revenue from State Funding Sources, 2020-2021

Per FTE by State and Institution Type

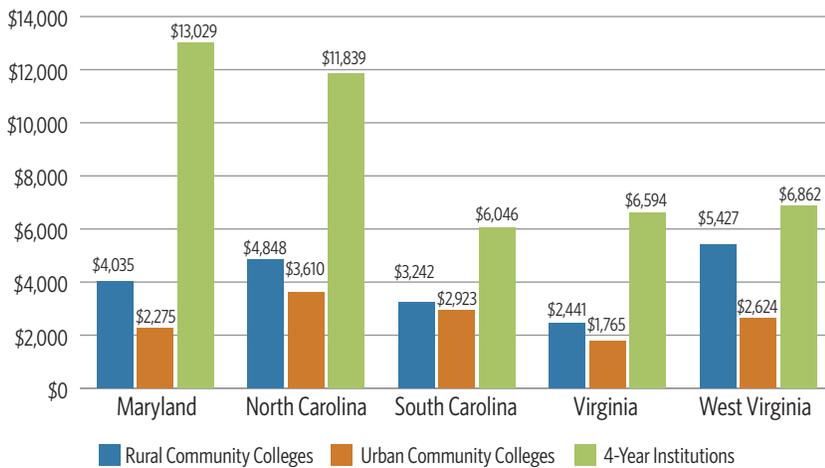


SOURCE: Table F2021A, National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS); authors' calculations.

NOTE: Revenues from state funding sources reported by institutions. Revenues from state spending include state operating grants and contracts, state appropriations, and state nonoperating grants.

Institutional Revenue from State Funding Sources, 2020-2021

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SOURCE: Table F2021A, National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS); authors' calculations.

NOTE: Revenues from state funding sources reported by institutions. Revenues from state spending include state operating grants and contracts, state appropriations, and state nonoperating grants.

higher education operational spending in the Fifth District goes to community colleges.

In addition to operating expenses and financial aid for students, states spend between 17 percent and 30

percent of higher education expenditures on functions that are primarily housed at large four-year universities, including research, agriculture stations and cooperative extension programs, and medical school operations.

In all Fifth District states except West Virginia, state funding (for operational and nonoperational expenditures) per FTE is higher for four-year institutions relative to both urban and rural community colleges. The disparity is starkest in Maryland, where four-year institutions receive nearly double the state funding per FTE than rural community colleges in the state. (See chart.)

The gap widens between community colleges and four-year institutions when we look at state revenue per headcount rather than FTE. Funding per student declines for all institutions when counting full- and part-time students the same, but it drops precipitously for urban and rural community colleges. (See chart.)

Many institutions of higher education — from community colleges to large research universities — play an important role in their communities. If the success of economic development is vastly improved by the support and coordination of an anchor institution, and if rural community colleges play that role, then it is important to consider those activities when evaluating the efficacy of funding formulas. The Richmond Fed Survey of Community College Outcomes will provide a better sense of the breadth of programs being offered at community colleges as well as a full accounting of available wraparound services — hopefully providing even more insight into where these institutions fit, and have the potential to fit, in the landscape of workforce, economic, and community development.

CONCLUSION

Community colleges are publicly oriented institutions that are strongly embedded in their regions; perhaps there is an opportunity to address community needs by aligning resources to provide critical capacity at rural community colleges. To the extent that they play a role in ensuring opportunities and achieving efficient outcomes in rural areas, community colleges may represent an undervalued opportunity. **EF**

BY KARTIK ATHREYA

Investing in Women’s Careers

In the early 2000s, only about 5 percent of all NBA players were from Europe. As of 2017, that number had risen to almost 14 percent. During this same period, the league’s revenue grew from \$2.5 billion to \$7.4 billion, peaking in 2019 at \$8.8 billion. Since that time, the NBA has invested in global talent on behalf of its teams, and it recently opened academies in Australia, India, Senegal, and Mexico. As a result, young athletes worldwide are choosing to play basketball and invest in their skills more often. The investment is paying off: The last five NBA MVP awards have gone to players from overseas. The league grew and everyone — most of all those with the talent to play at the highest level — won.

