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The Economic Evolution of Cuyahoga County

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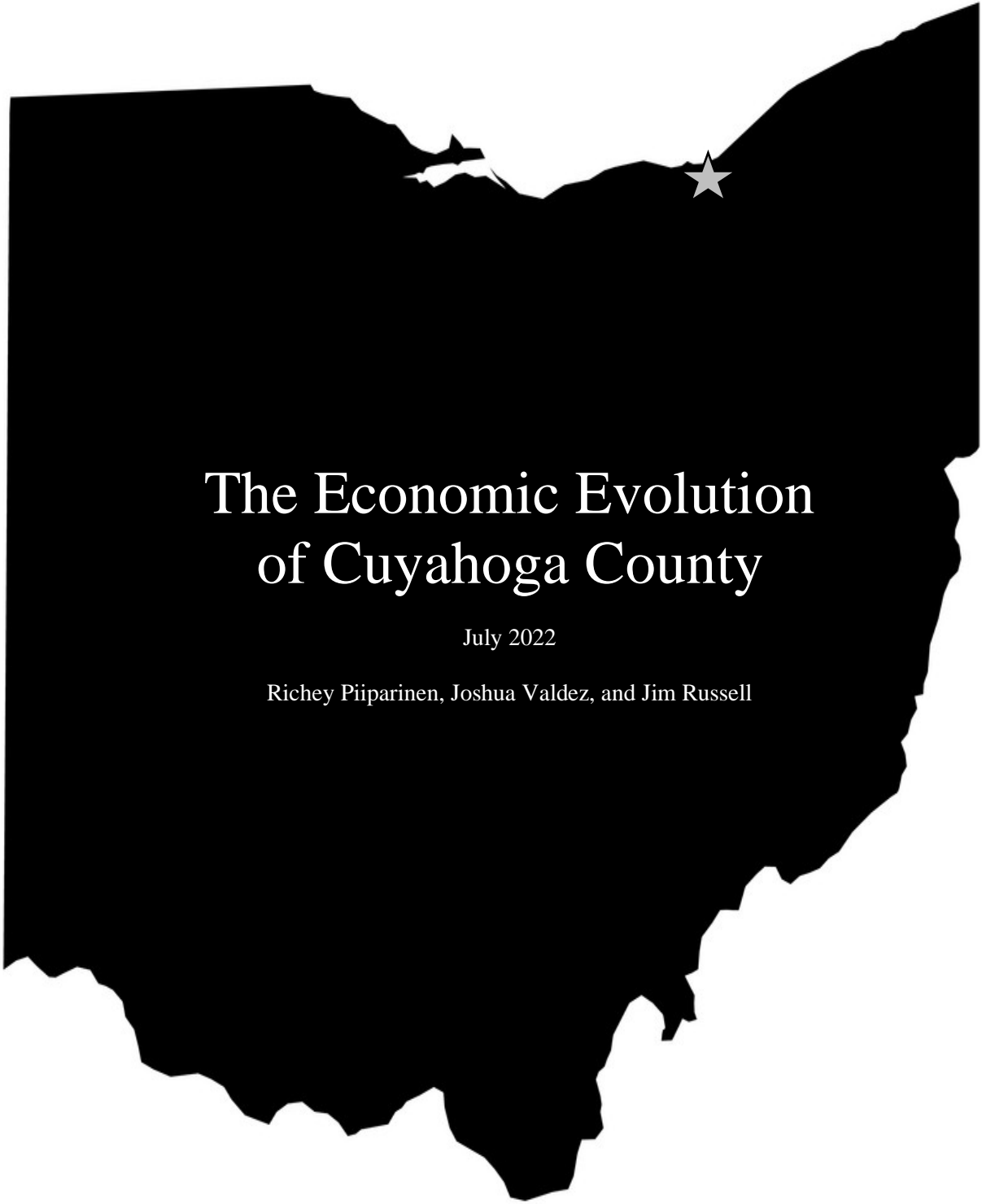
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The Economic Evolution of Cuyahoga County

July 2022

Richey Piiparinen, Joshua Valdez, and Jim Russell



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Background

Cleveland's progress can be intimidated through a variety of topics. Some topics—like “globalization,” “innovation,” “deindustrialization,” and “pandemic”—seem big and distant, while others are less abstract and more local, such as “jobs,” “income,” “housing,” “policing,” “education,” and “health”. Then there are some topics that are viscerally personal, if only because the direct impact they have on the mind and body. These include “foreclosure,” “lead,” “infant mortality,” “opioids,” “police brutality”, and “pneumonia”.

While these issues are of topical concern in their own right, their vastness in scope can be disorienting to those charged with guiding progress. No doubt, a multitude of efforts exist to gather data and distill information on Ohio, be they academic, non-profit, or journalistic. In turn, initiatives are kicked off to spur solutions in receipt of said information. But these initiatives often struggle to find footing. This is partly because we lack a theory of change that ties various threads of information into a body of knowledge, and ultimately a collective vision.

Put another way, everything is connected: the global, the local, and the individual. The COVID-19 pandemic is a hard-charging testament to that fact, as is the murder of George Floyd in which an assault on a Minneapolis street rippled into marches on the world's streets. And the quicker we can elucidate those connections, the faster that collective efforts can move beyond intention and action and into individual impact.

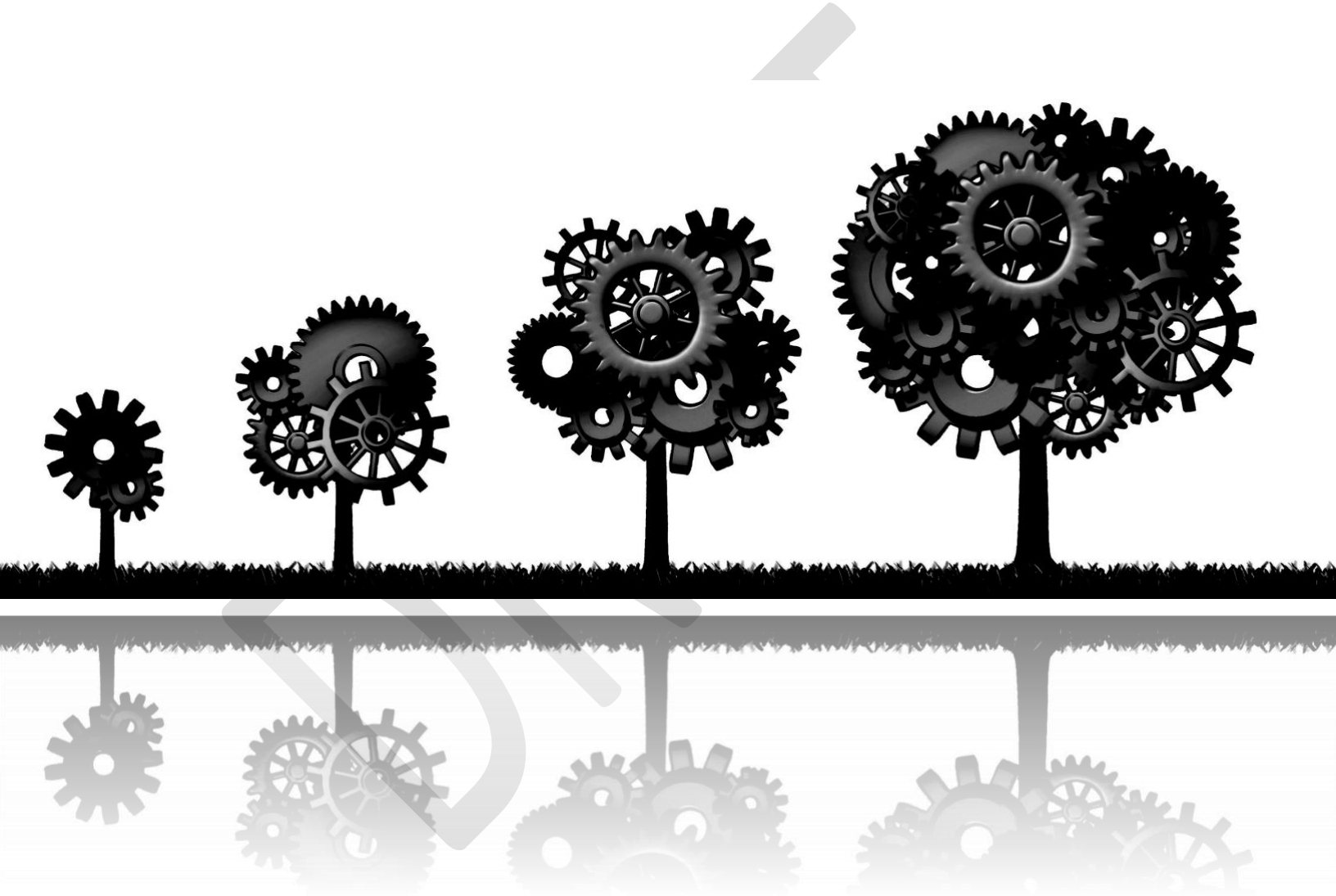
This is no small task. Problems, after all, are structural, while solutions are local. Care is thus needed in the analysis of each, if only because many of our problems are not in our control, yet the “fix” to those problems must be.

The following is a policy white paper called “The Future of Growth”, created through a partnership between Cleveland State's Center on Urban Theory and Analytics and Rust Belt Analytica. The goal is to simplify the complex of how and why the global economy changes, examining how those changes impact regional economies, neighborhood conditions, and ultimately individual well-being. Along the way, assumptions are challenged. For example, is population growth an accurate way to measure progress? Or do measures of productivity and longevity offer a better strategic approach? The former presumes that it's the quantity of lives that matters, whereas the latter suggests it's about the quality of life.

With this and other data in hand, the intent is to scaffold the information it into a collective awareness of where Cleveland is, where it was, and where we need to be. Importantly, the result of this effort is intended to go beyond an ability to make better-informed decisions via the stacking of facts. Progress is less linear than that. It is equally about busting out of old paradigms of thought. As the theoretical physicist David Bohm put it: “The ability to perceive or think differently is more important than the knowledge gained.” If current events teach us anything, it's that: thinking differently when the choice to think differently was made for us.



PART 1: THE EVOLUTION OF GROWTH

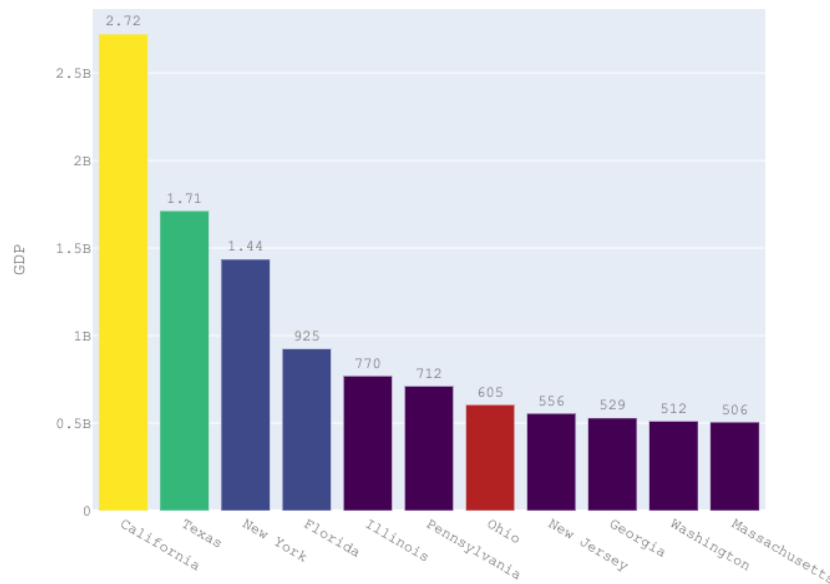


Quantity of Lives V. Quality of Life

The “front door” to any economic inquiry is through the lens of Gross Domestic Product (GDP). The Bureau of Economic Analysis (BEA) defines GDP as “a comprehensive measure of U.S. economic activity” that calculates “the value of the goods and services produced” in a given time at a specific place¹. That said, GDP is an imperfect measure, as are all standalone measures. Why that is will be unpacked. Consider this initial section a level-setting. One that’s necessary, if rudimentary.

Nationally, Ohio’s economic output ranks 7th. While the state is no California, Texas, or New York, having a top 10 economy in the world’s hegemonic power is significant at face value, and it represents as an opportunity geography for the majority of the global population.

Figure 1: Largest State Economies by Total Real GDP. Source: BEA, 2018 (in 2012\$)



Drilling down only enriches this perspective, especially regarding the economic impact of Ohio’s big cities. The metropolitan statistical areas (MSAs) of Cincinnati (\$124.95 billion), Cleveland (\$119.33 billion), and Columbus (\$114.68 billion) rank as the 28th, 33rd, and 35th largest in the nation respectively (out of 384 MSAs). What’s more, the GDP for the MSAs of Cincinnati, Cleveland, and Columbus as a group equals \$358.95 billion, making up 59.3% of the state’s total economic output.

A last slice of the data further disaggregates where Ohio’s economic output is sourced. The BEA just released new figures showing total real GDP at the county level. They were the first of their kind. Cuyahoga County’s total real GDP of \$87.7 billion ranked as the 31st largest economy in the nation. That puts Cuyahoga in the top one percentile (See Figure 2). **In Ohio, Cuyahoga makes up nearly 15% of Ohio’s GDP. Along with Columbus’ Franklin and Cincinnati’s Hamilton counties, the three big-city counties represent over 40% of the state’s total output (See Figure 3).**

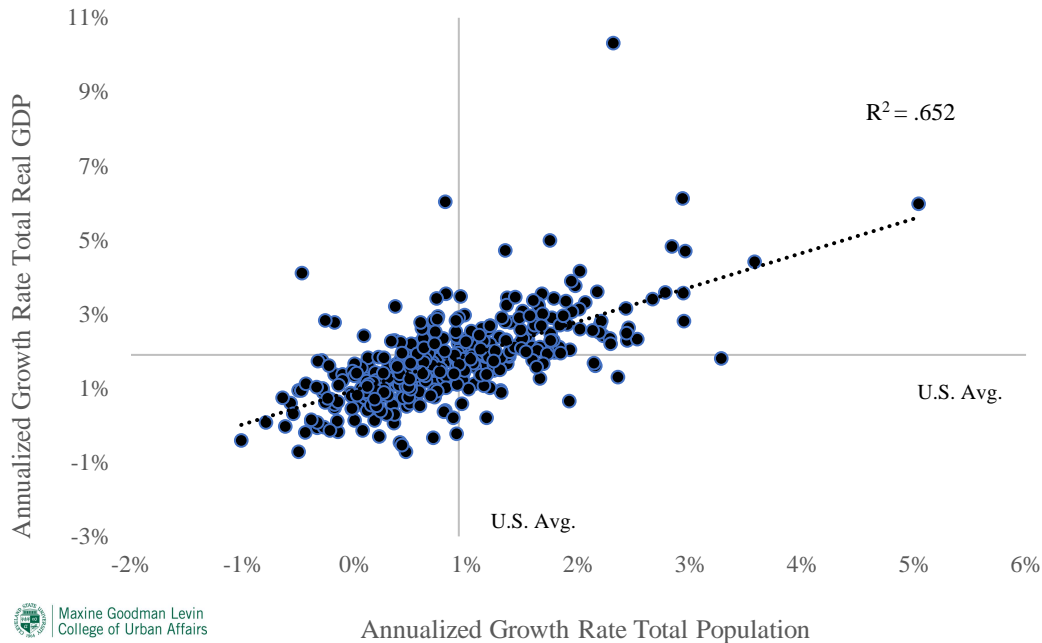
The question now turns to: “So what?” Will economic growth as a concept of magnitudes stand the test of time? It’s a big question. One that will echo throughout.

¹<https://www.bea.gov/resources/learning-center/what-to-know-gdp>



What makes a place successful? The answer depends on the definition of “success”. One benchmark, total GDP, was just examined. GDP, in turn, is a function of two factors: a growing labor force and a more productive labor force. The former implies quantity, the latter quality. When we talk quantity in this respect one thing inevitably comes to mind: population growth. The logic isn’t faulty. Figure 4 shows there is a positive correlation between a metro’s population growth and total GDP. This makes sense: grow people, grow consumption, grow growth.