I’ve been reflecting on this success story ever since I attended a recent meeting of the Richmond Fed’s Community Investment Council. Members there — community leaders who understand the challenges and opportunities for local economic growth — discussed the difficulties, not of would-be basketballers, but of a much larger group: women who face the balancing act of managing a successful professional life with the societal expectations that come with being a mother.

I now think the NBA’s success offers insight into what our community leaders rightly worry about: a loss of talent and skills, with women bearing the brunt, for the want of a reliable and affordable child care ecosystem. Seeing the NBA has made me ask: Can we make some specific investments in child care and work that would allow employers and women workers, and the rest of us, to all win?

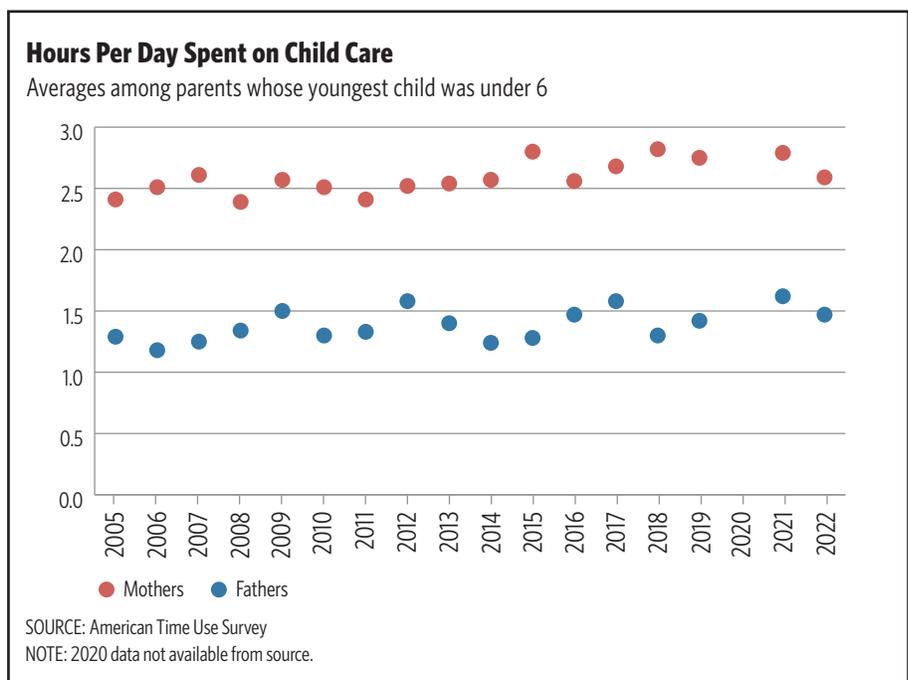
To be sure, women’s labor force participation has increased a lot over the years alongside decreases in the gender wage gap and increases in women’s education levels and work experience, which are both causes and effects. Claudia Goldin, an economist at Harvard University who has spent her career examining female labor force participation, argues that while women have gained access to jobs over time, they still struggle to have actual careers. Careers require sustained engagement with the world of paid work, and continued investment. So interrupting a career trajectory to have children makes such investments that much harder. Goldin finds that even very highly

educated women are much less likely to be in full careers, as the percentage of women with advanced degrees who work and have kids is only around 30 percent.

The trade-offs families make between child care and work are a key part of this story. Data from the Bureau of Labor Statistics show that while women with children work less, on average, men with children actually work *more*, a finding supported by new research in a recent Richmond Fed working paper. Surveys also indicate that mothers spend more time than fathers caring for young children. (See chart.) All of this suggests that both parents “care” for their children: women by spending more time on child care and men by working longer hours to support additional family members.

So why might there be something better for everyone than the status quo? One reason is that some markets can operate at a high, or low, level of activity, simply because people *expect* them to. Take the adoption of credit cards: If a bank issues a card, people want it only if they think merchants will accept it, but merchants will accept it only if they think people will use it. Chicken: Meet egg.

The child care and work ecosystem, in my view, has this flavor. On one hand, if few workers use market child care, no one bothers with the fixed costs of setting it up at scale. On the other hand, if enough workers don’t ask for jobs flexible enough to balance career and caregiving, employers won’t set up or provide child care. Yet if very few employers



offer child care, it only gets harder for potential employees to ask for it. We're then stuck with the status quo doom loop, where many — mostly women, if caregiving data are taken on board — face a silent “tax” on building skills for a career, while employers lose out on workers who may actually be the most productive and the best match, especially in the time- and engagement-intensive fields. For example, Claudia Goldin estimates that the female-to-male gender earnings ratio ranges from 0.9 among college graduates working full time in health-related occupations, to as low as 0.75 among MDs and JDs. When this happens, society loses out, too.

But I think there might be a way out of this loop to a world where child care and more flexible work arrangements are ubiquitous so people, especially women, can opt for *careers over jobs* — a world that rewards both businesses’ investment in their employees with children *and* employees’ career choices. The business community — coordinated by chambers of commerce — will ideally seek to support policies that benefit *all* employers. Here this means, first, that businesses can boost the supply of child care and flexible work by using the lessons learned from the pandemic and technology and ensuring the regulatory landscape (think licensing and monitoring of care sites) is not proving to be a hidden tax on employers, employees,

and society generally. Second, businesses as a whole hold a key lever: They can boost demand for child care and flexible work by subsidizing that care or maybe even directly supporting or providing it. The takeaway: Business leaders can help business overall — and all of us — when they help make access to more career pathways less time-intensive.

Admittedly, this will be hard, because unlike the NBA, where there are only 30 owners who can coordinate on league-level practices and talent strategy, the Census Bureau reports that there are over 8 million businesses in the United States, and just under 200,000 of them have over 100 employees! In other words, there is no “U.S. Labor Market Talent Academy.” And there really *can’t* be.

All of this is macroeconomic in scale. Over 11 percent of the labor force has kids under the age of 5. Almost a quarter has kids under the age of 13. Total spending on formal child care in 2021 was around \$121.7 billion (0.5 percent of GDP). That adds up to quite a lot in an economy like ours. And because of this, our child care and work policies need to also be seen as macroeconomic policies. When that happens, we’ll get a little bit further down the path to a place where everyone wins. **EF**

Kartik Athreya is executive vice president and director of research at the Federal Reserve Bank of Richmond.



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FEDERAL RESERVE BANK BOARDS

The architects of the Fed wanted the boards of directors of the 12 regional banks to be “independent of politics” and “thoroughly representative of the various interests and districts of the country.” What do Reserve Bank directors do in governing their institutions, and how does the Fed put these ideas into practice today?

HOW THE PANDEMIC ERA CHANGED PRICE-SETTING

Price-setting is hard even in normal times; over the past few years, shocks such as the pandemic have made it harder. Research has indicated that many companies benefited from the volatility, with markups increasing at the fastest pace since the 1950s.

RURAL RENTAL HOUSING

Rental units offer a way to expand affordable housing in rural places for residents who can't afford to buy a single-family home. But investment in the rural rental market has long lagged development of owner-occupied homes. In the Fifth District, apartments account for only 12 percent of the rural housing stock. What's holding rental developers back?

THE CDFI SURVEY

Community development financial institutions (CDFIs) provide financial services to individuals and communities underserved by traditional lenders. Every two years, the Fed's CDFI survey, pioneered by the Richmond Fed in 2009, gathers information about these institutions' practices and challenges.

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CENTER FOR
**ADVANCING WOMEN
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The Richmond Fed recently launched its Center for Advancing Women in Economics to champion diversity in the field of economics and enrich economic research and policymaking by mentoring, connecting, and promoting the high-quality research of women.

The Center will:

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 - Provide personalized mentorship opportunities
 - Spotlight the research and experiences of women economists

To learn more about the Center and its mission, please visit our website: <https://www.richmondfed.org/research/AWE>