Figure 4: Annualized Population Growth Rate v. Annualized Total GDP for all MSAs. Source: BEA, 2001 and 2018.



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For lay people and policymakers alike, population growth has become *the* default metric of success. If a place is growing it’s succeeding, if a place is shrinking it’s not. This belief is undergirded by a bigger-is-better bias that guides so much of human decision-making². “[P]eople in the United States tend to have an implicit association in memory that bigger is better,” note the authors of the study “When Bigger Is Better (and When It Is Not): Implicit Bias in Numeric Judgments”. This leads people to associate higher numbers with higher quality even in situations where it should not. The writer Elias Canetti referred to this as the “modern frenzy of the increase.”³

A query of big city paper’s after the annual Census tally is illustrative. A bigger-is-better bias bleeds through the finger-wagging headlines that follow:

“Cook County Sees Country's Largest Population Loss”, WBEZ Chicago, April, 2019⁴.

“New York is losing residents at an alarming rate,” *New York Post*, December, 2019⁵.

“California’s population growth is the slowest in recorded history”, *Los Angeles Times*, May, 2019⁶.

² <https://academic.oup.com/jcr/article-abstract/44/1/62/2910770?redirectedFrom=fulltext>

³ Crowds and Power By Elias Canetti

⁴ <https://www.wbez.org/shows/wbez-news/cook-county-sees-countrys-largest-population-loss/d14c43e9-7ddb-4f2c-b27b-1b19a3469ec1>

⁵ <https://nypost.com/2019/12/30/new-york-is-losing-residents-at-an-alarming-rate-report/>

⁶ <https://www.latimes.com/local/lanow/la-me-ln-population-growth-20190501-story.html>

“Los Angeles County suffers nation’s worst population outflow,” *Los Angeles Daily News*, June, 2019⁷.

Meanwhile, a sense of assuredness comes through in the headlines of fastest-growing places:

“Myrtle Beach is the second-fastest growing metropolitan area in the country, again”, ABC News 4, April, 2019⁸.

“Jacksonville Among Nation’s Fastest Growing Cities,” WCJT Jacksonville, May, 2019⁹.

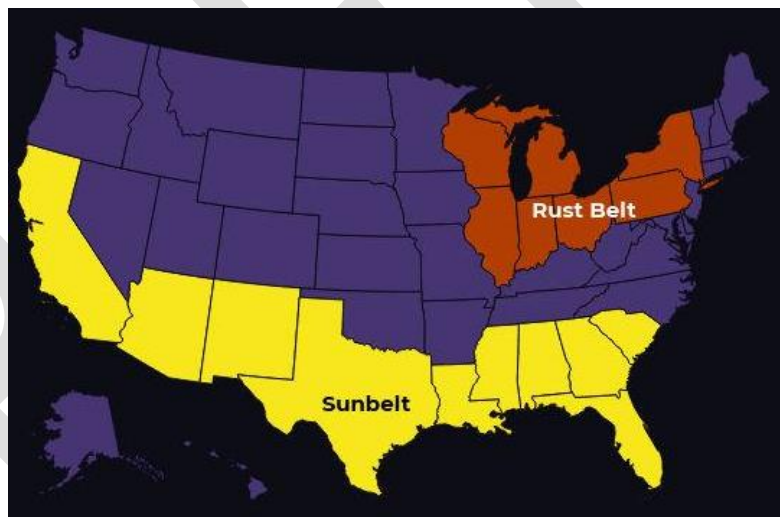
“Two Texas Oil Towns Among Metros with Fastest Population Growth,” *Bloomberg*, April, 2019¹⁰.

“Census declares Meridian as 5th fastest-growing city,” *Idaho Statesman*, May, 2019¹¹.

But growth does not equal development. A place can add a quantity of people, yet still lose out on quality of life; and vice versa: a place can lose a quantity of people yet gain on quality of life. It’s important, then, to disaggregate from broad-brushed measures of success, such as population growth and total GDP. In his *Quartz* piece “Stop obsessing about GDP growth—GDP per capita is far more important”, economist reporter Dan Kopf discusses how total GDP growth is a misleading measure¹². “A country’s aggregate economic growth is not what matters,” he writes. “What matters is whether the people living in a country are getting wealthier”. A better, albeit imperfect, measure is real GDP per capita, calculated as total economic output divided by total population. It’s the most commonly accepted measure of a place’s standard of living¹³.

Figure 5: Map of the Rust Belt and Sun Belt. Source: Richland

A simple trend analysis demonstrates this point. Regions in the South and Southwest lead the way in terms of a growing population. The top seven fastest-growing big-city metros from 2001 to 2018 are in the Sun Belt: Austin, Las Vegas, Orlando, Houston, Charlotte, Phoenix, and San Antonio. The slowest-growing? They are in the Rust Belt: Cleveland, Pittsburgh, Detroit, Providence, R.I., Chicago, St. Louis, and Milwaukee.



But in terms of real GDP per capita, a different reality comes into focus (See Figure 6). In 2001, the regions’ GDP per capitass were nearly equal. By 2007, the Sun Belt (\$56,188) overtook the Rust Belt (\$54,762). Since the Great Recession, though, the regions’ paths have diverged. Today, the Rust Belt’s real GDP per capita (\$59,073) is nearly \$4.5k more than the Sun Belt’s (\$54,604).

⁷ <https://www.mercurynews.com/2019/06/25/la-county-nets-98608-more-departures-than-arrivals-nations-worst-population-outflow/>

⁸ <https://abcnews4.com/news/local/census-myrtle-beach-is-the-second-fastest-growing-metropolitan-area-in-the-country>

⁹ <https://news.wjct.org/post/jacksonville-among-nation-s-fastest-growing-cities>

¹⁰ <https://www.bloomberg.com/news/articles/2019-04-19/two-texas-oil-towns-among-metros-with-fastest-population-growth>

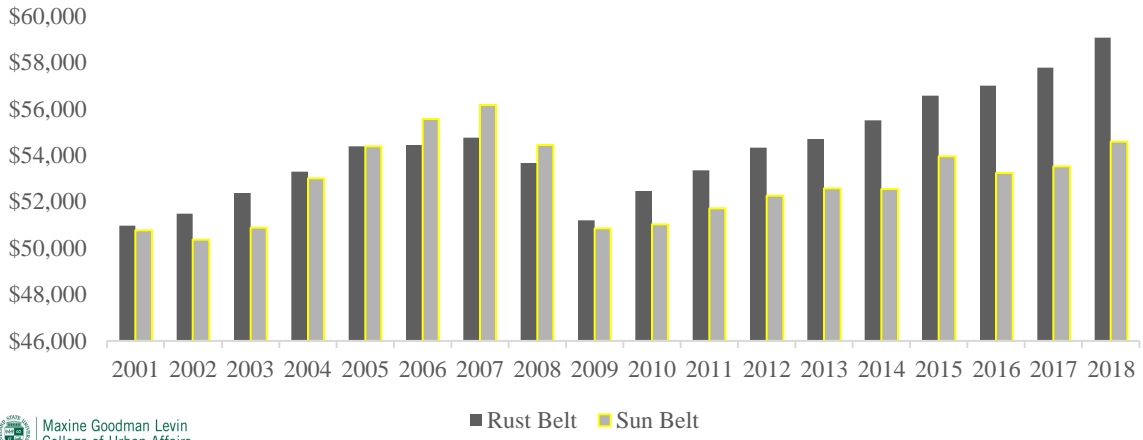
¹¹ https://www.idahopress.com/meridian/news/government/census-declares-meridian-as-th-fastest-growing-city/article_dd86261d-7293-53cb-875f-bbec8fe2cf23.html

¹² <https://qz.com/1194634/the-world-bank-wont-stop-reporting-gdp-instead-of-gdp-per-capita-and-it-is-driving-me-crazy/>

¹³ <https://research.stlouisfed.org/publications/page1-econ/2017/09/01/why-are-some-countries-rich-and-others-poor/>

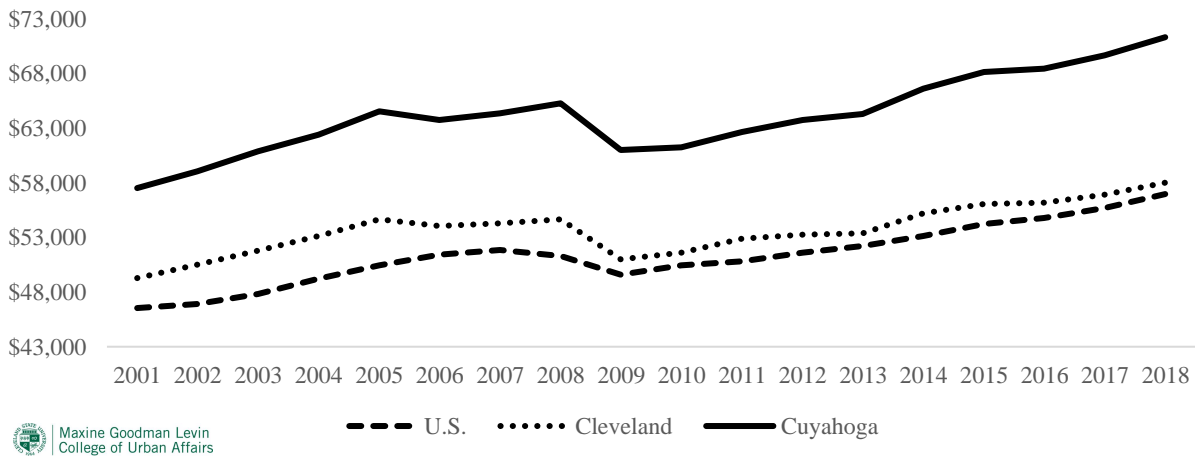


Figure 6: Real GDP Per Capita in the Rust Belt v. the Sun Belt. Source: BEA, 2001-2018



A similar story unfolds when looking at Cleveland and Cuyahoga County. The metro’s real GDP per capita increased from \$49,280 to \$58,010, just above the nation’s (\$56,968). At the county level, Cuyahoga County’s real GDP per capita increased from \$57,518 to \$71,325, ranking 67th out of the nation’s most populous 500 counties.

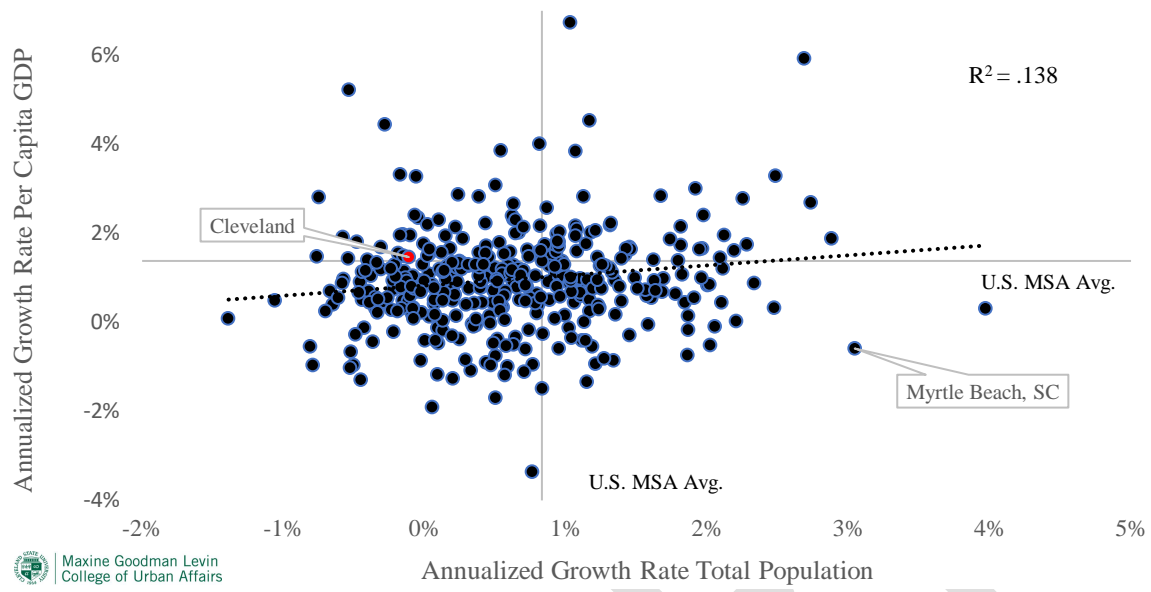
Figure 7: GDP Per Capita for Cleveland MSA, Cuyahoga County, and the U.S. Source BEA (in 2012\$)



A last slice of the data looks at how real GDP per capita is growing across time. Figure 8 plots the annualized growth rates of GDP per capita and total population for all 384 metros since the Great Recession. There is no correlation between population growth and productivity increases ($R^2 = .138$). For instance, the [metro of Myrtle Beach, S.C.](#)—which ranked near the top in total population growth—had a declining real GDP per capita since 2010 (from \$32.4K to \$30.9K). Such are the “growth-without-prosperity” cities (lower-right quadrant). Cleveland, however, is in the upper-left quadrant, characterized by metros that lag in population growth but lead in productivity growth. Cleveland’s population growth rate of -0.11% is far below the average of all metros (0.83%), but its real per capita GDP growth rate of 1.47% is higher (1.38%). Other big-city metros in this category include Pittsburgh, Chicago, Detroit, and Los Angeles.



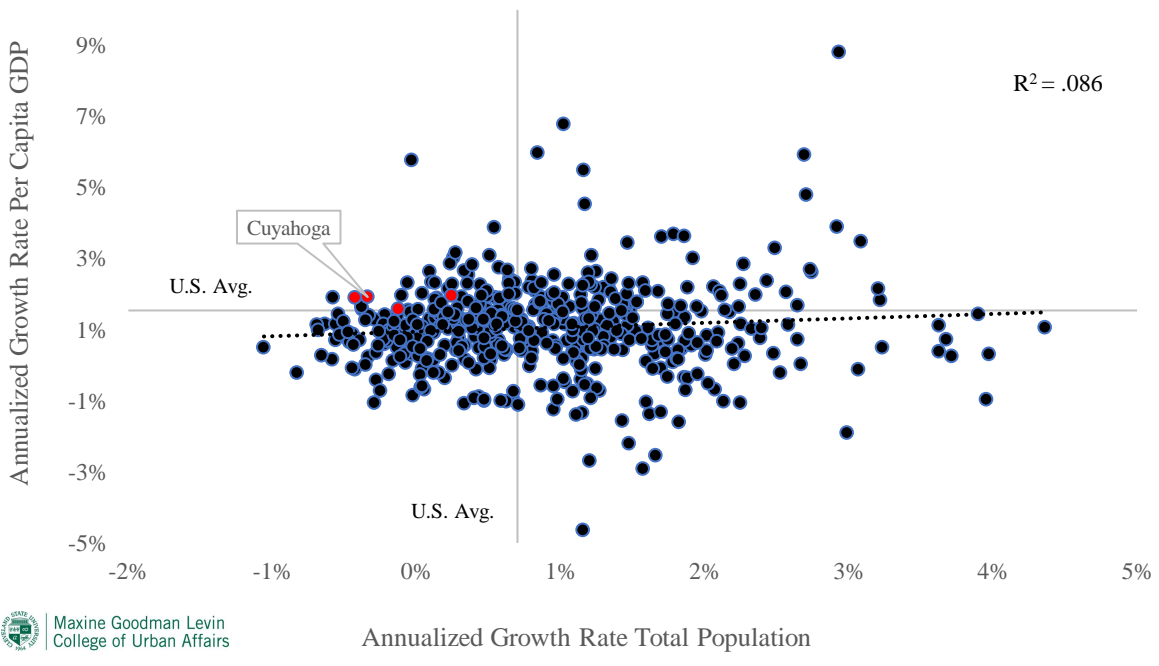
Figure 8: Annualized Population and Real GDP Per Capita Growth for all MSAs, 2010-2018. Source: BEA



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County-level trends paint a similar picture (See Figure 9). Cuyahoga County’s annualized population growth rate since 2010 was -0.3%. That’s below the national rate of 0.7%. But its real GDP per capita growth (1.92%) was higher than the national rate (1.54%).

Figure 9: Annualized Population and Real GDP Per Capita Growth for Big-City Counties, 2010-2018. Source: BEA



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The literature on population versus productivity growth—or quality versus quantity—isn’t new. In a 2002 Brookings paper, economist Paul Gottlieb analyzed whether it was possible for regions to “grow without growth”¹⁴. His investigation answered in the affirmative. A decade later urbanist Richard Florida updated a version of the analysis for the *Atlantic*¹⁵. His takeaway?

“A rising population can create a false illusion of prosperity, as it did in so many Sunbelt metros, which built their house-of-cards economies around housing construction and real estate development... The south and the west may be winning the demographic race, but America’s economic winners are the places that have improved their productivity—something which doesn’t turn on the sheer numbers of workers they have on tap, but rather on how skilled and innovative they are.”

The Evolution of the Global Economy

A Theory of Change

Knowledge drives economic growth. It does so two ways: by being applied to existing processes so there’s efficiencies in the making of goods and delivery of services (think robots and car making); and by fueling innovation, leading to next-order processes (think artificial intelligence and driverless cars). Successful cities have economies that are knowledge-based. The regions with the nation’s highest real GDP per capita, for instance, are all recognized as knowledge economy “hotspots” (See Table 2).

Table 2: Top 5 Real GDP Per Capita, Largest 40 MSAs. Source: BEA, 2018.

Metro	2018
San Jose, CA	\$159.6
San Francisco, CA	\$105.1
Seattle, WA	\$90.3
Boston, MA	\$84.7
New York, NY	\$79.4

That a city can be successful or not implies their economies evolve, or else get left back. There are numerous theories describing this evolution, but one theory in particular is helpful. It’s an “evolutionary economics”¹⁶ concept called the “Four Sector Theory”¹⁷. It explains that the global economy had a “Primary” stage that was natural resource-driven (circa 1800s), leading to a “Secondary” stage that was industrially-driven (circa 1940s), followed by a “Tertiary” stage which is one of service provision. In Cleveland this meant an economy backstopped by the likes of Standard Oil in the late 1800s, to Ford in the mid-20th century, to Cleveland Clinic today.

The latest, most emergent stage, “Quaternary”, is all about the cutting-edges of technology. Think big data, computer processing, and artificial intelligence, and the resultant impact they have not only on market activities, but on human well-being. To date, so-called “big tech” firms are the purveyors of the Quaternary era, as are the academic entities that drive the R&D that advances techne’s commercial use¹⁸.

Table 3 illustrates tech’s rising dominance, showing the top firms by market capitalization over a hundred-year period. Note the evolution of the highest-valued firms and their position in the marketplace: going from natural resource (Primary) and raw materials (Secondary) in 1919, to tech’s capital accumulation via the likes of Apple, Alphabet, Microsoft, and Amazon (Quaternary).

Table 3: Top firms by market capitalization, 1917 and 2017. Source: S & P 500

1917	2017
U.S. Steel (Steel)	Apple (Tech)
American Telephone & Telegraph (Telecom)	Alphabet (Tech)
Standard Oil of N.J. (Oil)	Microsoft (Tech)
Bethlehem Steel (Steel)	Amazon (Tech)
Armour & Co. (Food)	Berkshire Hathaway (Conglomerate)

Just as firms rise and fall in harmony with economic change, so do the cities where these firms exist. Where a given city rests on this evolutionary continuum can be gauged by

¹⁴ <https://www.brookings.edu/research/growth-without-growth-an-alternative-economic-development-goal-for-metropolitan-areas/>

¹⁵ <https://www.theatlantic.com/business/archive/2011/04/the-metro-story-growth-without-growth/73368/>

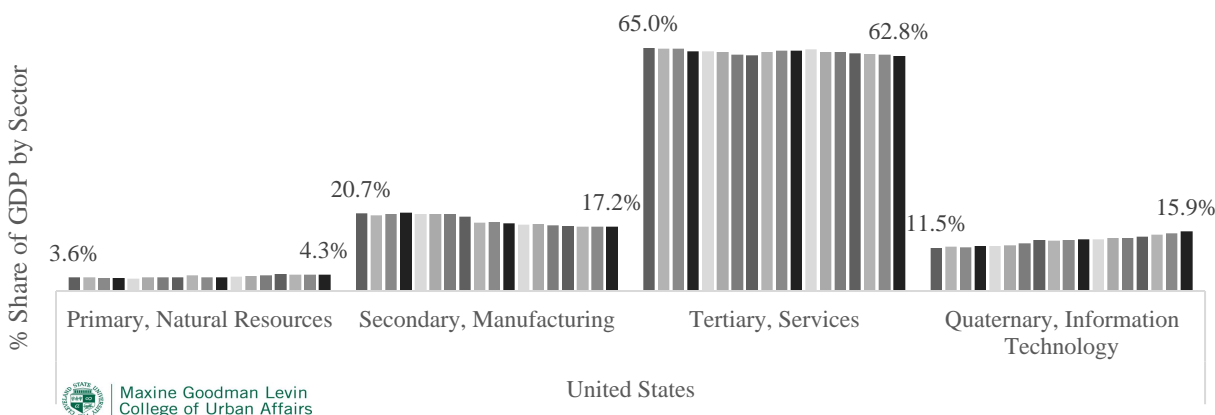
¹⁶ <https://www.hup.harvard.edu/catalog.php?isbn=9780674272286>

¹⁷ Fisher, Allan GB. "Production, Primary, Secondary and Tertiary." *Economic Record* 15.1 (1939): 24-38

¹⁸ <https://press.princeton.edu/books/hardcover/9780691117164/cities-of-knowledge>

looking at what industries drive their GDP¹⁹. The BEA segments GDP into industries using the North American Industry Classification System (NAICS)²⁰, which can then be classified into the Primary, Secondary, Tertiary, and Quaternary sectors (See Table 4)²¹. The more an economy is driven by Tertiary and Quaternary sectors, the more they have gone through “economic restructuring”²²—a term denoting an evolution from a labor- to knowledge-based activities.

Figure 10: Share of Total Real GDP by Sector for United States, 2001 to 2018. Source: BEA.



The evolution of the national economy since 2001 is shown in Figure 10. The nation’s compositional share of GDP from the Natural Resources, or Primary, sector has stayed low: from 3.6% to 4.3% (See Figure 10). The share of GDP from the Manufacturing, or Secondary, sector has declined, going from 20.7% to 17.2%. Note, though, the emergence of the Information Technology, or Quaternary, sector, accounting for 15.9% of GDP, up from 11.5% in 2001. Still, the U.S. is a predominantly service-oriented economy, comprising 62.8% of GDP. These trends are in line with the evolutionary theory espoused above.

Economic Evolution in Cleveland and Other Iconic Cities

Many places, including Cleveland, have gone through the first economic restructuring from Manufacturing to Services. Fewer places have gone through the second economic restructuring from Services to Information Technology. The latter restructuring has been dubbed “The Fourth

Table 4: Industry NAICS Codes Classified into Sectors	
Primary	Natural resources and mining
Secondary	Construction Manufacturing Utilities Wholesale trade Transportation and warehousing Retail trade Accommodation and food services
Tertiary	Other services (except government and government enterprises) Administrative and support and waste management and remediation services Educational services and Health care Management of companies and enterprises Finance, insurance, real estate, rental, and leasing Arts, entertainment, and recreation
Quaternary	Information Professional, scientific, and technical services

¹⁹ <https://link.springer.com/content/pdf/10.1007/s00181-011-0510-z.pdf>

²⁰ <https://www.census.gov/eos/www/naics/>

²¹ Note: The BEA classifies industries into goods-producing (Secondary) and service-providing (Tertiary). This analysis further breaks this down using the Four Sector Theory. To do this, Natural resource and mining is classified as Primary, and information and professional, scientific, and technical services are classified as Quaternary. All other categories fall into BEA’s original designations.

²² <https://www.stlouisfed.org/publications/regional-economist/july-1993/restructuring-and-economic-growth-taking-the-longterm-view>



Industrial Revolution”, described as a set of technologies “such as artificial intelligence, genome editing, augmented reality, robotics, and 3-D printing, [that] are rapidly changing the way humans create, exchange, and distribute value.”

Though the U.S. is just entering the most emergent era, there are select places, like Santa Clara County—home to Silicon Valley—and San Francisco County that are already there. Figure 11 shows the GDP composition by sector for Santa Clara. Information Technology accounts for 41.4% of GDP, surpassing the Service sector (31%). Manufacturing, due to tech-driven products like semiconductors and robotics, remains strong, up to 28% of GDP. **San Francisco County trends are not dissimilar, outside of Manufacturing (See Figure 12). The compositional share is shifting from the Service economy to Information Technology, with Services going from 68.6% of total GDP to 50.7%, whereas Information Technology growth continues apace, now up to 42.6%.**

Figure 11: Share of Total Real GDP by Sector for Santa Clara County, 2001 to 2018. Source: BEA

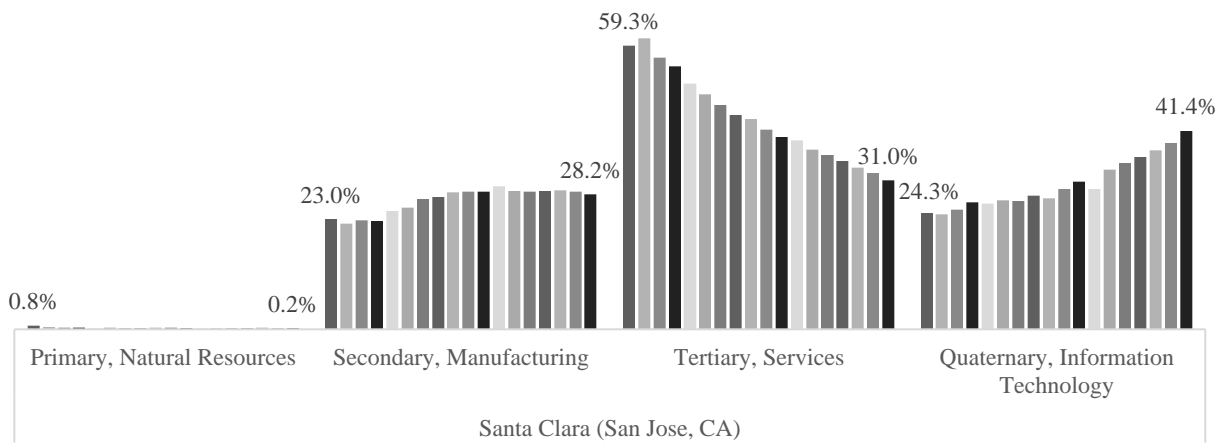


Figure 12: Share of Total Real GDP by Sector for San Francisco County, 2001 to 2018. Source: BEA



What these economic shifts in Northern California mean “on the ground” are varied in their ramifications. A recent *New York Times* piece “San Francisco Restaurants Can’t Afford Waiters. So They’re Putting Diners to Work” is fitting²³. Rising technologist incomes has meant a white-hot real estate market, which

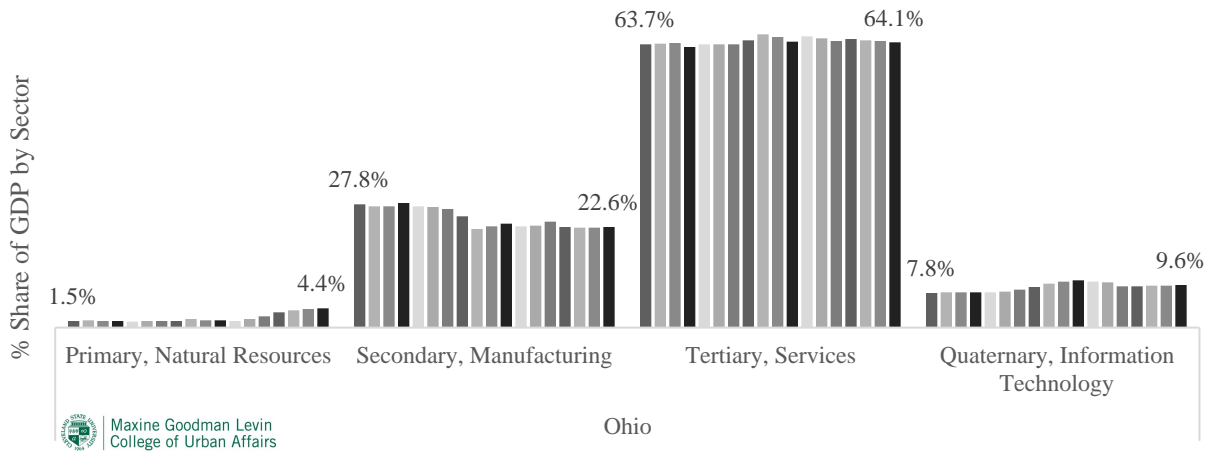
²³ <https://www.nytimes.com/2018/06/25/dining/san-francisco-restaurants-service.html>



has had a trickling down effect on how San Franciscans consume goods and get services. “Commercial rents have gone up,” notes the *New York Times*’ Emily Badger. “Labor costs have soared. And restaurant workers, many of them priced out by the expense of housing, have been moving away.” The economic output, then, that would otherwise come from waiters and waitresses is being partly absorbed by the “do-it-yourself” economy, i.e., [diners serving themselves](#). Such are the paradoxes of progress that come with advanced economic restructuring, chiefly among them: economic and residential displacement.

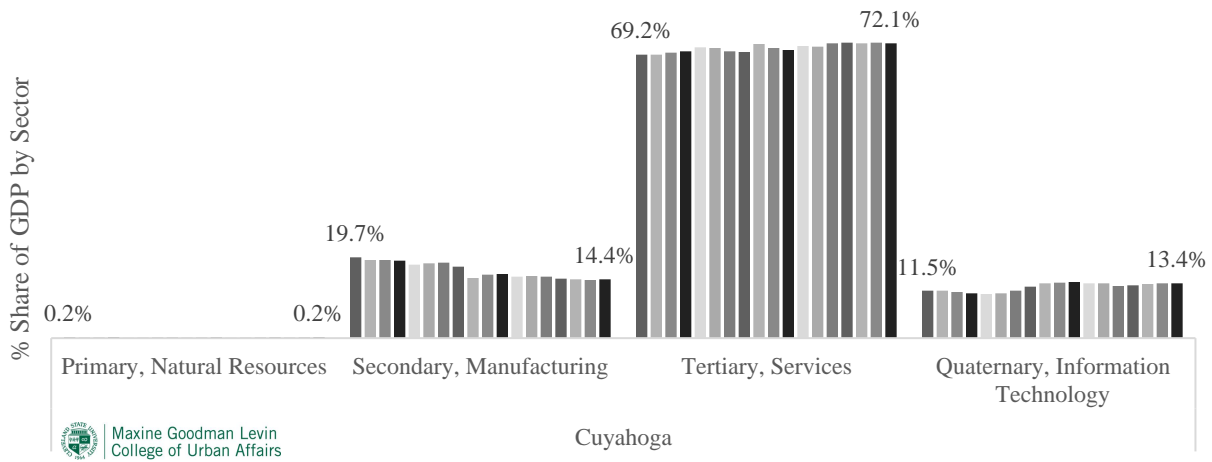
Trends in Ohio are less advanced. Figure 13 shows Manufacturing as a percent of total GDP declining from 27.8% to 22.6%, whereas the Service economy is responsible for 64.1%. But Ohio’s Information Technology output (9.6%) is below the national rate of 15.9%, suggesting the state as a whole is not keeping up with subsequent waves of innovation.

Figure 13: Share of Total Real GDP by Sector for Ohio, 2001 to 2018. Source: BEA



Cuyahoga County’s Information Technology economy is performing a little better (13.4% of total output), but the county’s entrée into the Fourth Industrial Revolution is still nascent (See Figure 14). As expected, Manufacturing as a share is down from 19.7% to 14.4%, whereas the Service sector accounts for over 72% of total GDP.

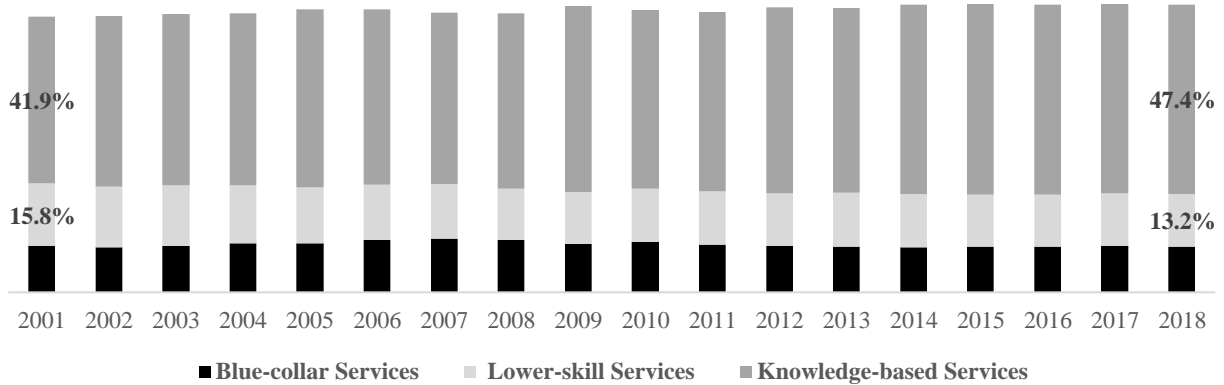
Figure 14: Share of Total Real GDP by Sector for Cuyahoga County, 2001 to 2018. Source: BEA





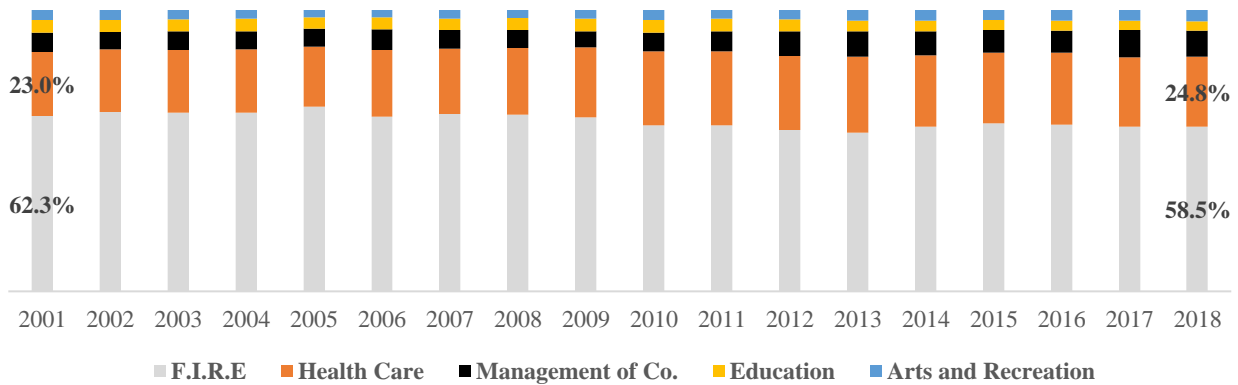
But not all services are created equal. There are Blue-collar Services, like transportation and warehousing; Lower-wage Services, like accommodations, food service, and retail; and Knowledge-based Services, like healthcare and finance²⁴. To the extent Cuyahoga County is still economically advancing entails assessing how much of its services are increasingly knowledge-oriented. In 2001, 41.9% of the county's total real GDP was from Knowledge-based Services (See Figure 15). By 2018 that number accounted for 47.4%.

Figure 15: Breakdown of Cuyahoga County's Service Sector as Composition of GDP



Disaggregating, over 83% of Cuyahoga County's Knowledge-based sector can be accounted for by two industries: finance, insurance, and real estate (FIRE) and healthcare (See Figure 16). Those two industries alone accounted for nearly 40% of the county's total real GDP.

Figure 16: Breakdown of Cuyahoga County's Knowledge-Based Services as Composition of GDP



So, can Cuyahoga County be characterized as the proverbial knowledge economy? No doubt. A comparison to a service economy that is less knowledge-based is helpful. Las Vegas' Clark County is nearly 82% Services and only 10.1% Information Technology (See Figure 17). The county's Lower-wage Service sector, in turn, is nearly 32% of its total GDP (See Figure 18), compared to 13.2% for Cuyahoga County. This helps explain why Cuyahoga's GDP per capita of \$71.3K is nearly 25K more than Las

²⁴ Note: Blue-collar Services include Utilities, Wholesale Trade, and Transportation and Warehousing. Lower-skill Services include Retail Trade, Accommodation and Food Services, Administrative and support and waste management and remediation services, and Other services. Knowledge-based Services include Finance, insurance, real estate, rental, and leasing, Education and Healthcare, Management of Companies and Enterprises, and Arts and Entertainment.



Vegas' Clark County (\$48.3K), and why the latter's annualized GDP per capita growth rate (0.68%) is a third of Cuyahoga's (1.94%) since 2010²⁵.

Figure 17: Share of Total Real GDP by Sector for Clark County, 2001 to 2018. Source: BEA

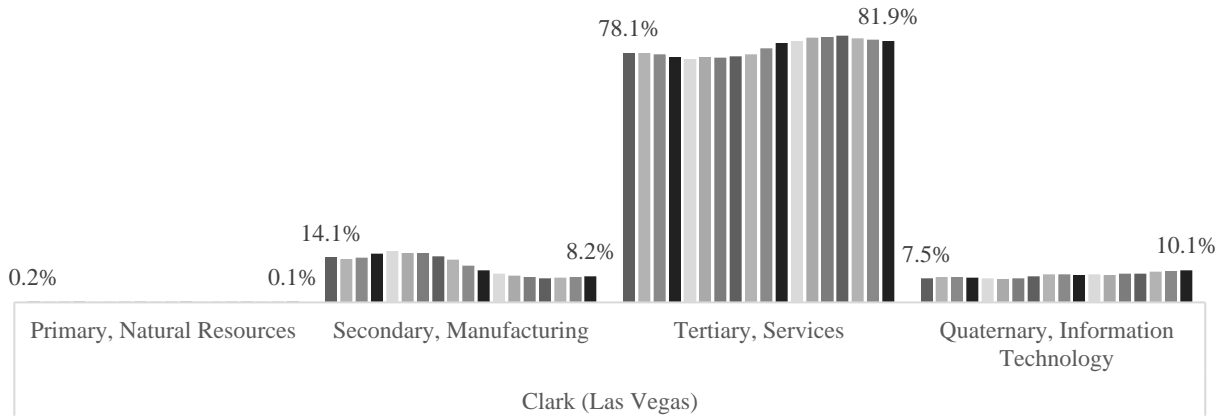
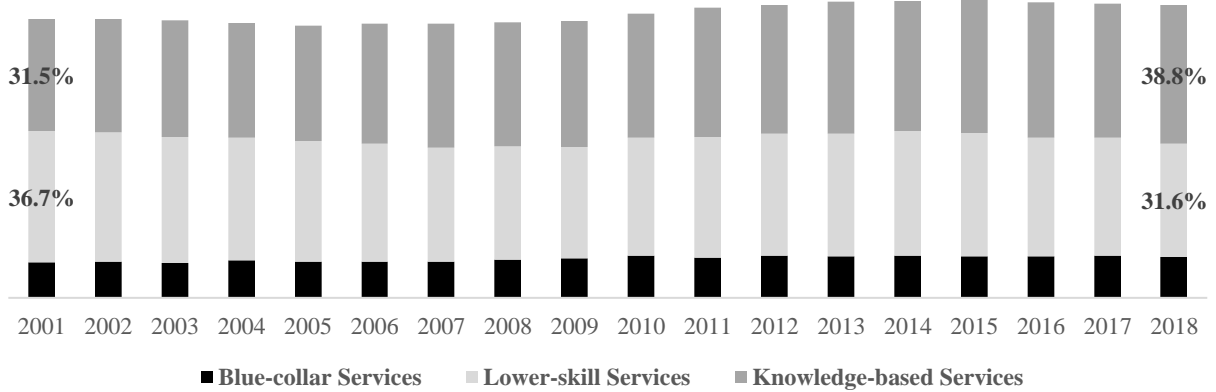


Figure 18: Breakdown of Clark County's Service Sector as Composition of GDP



It wasn't supposed to be this way. In his 2002 book "Neon Metropolis", UNLV historian Hal Rothman posited that Las Vegas provided a model for post-industrial American cities in the era of the service economy²⁶. Las Vegas, he argued, was proliferated with unionized service jobs that employed the working class. But that model was based exclusively on "end-of-the-food-chain" activities: eating, drinking, construction, and hospitality. And as the old axiom goes, you cannot consume if you don't produce. In fact, over-leveraged leisure and hospitality economies that require personal contact will bear a lot of the hurt for the foreseeable future due to contagion concerns related to COVID-19.

What big-city counties, then, offer a better roadmap of where Cleveland go in terms of an economic evolution? Boston's Middlesex County and Pittsburgh's Allegheny County are useful parallels. They are two regions with rich industrialist histories which, in turn, have given rise to world-class hospitals and universities. It's a lineage that has spurred technological advance via a keen development and use of computer science departments in the likes of MIT and Carnegie Mellon²⁷. Figure 19 shows Middlesex

²⁵ Source: Bureau of Economic Analysis, 2010, 2018.

²⁶ <https://www.theatlantic.com/business/archive/2012/07/the-hangover-how-las-vegas-explains-the-past-and-future-of-the-economy/260167/>

²⁷ https://engagedscholarship.csuohio.edu/urban_facpub/1279/

County is further along in its economic evolution, with 33.9% of its GDP from Information Technology. Allegheny County, too, has a rising Information Technology sector, up to 19.2% of total GDP.

Figure 19: Share of Total Real GDP by Sector for Middlesex County, 2001 to 2018. Source: BEA

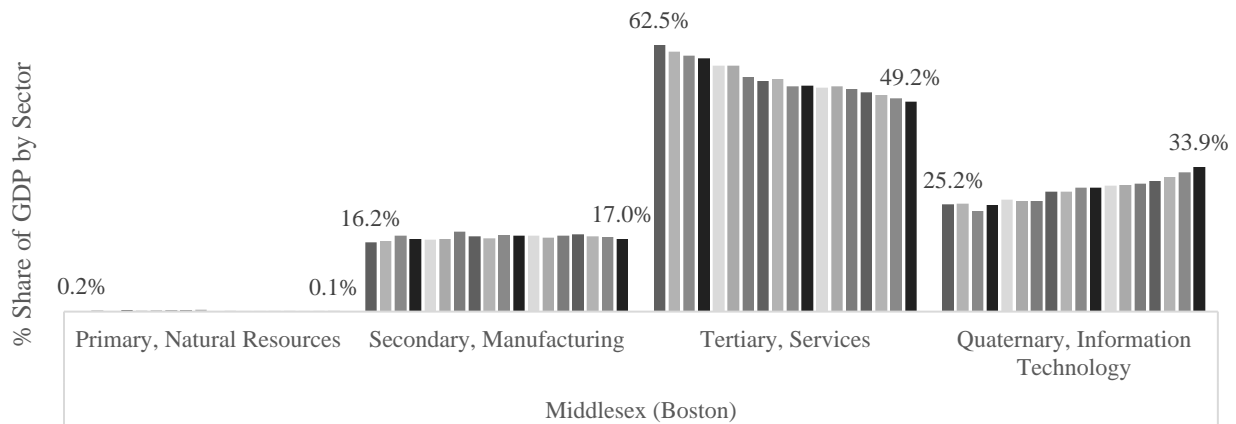
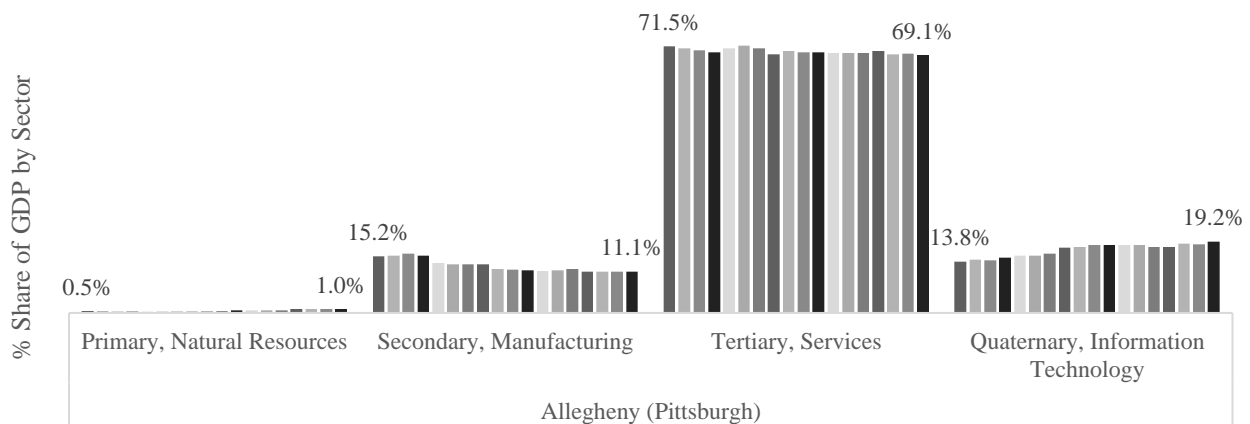


Figure 20: Share of Total Real GDP by Sector for Allegheny County, 2001 to 2018. Source: BEA



Boston’s and Pittsburgh’s shared history and emergence is in fact playing out in the strategic policy space, with a partnership tentatively called the “AI Triangle” in the works. In accordance with the University of Montreal, the so-called “600-mile commute” is being billed as an affordable option to Silicon Valley²⁸.

It’s a strategy that is increasingly making sense. Just as manufacturing deconcentrated from the Northeast and Midwest due to price constraints in the mid-20th century, so too is technology increasingly decamping from Northern California. “Our concentration in [San Francisco](#) is not serving us any longer,” noted Twitter CEO Jack Dorsey recently, “and we will strive to be a far more distributed workforce, which we will use to improve our execution.”²⁹

Post-COVID-19, Dorsey doubled down, announcing in mid-May that the stay-at-home policies enacted for emergency purposes would be extended indefinitely for the vast majority of employees³⁰. Other tech

²⁸ <https://www.post-gazette.com/business/tech-news/2020/01/31/AI-Triangle-Pittsburgh-Boston-Montreal-partnership-technology-money/stories/202001290141>

²⁹ <https://www.cnn.com/2020/02/08/twitter-ceo-jack-dorsey-san-francisco-comments-a-warning-sign.html>

³⁰ <https://www.buzzfeednews.com/article/alexkantowitz/twitter-will-allow-employees-to-work-at-home-forever>



companies, such as Square, have followed suit, with Google’s work-from-home policies mandated until at least 2021³¹.

Such trends are all part of the “death of distance” movement wherein where one works and lives has been decoupled³², with a place’s standard of living the “juice” for talent relocation. In this emergent movement, economic and community development are no longer mutually exclusive, but self-reinforcing. A better community attracts a teleworker whose firm exists in the ether of the internet, not in the bricks and mortar of space. Yet that salary of the telecommuter has the same multiplier effect in the local economy, supporting the likes of the mechanic, the butcher, and the cashier.

With the rise of COVID-19 and the social distancing practices becoming the new norm, expect these “death of distance” trends to advance, affecting dense, costly, technologically-oriented cities the hardest. The trend of inland Millennials, for instance, flocking to the coasts—one Brooklyn borough president recently remarked that NYC’s new arrivals needed to “go back to Iowa, go back to Ohio”³³—is now an outdated migratory model. What’s was “in”—urban consumer amenities meant to attract newcomers—is now “out”; and what was “out”—a city and state’s capacity to mitigate global risk via quick-witted policy and logistics—is now “in”. Ohio’s reputation re: its COVID-19 response is not simply a public health policy, but an economic development policy as well.

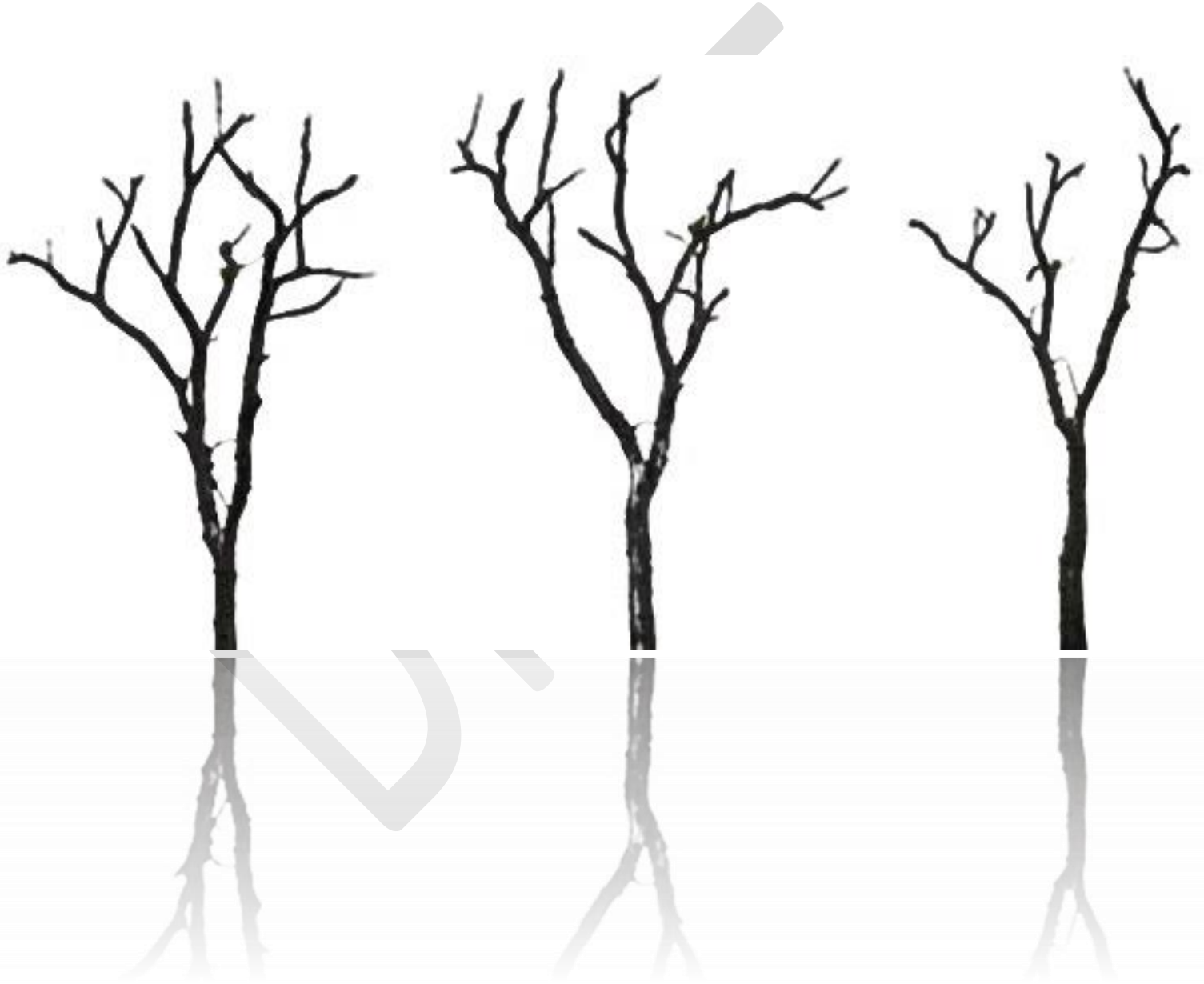
³¹ <https://www.nbcnews.com/tech/tech-news/following-twitter-square-also-let-employees-work-home-going-forward-n1209611>

³² <https://hbswk.hbs.edu/archive/the-death-of-distance-how-the-communications-revolution-is-changing-our-lives-distance-isn-t-what-it-used-to-be>

³³ <https://gothamist.com/news/brooklyn-borough-president-eric-adams-tells-nyc-newcomers-go-back-ohio>



PART 2: THE PROBLEMS OF GROWTH





Progress and Pain

The Great Decoupling

This analysis has so far benchmarked the size of the economy, or total GDP, as well as GDP per capita, a standard-of-living measure.³⁴ What's been less discussed is how and why GDP is an insufficient measure, if only because the end goal—growth—is so limitingly conceived.

“Our gross national product...counts air pollution and cigarette advertising and ambulances to clear our highways of carnage,” noted Robert Kennedy in a [campaign speech](#) 1968³⁵. “It counts special locks for our doors and the jails for the people who break them...Yet the gross national product does not allow for the health of our children, the quality of their education, or the joy of their play.”

The original architect of GDP, Simon Kuznets, forecasted these shortcomings when he was preparing the first national accounting system to the U.S. Congress in 1934. In his groundbreaking report, “National Income, 1929–1932”, Kuznets was simultaneously torn by a nation’s need to chart progress, i.e., “an index of productivity”³⁶, and its ability to chart progress, even subtitling a section of his paper “Uses and Abuses of National Income Measurements”. Decades later, his concerns only grew. “Distinctions must be kept in mind between quantity and quality of growth...Goals for more growth should specify more growth of what and for what.”³⁷

Part of the problem is that while GDP can chart the quantity of things produced—and GDP per capita can chart the average standard of living—what’s missing is a sense of how economic growth gets distributed. Equitably or not?

This partly depends on job access. Labor is the means by which goods are made and services are provisioned. But the rise of the Quaternary era has meant an increasing ability to automate tasks, from assembling to packaging to servicing to translation to diagnostics. The choice for execs, then, to increase output and reduce labor on one hand, or slow profit and bloat processes on the other, well, it often isn’t a choice. Efficiency reigns. “[E]xecutives are spending billions of dollars to transform their businesses into lean, digitized, highly automated operations,” explains Kevin Roose of the *New York Times*³⁸. “They crave the fat profit margins automation can deliver, and they see A.I. as a golden ticket to savings...letting them whittle thousands of workers down to just a few dozen.”

But there are pains to said progress, particularly the disruption of labor markets. “As automation substitutes for labor across the entire economy,” explains Klaus Schwab, founder of the World Economic Forum³⁹, “the net displacement of workers by machines might exacerbate the gap between returns to capital and returns to labor.”

What does this gap look like? A return look at Silicon Valley’s Santa Clara County is revealing. It is arguably the nation’s most advanced economy, a notion intimated by the popular moniker “becoming the next Silicon Valley”. Cities everywhere want massive GDP growth across a range of high-tech fields. What’s less alluring is that Silicon Valley’s growth is splitting from employment—a phenomena called the “great decoupling” by MIT’s Erik Brynjolfsson and Andrew McAfee⁴⁰.

³⁴ <https://www.thebalance.com/gdp-per-capita-formula-u-s-compared-to-highest-and-lowest-3305848>

³⁵ <https://www.jfklibrary.org/learn/about-jfk/the-kennedy-family/robert-f-kennedy/robert-f-kennedy-speeches/remarks-at-the-university-of-kansas-march-18-1968>

³⁶ <https://www.nber.org/chapters/c2258.pdf>

³⁷ https://en.wikiquote.org/wiki/Simon_Kuznets

³⁸ <https://www.nytimes.com/2019/01/25/technology/automation-davos-world-economic-forum.html>

³⁹ <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

⁴⁰ <https://hbr.org/2015/06/the-great-decoupling>



Figure 21 shows the GDP growth in Santa Clara’s Information Technology sector since 2001, gaining by a factor of 5. Meanwhile, employment in the sector remained relatively flat. Trends in the county’s Manufacturing sector were even more divergent: GDP growth grew by a factor of 3.5, whereas employment decreased in Santa Clara County by 70,500.

Figure 21: Santa Clara County’s Information Technology (or Quaternary) Sector, Employment v. Total GDP (2001 = 100, in 2012\$). Source: BEA, 2001 to 2018.

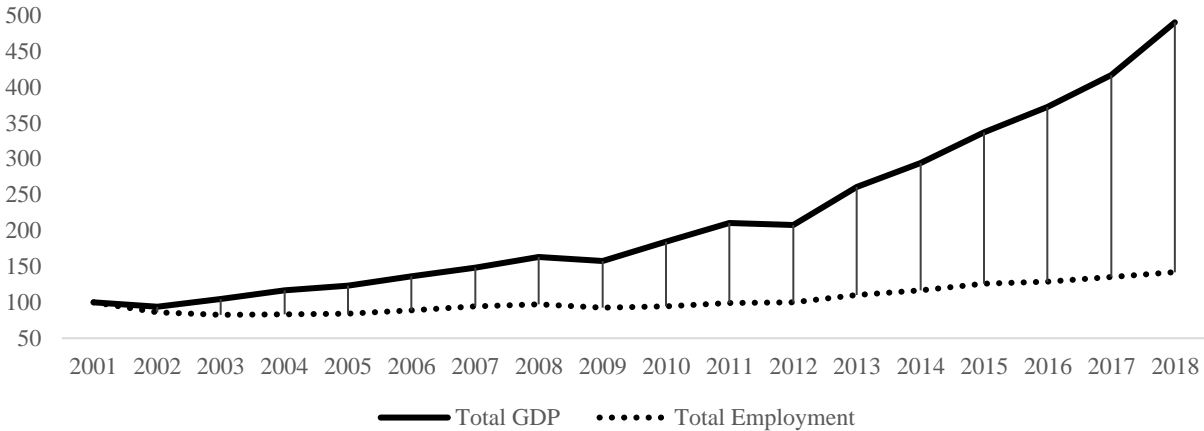
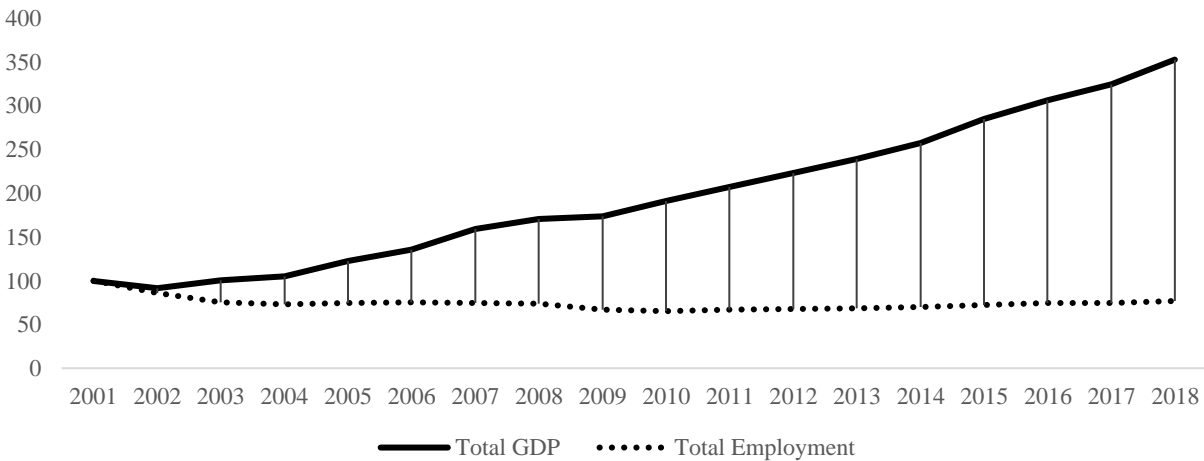


Figure 22: Santa Clara County’s Manufacturing (or Secondary) Sector, Employment v. Total GDP (2001 = 100, in 2012\$). Source: BEA, 2001 to 2018.



The socioeconomic result? A bifurcation of the labor market and attendant income inequality. A recent study noted that 9 out of 10 Silicon Valley workers earned less in 2017 than they did in 1997, with the only wage gains going to the top 10%.⁴¹ Part of the reason is that the high-tech economy is a “winner-take-all” economy, wherein there are those who automate work and those whose work is automated—and only one of those groups gets paid well.

This is to say, then, that an evolving economy doesn’t preclude a devolving society. In fact, some of the most advanced U.S. economies are also the most unequal, according to data from the New York Fed⁴². The regions with the highest inequality include San Jose, CA, New York, Houston, San Francisco, and

⁴¹ <https://www.cnbc.com/2018/12/03/in-silicon-valley-wages-are-down-for-everyone-but-the-top-10-percent.html>

⁴² <https://www.nytimes.com/2019/12/02/upshot/wealth-poverty-divide-american-cities.html>



Washington D.C. This was due to flat wages for those region’s middle- and lower-income workers, coupled with rapid growth in wages for top earners.

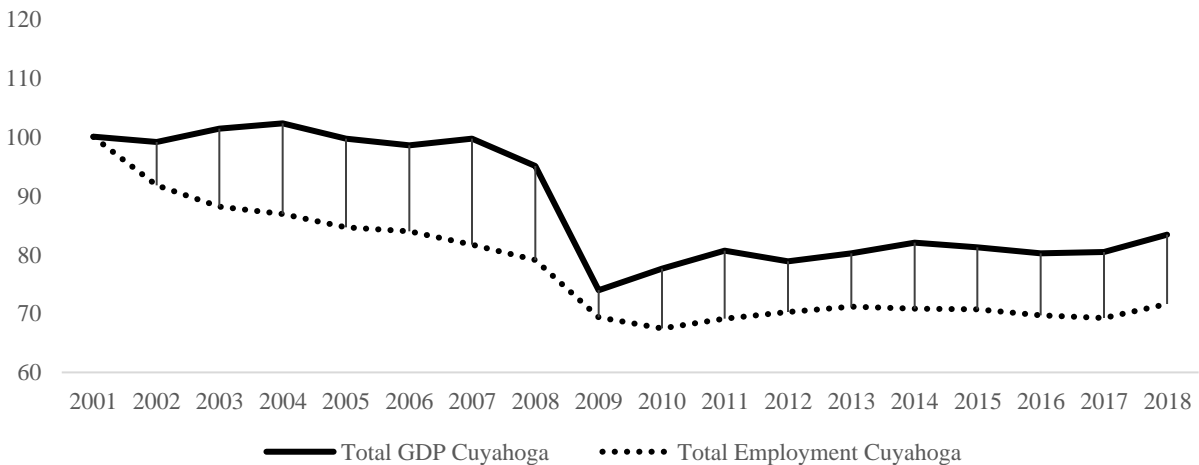
Issues in the Rust Belt are also less than ideal, yet the extremes found in the likes of Silicon Valley are more muted. This is partly because the Rust Belt’s tech economies are less advanced; that is, while the economic growth trajectory of, say, Cleveland is flatter than Santa Clara County, so too are the “winner-take-all” effects. This doesn’t mean there aren’t trends of decoupling. Figure 23 shows that the total GDP from Cuyahoga County’s Information Technology sector increased from 2001 (rising to an inflation-adjusted \$10.75 billion), yet employment in that sector decreased.

Figure 23: Cuyahoga County’s Information Technology (or Quaternary) Sector, Employment v. Total GDP (2001 = 100, in 2012\$). Source: BEA, 2001 to 2018.



There’s less of a decoupling in Cuyahoga’s Manufacturing sector (Figure 24), if only because there’s declines in *both* output and employment. Again, this coincides with Cuyahoga County’s evolution from goods- to knowledge-based economy. As to the extent that evolution is a net positive societally, well, it’s an open question. Yet one thing is certain: Becoming the “next Silicon Valley” is not a lofty ambition, if in fact societal well-being is central to that ambition. In light of COVID-19 and the boiling social unrest tied to the Black Lives Matter movement, how could it not?

Figure 24: Cuyahoga County’s Manufacturing (or Secondary) Sector, Employment v. Total GDP (2001 = 100, in 2012\$). Source: BEA, 2001 to 2018.





Deindustrialization and the “Barbelling” of the Labor Market

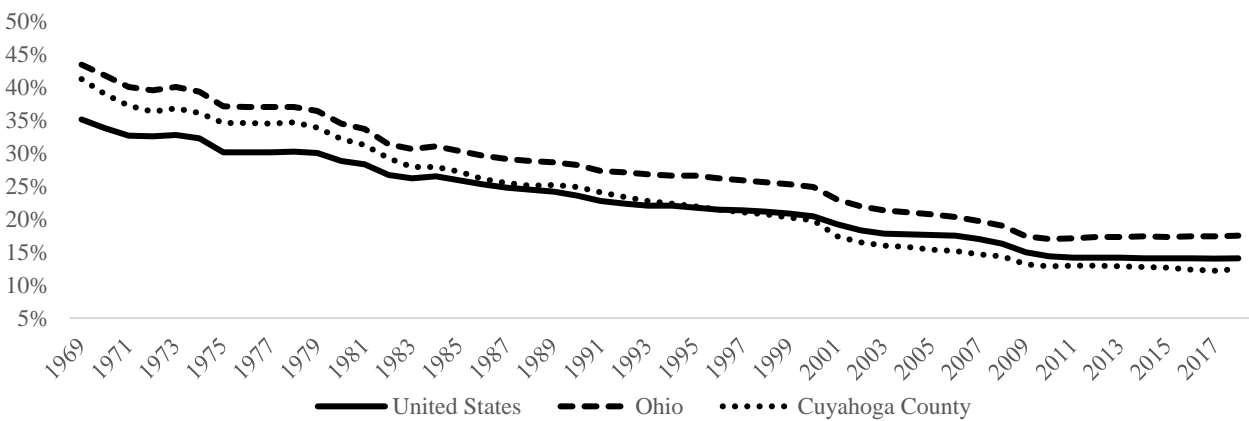
Balancing the desires of firms with the needs of workers and their communities is hardly a new problem. “Technology is widely considered the main source of economic progress,” writes Joel Mokyr in “The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?”, “but it has also generated cultural anxiety throughout history.⁴³” The famed economist David Ricardo put the issue simply some 200 years back, noting that “the substitution of machinery for human labour is often very injurious to the interests of the class of labourers . . . [It] may render the population redundant and deteriorate the condition of the labourer.”⁴⁴ More recently, philosopher Yuval Harari opined that the increasing automation of labor would mean a “rise of the useless class”⁴⁵, a play off of Richard Florida’s ode to the knowledge worker dubbed the “rise of the creative class”⁴⁶.

Enter the Rust Belt, a region whose label is central to the issue of economic dislocation. In his campaign for a second term, President Ronald Reagan coined the famous tagline “Morning in America”. It was a time when the Sun Belt was booming and when California was dreaming. Conditions in the Industrial Midwest, though, were brooding. In a campaign stop at a Cleveland steel mill, Reagan’s opponent, Walter Mondale, told the lunch-pail crowd that Reagan was “turning our great industrial Midwest and the industrial base of this country into a rust bowl.”⁴⁷ The media reinterpreted Mondale’s comments as “Rust Belt”—a moniker that lives today.

The Rust Belt by and large is a term about loss: the loss of a way to upward mobility, the loss of a way of life. And as the age of industrialization gave way to the age of deindustrialization—a process denoting the deleveraging of manufacturing activities via automation and off-shoring—the pain was most acutely felt in Ohio, as well as other regions in the Great Lakes.

A few trend lines illustrate this point. In 1969, 43.4% of all private sector jobs in Ohio were in the Manufacturing sector (See Figure 26). These figures were 41.3% in Cuyahoga County and 35.1% nationally. By 2018, the percentage of jobs that were in Manufacturing was 17.5% in Ohio, 14.1% nationally, and 12.4% in Cuyahoga County.

Figure 26: Percent of All Private Sector Employment that is in the Manufacturing, or Secondary, Sector.
Source: BEA, 1969-2018.



⁴³ <https://www.aeaweb.org/articles?id=10.1257/jep.29.3.31>
⁴⁴ https://www.econlib.org/library/Ricardo/ricP.html?chapter_num=29#book-reader
⁴⁵ <https://ideas.ted.com/the-rise-of-the-useless-class/>
⁴⁶ <https://www.citylab.com/life/2012/06/rise-creative-class-revisited/2220/>
⁴⁷ <https://www.encyclopedia.com/places/united-states-and-canada/miscellaneous-us-geography/rust-belt>



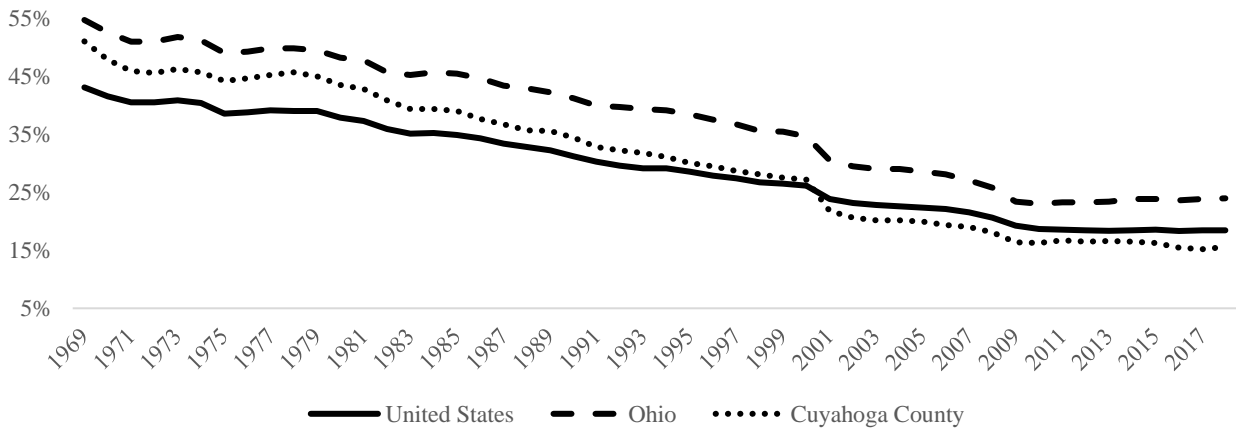
Despite the declines, Ohio remains a top 10 state when it comes to proportion of private sector jobs that are in Manufacturing, along with four other Midwestern states (See Table 5). Note, though, the decline in share of manufacturing employment across the board, telling of the maturation of the industry.

Of course, the issue with deindustrialization is that one's means to make a living impacts one's standard of living, with income a mediating factor between (a) a better job and (b) a better life. Just how vital was manufacturing in the lining of pockets of Rust Belt workers? Very, as nearly 55% of all Ohioans earnings were from the Manufacturing sector in 1969. That figure was 51% for Cuyahoga County. Now, only 23.9% of Ohio's earnings are derived from Manufacturing. In Cuyahoga County that figure dropped to 15.5% (See Figure 27).

Table 5: Top States for Concentration of Manufacturing, or Secondary, Employment. Source: BEA, 2001, 2018.

	2001	2018	Change
Indiana	27.2%	22.3%	-4.99%
Wisconsin	26.1%	21.1%	-4.94%
Iowa	22.6%	20.2%	-2.43%
Alabama	25.6%	19.0%	-6.57%
Arkansas	26.6%	18.6%	-8.00%
Michigan	24.2%	18.5%	-5.71%
Kentucky	23.8%	18.5%	-5.29%
Mississippi	25.7%	18.2%	-7.49%
South Carolina	25.9%	17.6%	-8.32%
Ohio	23.0%	17.5%	-5.51%

Figure 27: Percent of All Private Earnings from the Manufacturing, or Secondary, Sector. Source: BEA, 1969-2018.



With the fading of one epoch, however, another emerges. world,” e“As evidenced by the economic development history of mankind, evolution from an agricultural to an industrial and finally to a service economy is a natural and inevitable process for a specific country and even for the whole explains one international economist, noting that the United States—though a later arrival to the Industrial Revolution compared to Europe—was “the first country to shift to a ‘service economy’ in the middle of the twentieth century”⁴⁸. The reasons for this evolution are varied, yet include an outgrowth of specialized “white-collar” services selling to industrial firms—think [Don Draper from Mad Men](#) pitching to Chevrolet—as well as the emergence of a consumer class with disposable income which, in turn, demanded more services, thus inciting the need for more service occupations.

⁴⁸ <https://link.springer.com/article/10.1186/2196-5633-1-3>



Figure 32: Proportion of Private Sector Jobs that are in Knowledge-based versus Lower-wage Services in Cuyahoga County. Source: BEA, 2001 to 2018.

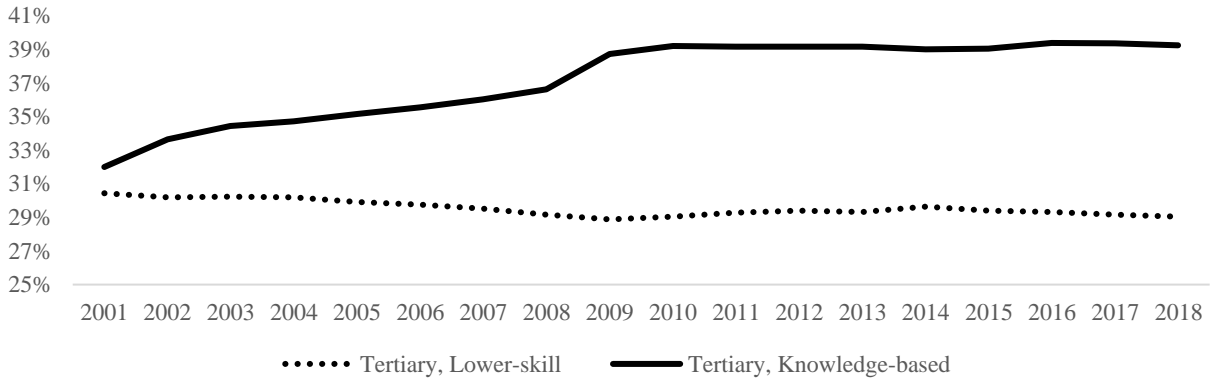


Figure 33: Proportion of Private Sector Jobs that are in Knowledge-based versus Lower-wage Services in the U.S. Source: BEA, 2001 to 2018.

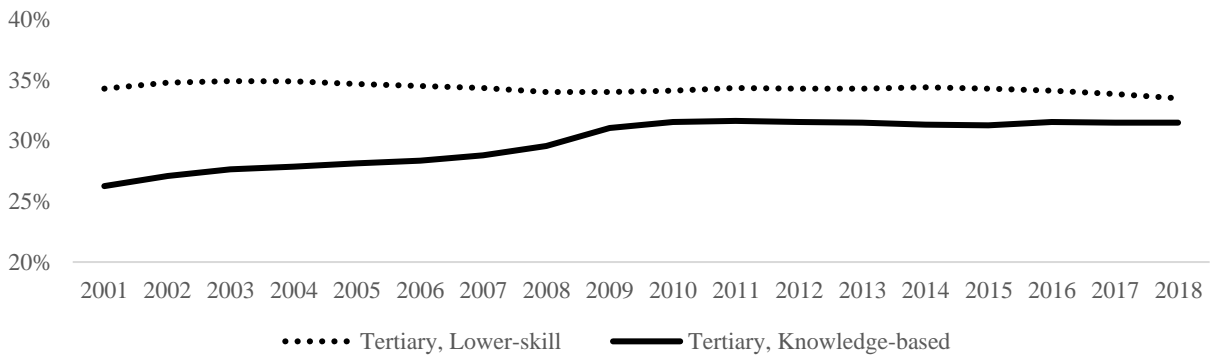
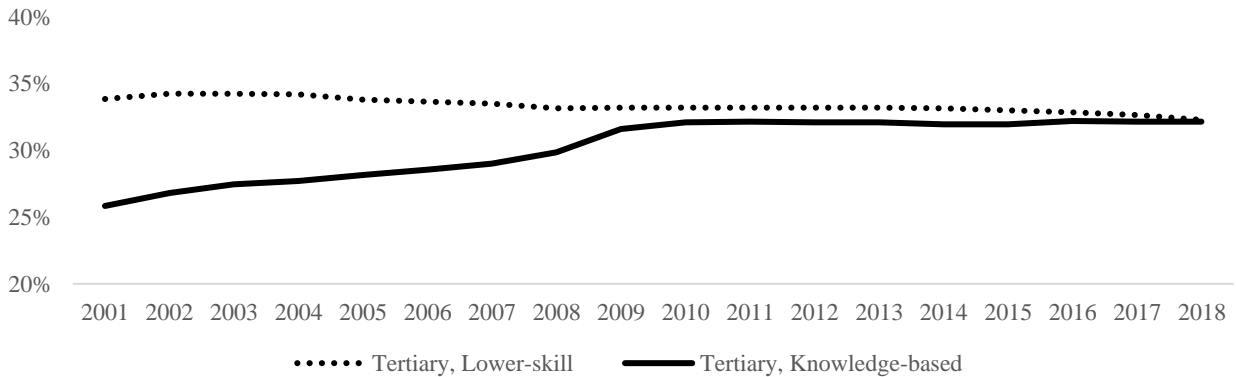


Figure 34: Proportion of Private Sector Jobs that are in Knowledge-based versus Lower-wage Services in Ohio. Source: BEA, 2001 to 2018.



Ohio's evolution compares well to peer states, ranking 16th in Knowledge-based Service jobs as a percent of private employment. Figure 35 shows that the more knowledge jobs a state has the higher its real per capita income ($R^2 = .54$). Ohio is in the upper-right quadrant, clustering with states in the Northeast. The



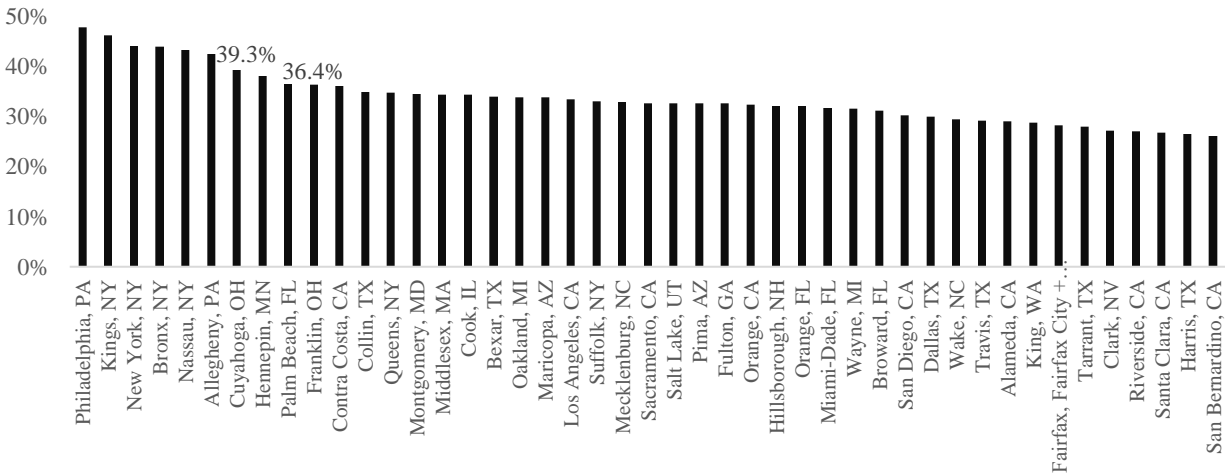
fast-growing jobs hubs in the Sun Belt states are mainly in the lower-left, echoing earlier findings that it's the quality of jobs that matter, not the quantity.

Figure 35: Real Per Capita Income v. % of Knowledge-based Service Jobs by State. Source: BEA, 2018.



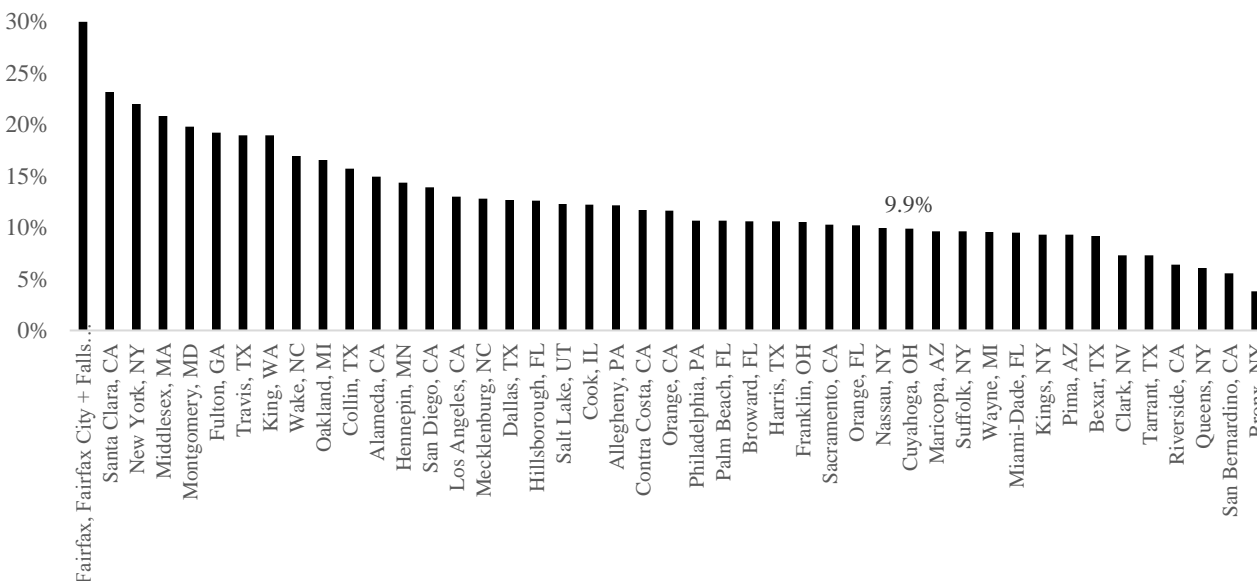
Leading the charge in Ohio is Cuyahoga and Franklin Counties. Among counties with at least 1 million residents, Cuyahoga County ranks 7th in the proportion of jobs that are in Knowledge-based Services, behind Philadelphia, Brooklyn, Manhattan, the Bronx, Nassau, and Allegheny. Franklin County is 10th.

Figure 36: Proportion of Private Sector Jobs that are in Knowledge-based Services in Big-City Counties. Source: BEA, 2018



Expectedly, Cuyahoga County lags in its proportion of private sector employment that is in the Information Technology sector (9.9%). Topping the list of big-city counties is Fairfax County in the D.C. metro, as well Santa Clara County and New York County. New York County is home to Manhattan, which houses the world's largest Fin Tech scene. Leading in the Great Lakes is Oakland, Michigan, home to a growing Car Tech scene.

Figure 37: Proportion of Private Sector Jobs that are in Information Technology in Big-City Counties.
Source: BEA, 2018



Which brings us back to income. Deindustrialization’s impact on local income was noted. Increased earnings for Cuyahoga County’s knowledge workers, however, have helped pick up the slack. Earnings for Knowledge-based Services (\$19.8 billion) grew an inflation-adjusted 80% since 2001, and 45% for Information Technology (\$7.3 billion). Those two sectors alone account for over half of earnings (55.3%) (See Table 6). The issue is with Lower-waged Service workers.

Table 6: Cuyahoga County Employment versus Earning Share
Source: BEA, 2018.

Sector	Employment Share	Earning Share	Difference
Secondary, Manufacturing	12.4%	15.5%	3.1%
Tertiary, Blue-collar	9.2%	10.7%	1.5%
Tertiary, Lower-wage	29.1%	16.7%	-12.4%
Tertiary, Knowledge-based	39.3%	40.4%	1.1%
Quaternary, Information Technology	9.9%	14.9%	5.0%

They make up a big portion of the labor pool (29.1%), yet they get only 16.7% of private earnings.

Now, what do these trends mean? The takeaway? Well, we got an economic restructuring from Manufacturing to Services that began some time back, dislocating Rust Belt workers from living wages. MIT’s David Autor recently showed that much of the working class didn’t “graduate” into knowledge economy work, but instead became subsistent on lower-wage service work⁴⁹. A “barbell” of the labor market thus ensued, with knowledge workers on one end and service workers on the other. The father of term “knowledge economy”, Peter Drucker, envisioned such a scenario. “Knowledge workers and service workers are not ‘classes’ in the traditional sense,” Peter Drucker wrote in 1992⁵⁰. “But there is a danger that ... society will become a class society unless service workers attain both income and dignity.”

Pre-COVID-19, the scholarly argument for service worker wage stagnation was that pay was commiserate with returns to skill. The wage premiums are for those in the techne class, or for the arbiters of knowledge

⁴⁹ <https://voxeu.org/article/work-past-work-future>

⁵⁰ <https://hbr.org/1992/09/the-new-society-of-organizations>



services, as they provide the value-add in the current economic era. That's true⁵¹. But only partly, as that valuation came to coincide with a devaluation of manual, last-mile work as an unglamorous, rudimentary endeavor⁵². Yet COVID-19 exposed that devaluation [as self-serving](#). In fact, as knowledge workers work from home in the safety of physical separateness, they can only do so if the necessities brought to their doorstep—sanitation, food, utilities—are in fact brought. If not, the knowledge stops.

This reality is being realized. In his daily letters to his staff dated April 8th, 2020, Craig R. Smith, the Chair of the Department of Surgery in New York City's Columbia Medical Center, discussed the risk associated with transporting COVID-19 patients from the ER in the infectious disease wing, noting the orderlies are selflessly stepping up⁵³. His concluding paragraph reads:

“Transport is just one reminder that every contribution matters. Consider this admirably prideful Tweet from “Jester D” on March 14: ‘I’m a garbageman. I can’t work from home and my job is an essential city service that must get done....Doctors and nurses are going to keep doctoring and nurse-ering. Us garbagemen are gonna keep collecting the garbage.’ Indeed, it must get done. Singer-songwriter John Prine died of COVID-19 yesterday, at age 73. He worked a day job as a mail carrier in Chicago for five years early in his career. John Prine wrote songs for common people... ‘The scientific nature of the ordinary man / Is to go out and do the best you can.’

The Post-COVID Break: Economic Dislocation of the Economically Displaced

Technology is not an industry per se. Rather, it's deployed across industries, adding an element of “creative destruction”⁵⁴ into how things have traditionally been done. The Quaternary sector, then, penetrates all economic activities, adding efficiencies with “PrecisionAg” in the Primary sector, robotics in the Secondary sector, and precision medicine and FinTech in the Tertiary sector.

“Once upon a time, it made perfect sense to talk about ‘the high tech industry’ in America,” explained technologist Anile Dash, noting that Fairchild Semiconductor and IBM were in the business of making tech for tech's sake⁵⁵. “But today, the major players in what's called the ‘tech industry’ are enormous conglomerates that regularly encompass everything from semiconductor factories to high-end retail stores to Hollywood-style production studios.”

Prior to COVID-19, tech's penetration in Tertiary, or Service, sector was deep, particularly in the arena of consumer goods, i.e., consumer tech. Netflix brought the cinema to the house. Amazon brought the mall to the house. Facebook brought the coffeeshop to the house. Google brought the library to the house. Apple brought the desktop to one's hand from which entertainment, consumer goods, and social connection was brought to one's house. Uber Eats brought the restaurant to the house. Beyond leisure and retail, knowledge services, too, are being brought to the house, via the likes of telemedicine, remote learning, and online banking and brokering.

This is not surprising. The whole rationale for creative destruction is to make what was harder easier, or what was scarce more abundant. The 2nd Agricultural Revolution was about making more food at less cost with fewer laborers. That happened. The 1st Industrial Revolution made the scarcity of human labor abundant by replicating it with steam and gears. Transportation, communication, domestic work: they were made easier by cars, phones, and appliances which, in turn, was only made possible by the advances

⁵¹ https://www.econ.nyu.edu/user/violante/Books/sbtc_january16.pdf

⁵² <https://www.nytimes.com/2020/06/24/opinion/wages-coronavirus.html?action=click&module=Opinion&pgtype=Homepage>

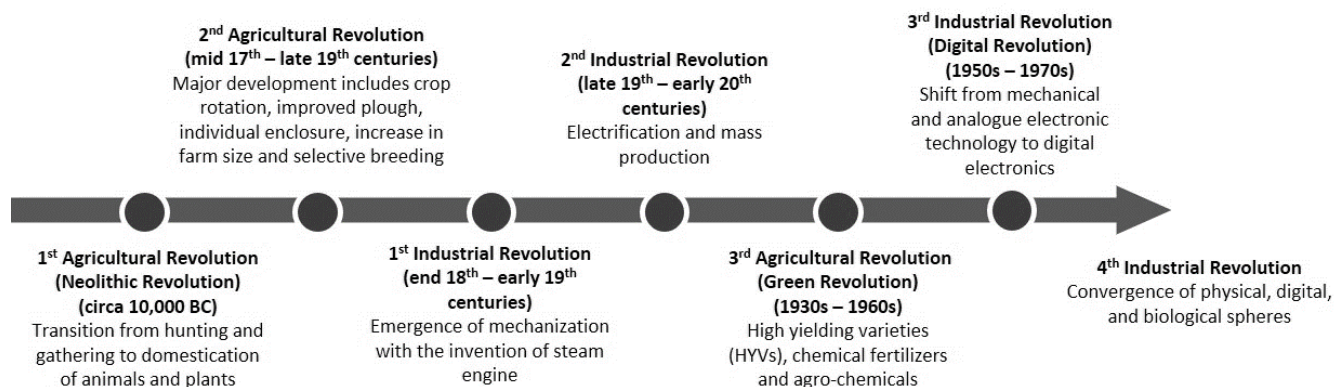
⁵³ <https://columbiasurgery.org/news/covid-19-update-dr-smith-4820>

⁵⁴ <https://economics.mit.edu/files/1785>

⁵⁵ <https://medium.com/humane-tech/there-is-no-technology-industry-44774dfb3ed7>

in electrification in the 2nd Industrial Revolution. One critical *raison d'être* of the 4th Industrial Revolution is to make the scarcity of human attention less so via the advance of artificial intelligence.

Figure 38: A Timeline of Innovation. Source: Khazanah Research Institute



The arrival of COVID-19 will only accelerate technology’s penetration into various industries. That means further automation of human tasks, and not simply for efficiency’s sake—i.e., robots doing more for less—but because human proximity is now a drag on productivity, not to mention a liability. It’s a scenario few saw. Worse, the endgame—how to do we work together without being together? —isn’t exactly foreseeable. There’s no playbook for this. “Everyone wants to know when this will end,” explained Devi Sridhar, a public health expert at the University of Edinburgh. “That’s not the right question. The right question is: How do we continue?”⁵⁶

Economically, the most pressing issue at hand is what to do about the human contact issue. A vaccine is the obvious answer, yet that’s at least 12 months off—an eternity in the market. In the meantime, changes must be made, and companies hurting for cash will find the pressure to replace humans with machines intensifying. “The thing that we’re hearing from customers is many of their budgets have been frozen except for budgets for automation,” explained CEO Melonee Wise of Take Fetch Robotics⁵⁷. The question their asking: “How can robots enable us to continue... while keeping social distancing?”

It is unlikely, for instance, that farmers will return to business as usual. The living and working conditions of seasonal migrant laborers makes their essential work susceptible to outbreaks, as is evidenced by the situation in Singapore wherein half of their cases can be tied to migrant dormitories⁵⁸. To mitigate such risks, a considerable up-front investment is expected in “technologies like drones, autonomous tractors, seeding robots, and robotic harvesters [that] imply a dramatic reduction in farmers’ reliance on migrant labor,” so notes agricultural economist Wandile Sihlobo⁵⁹.

And while American factories have been de-densifying for decades via the use of [industrial robots](#), there’s a substantial amount of last-mile work that didn’t make financial sense to automate. Amazon fulfillment centers are filled with such workers. “But labor and robotics experts say social-distancing directives, which are likely to continue in some form after the crisis subsides, could prompt more industries to accelerate their use of automation,” so notes a *New York Times* piece “Robots Welcome to Take Over, as Pandemic Accelerates Automation”. The authors interview an executive of an AI robotics company that specializes in the recycling industry, saying orders have skyrocketed since the outbreak given that their robots will enable recycling facilities to space out their employees. Another benefit of the bots? “They

⁵⁶ <https://www.theatlantic.com/health/archive/2020/04/pandemic-summer-coronavirus-reopening-back-normal/609940/>

⁵⁷ <https://www.protocol.com/automation-boom-caused-by-coronavirus>

⁵⁸ <https://www.reuters.com/article/us-health-coronavirus-singapore-migrants/in-singapore-migrant-coronavirus-cases-highlight-containment-weak-link-idUSKCN21X19G>

⁵⁹ <https://www.project-syndicate.org/commentary/covid19-labor-shortages-agriculture-automation-by-wandile-sihlobo-2-2020-04>

can't get the virus," the executive said⁶⁰. Amazon, too, is planning accordingly, after numerous COVID-19 cases among staff and subsequent staff protests⁶¹.

Perhaps the biggest effect—both economically and socioeconomically—is the fate of the Lower-wage Service worker, making up a third of the American workforce. Elaborating, if COVID-19 acts as an accelerant into Consumer tech's penetration into the Service market, where do the economically displaced go if they are again economically displaced? Cashiers are at risk via automated kiosks, retail workers via on-demand ordering, waiters and waitresses via the rise of "dark kitchens", or digital-only establishments that don't need a dining room or waiters.

Outside of automation, how does a leisure and hospitality industry so reliant on face-to-face contact even continue?

Trends in the unemployment rate for leisure and hospitality workers show that it doesn't, with Depression-level unemployment rates nearing 40% for the group (See Figure 39). Even after the lockdown, an already uphill climb for small businesses will be steep. "Keeping tables apart, socially distant service... that's not a reality," notes one Cleveland restaurateur, explaining his reason to close. "If you can't make money turning every table twice and a half, how are you going to do it at half that."⁶²

Figure 39: Unemployment Rate for Leisure and Hospitality Workers, 2001 to April 2020. Source: BLS.



Regionally, some states and cities are more susceptible to this reality than others. Figure 40 shows that the top 10 states with the highest concentration of Lower-wage Service jobs are primarily in the Sun Belt, led by Nevada (44%), Hawaii (44%), South Carolina (39%), Mississippi (39%), Florida (38%), and Alabama (38%). Ohio ranks 35th at 32.3%. Out of big-city counties over a million plus, the top 18 for the highest share of private jobs in Lower-wage Services are located in the Sun Belt, led by Clark County Nevada (47.1%) (See Figure 41). Nearly half of the counties in the top 10 are in Florida.

Even after lockdowns soften with preventive measures, the likelihood people attend public gatherings is uncertain. Does this sound fun? "Every spectator goes through a kind of disinfection shower at the entrance of the theater," explains a German theater director based in South Korea⁶³. "You keep your clothes on, of course, but you don't really get wet either. It is a very thin spray. Every visitor has to have

⁶⁰ <https://www.nytimes.com/2020/04/10/business/coronavirus-workplace-automation.html>

⁶¹ <https://www.investors.com/news/technology/industrial-automation-opportunity-seen-coronavirus-crisis/>

⁶² <https://www.clevescene.com/scene-and-heard/archives/2020/04/22/ben-bebenroth-discusses-the-death-of-spice-kitchen-and-the-uncertain-future-of-dining-out?>

⁶³ <https://www.sueddeutsche.de/politik/suedkorea-coronavirus-kontrollen-1.4885088?referrer=push>

their temperature measured, everyone has to wear a protective mask over their mouth and nose for the entire stay in the theater.”

Figure 40: Proportion of Private Sector Jobs that are in Lower-wage Services by State. Source: BEA, 2018.

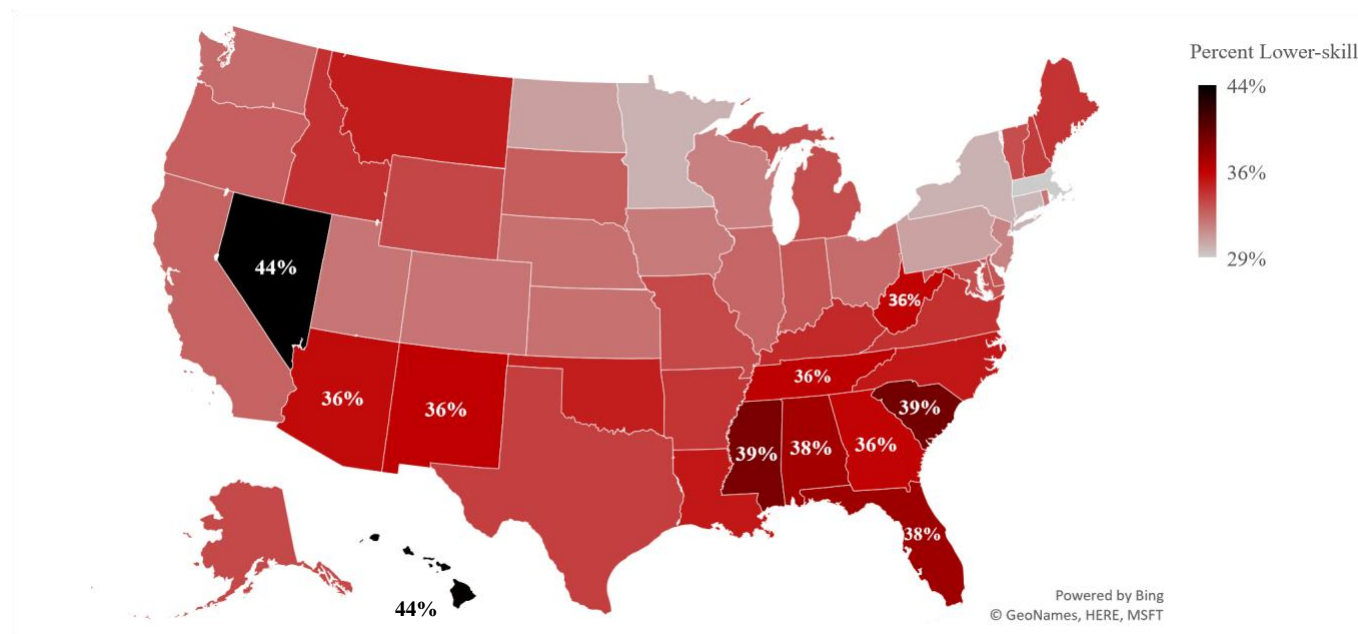
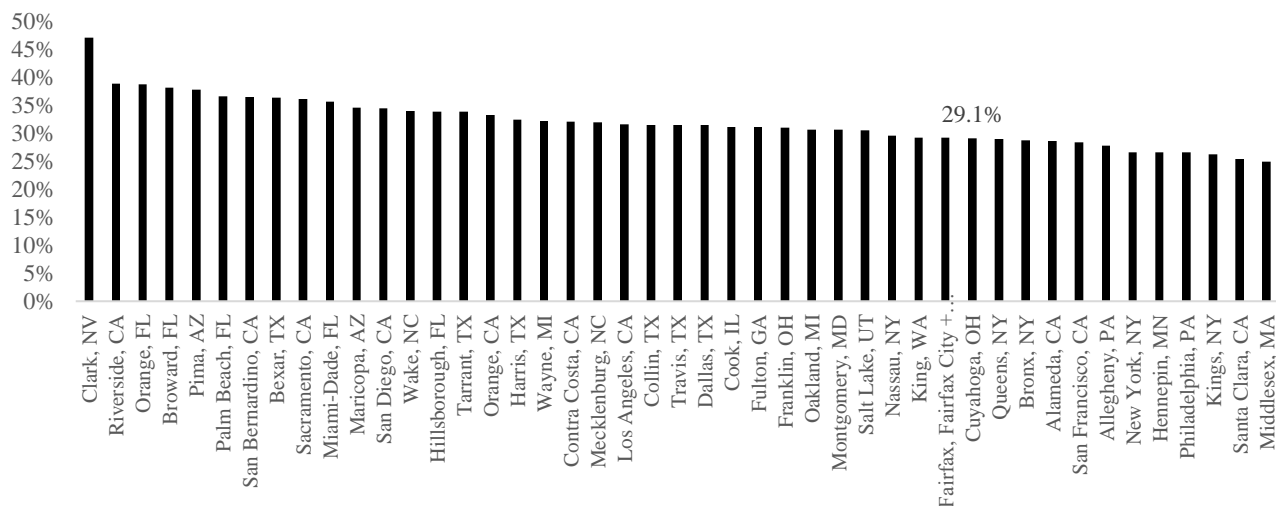


Figure 41: Proportion of Private Sector Jobs that are in Lower-wage Services in Big-City Counties. Source: BEA, 2018



Regardless, **back in late April there was** an increasingly raging debate about the health of the economy versus the health of the people, particularly in population boomtown areas in which so much economic activity can't be done virtually and at a distance. The Lt. Governor of Texas, Dan Patrick, recently made comments that went viral insinuating that the elderly would be willing to die if it meant Americans can “get back to work”⁶⁴. Speaking with *CNN*'s Anderson Cooper, the Mayor of Las Vegas, Carolyn

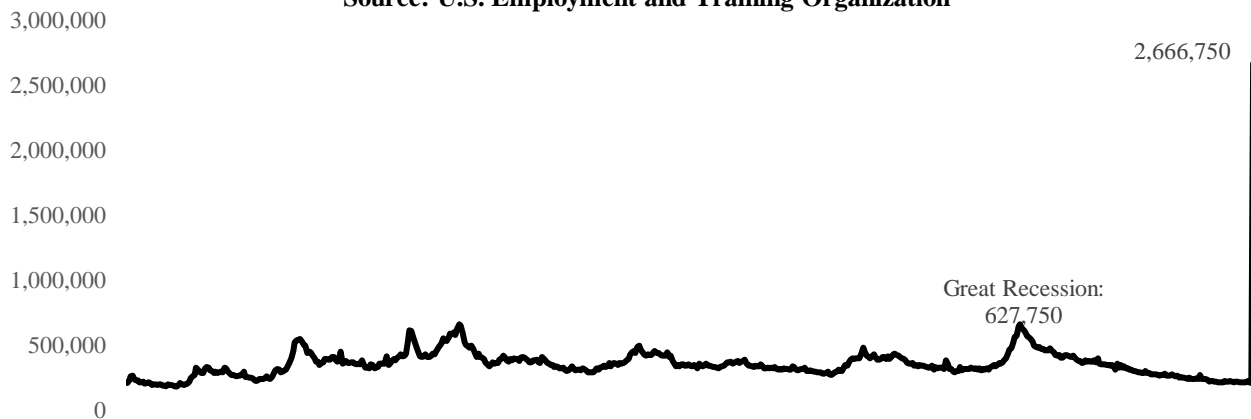
⁶⁴ <https://www.nbcnews.com/news/us-news/texas-lt-gov-dan-patrick-suggests-he-other-seniors-willing-n1167341>

Goodman, offered her city as a “control group” to assess the extent fatalities will occur if social distancing measures are relaxed, if only so casinos and hotels can open.⁶⁵ Georgia was the first state to relax social distancing measures so non-essential businesses like bowling alleys, tattoo parlors, and hair salons can open. This, despite the National Institute of Allergy and Infectious Diseases’ Dr. Anthony Fauci advising that Georgia shouldn’t be “going ahead and leapfrogging into phases where you should not be...” Not surprisingly, the effect of these efforts to open up early has led to a spike in COVID-19 cases in the Sun Belt, led by Texas, Florida, California, North Carolina, Arizona, and Georgia by late June⁶⁶.

No doubt, the economic pain bearing down on the brunt of American firms and workers is unprecedented, as illustrated by national monthly initial unemployment claims across time (See Figure 42). But falsely framing a solution to COVID-19 as zero-sum dichotomy that means sacrificing the life of some for the livelihood of others, well, that neglects an awareness that it is in fact that kind of dichotomous thinking that got us into this mess in the first place.

COVID-19 didn’t create the urgencies we face as much as reveal them. The physical and mental well-being of Americans have been declining for some time⁶⁷. This is related to how various economic restructurings has been good for some, and less good for most. And where one lands on that continuum of pain versus progress is ultimately felt in one’s flesh. After all, it all ends up in the body.

Figure 42: Initial Unemployment Claims (Monthly) Jan 1967 to April 2020.
Source: U.S. Employment and Training Organization



The Body as Geography

If there was one metric to measure it “all”, what would it be? Nothing captures everything, and there are many key measures like GDP, employment, and earnings that are necessary. Yet all of these are upstream to an outcome that’s arguably most definitive: life expectancy. In fact, so much of civilization’s race to progress is flattened into a Darwinian struggle to live longer with a higher quality of life. In Maslowian psychology, this is couched as going beyond the basic needs of food, water, shelter, and safety, to psychological needs of belongingness and esteem, and finally to self-actualization, or those pursuits of creativity and spirituality that lend themselves to “a life well lived”.

But one’s life expectancy is not fully in the hands of the individual. If one conceives of the body as a geography—and it is—then it’s easy to see how a mind and body is influenced by the household it lives in. That influence, then, broadens at geographic scale: a household is tied to a neighborhood, a neighborhood to a city, a city to a region and state, all of which are interlocked globally. COVID-19

⁶⁵ <https://www.cnn.com/videos/politics/2020/04/22/las-vegas-control-group-coronavirus-mayor-goodman-vpx.cnn>

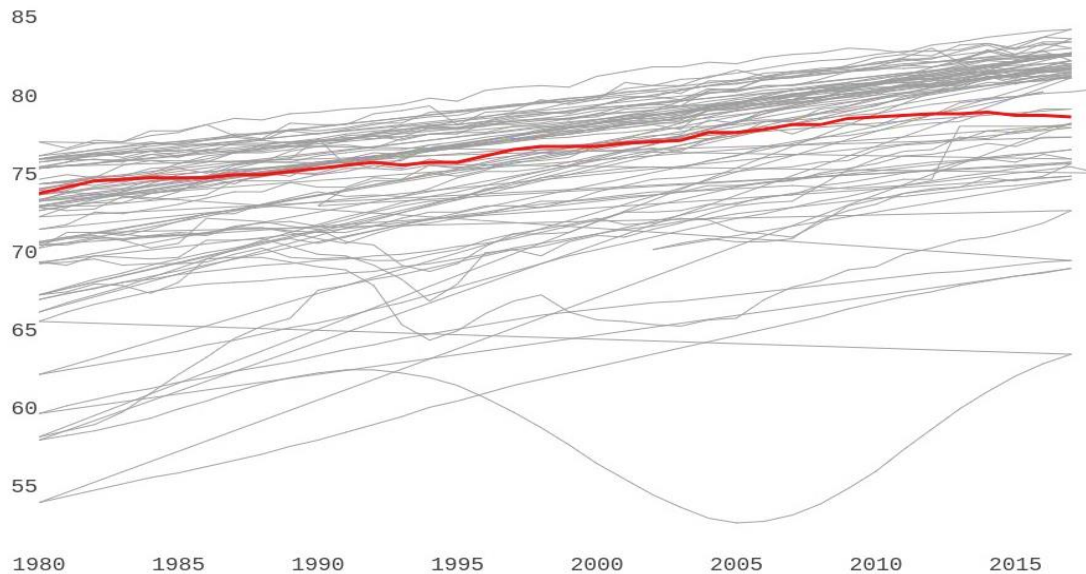
⁶⁶ <https://kinder.rice.edu/urbanedge/2020/06/23/coronavirus-hot-spots-emerge-across-sun-belt-states-expand-reopenings>

⁶⁷ <https://jamanetwork.com/journals/jama/article-abstract/2756187>

makes this nesting of space plain as day, fast-tracking the global-to-local-to-individual process in a breathtaking manner. But while the contagion is fast, the systemic structures that make it land harder on the vulnerable have been a long time coming.

Let's start with the basics. Overall, life expectancy in the U.S. has not only plateaued, but it's declined for three consecutive years⁶⁸. Among the developed world, the nation is trending the wrong way (See Figure 43), assaulting the notion of American exceptionalism.

Figure 43: Life expectancy by nation 1980 to 2017 (U.S. in red). Source: OECD



What's happening? Deindustrialization's impact in particular—and the erosion of middle-income employment more generally—has had an explanatory effect⁶⁹. In their recent study "Life Expectancy and Mortality Rates in the United States, 1959-2017" in *JAMA*, the authors find that stalled longevity is a function of Americans aged 25 to 64 dying of drug overdose, alcohol abuse, and suicide. Importantly, the deaths are geographically specific, with 8 of the 10 states with the largest number of excess deaths in the Rust Belt or Appalachia, particularly in the communities of the [Ohio Valley](#). "The notion that U.S. death rates are increasing for working-age adults is particularly disturbing because it is not happening like this in other countries," said Steven Woolf, the lead author⁷⁰. "This is a distinctly American phenomenon."

Echoing these findings, Angus Deaton and Anne Case, authors of the new book "Deaths of Despair and the Future of Capitalism", found that "deaths of despair" have increased four- to five-fold for white, non-college-educated middle-age adults since the 1990's. For instance, 30-year-olds died by suicide, drugs, or alcohol at a rate of 31 per 100k deaths in 1992, increasing to 147 per 100k in 2017. For 53-year-olds, the increase went from 32 per 100k to 131 per 100k. Explaining their findings, Case noted⁷¹: "We don't think [American capitalism] is working for people without a four-year college degree — and that's two-thirds of Americans between the ages of 25 and 64."

One key trend supporting this thesis is the falling male labor force participation rate, going from 86.6% of men employed in 1948 to 68.5% in March of 2020. It's a sobering stat. The Philadelphia Fed recently showed that it was men with a high school diploma or less that are dropping out of the labor force the

⁶⁸ <https://www.sciencedaily.com/releases/2019/11/191127090223.htm>

⁶⁹ <https://www.wsws.org/en/articles/2015/11/04/pers-n04.html>

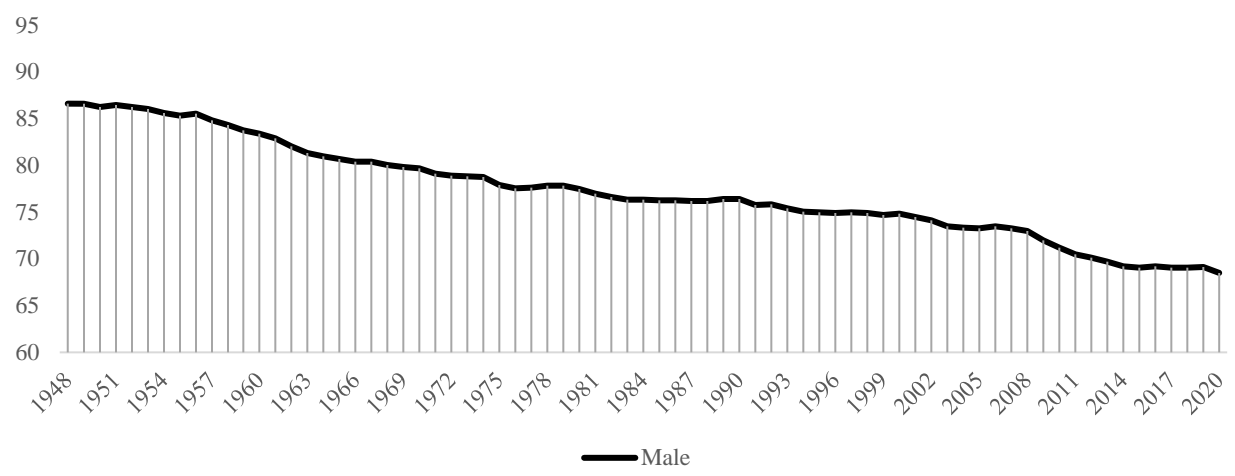
⁷⁰ <https://www.sciencedaily.com/releases/2019/11/191127090223.htm>

⁷¹ <https://www.chronicle.com/article/Anatomists-of-Melancholy-in/248552>



most, and that this exit was not “a transitory event, in that the majority of men who reported not working in a given month had also not worked over the previous year.”⁷²

Figure 44: Male Labor Force Participation Rate Jan. 1948 to May 2020. Source: Bureau of Labor Statistics



Such trends, however, are hidden in plain sight, given the growth pundits’ laudation of a Dow Jones Index that keeps breaking glass ceilings. But the stock market is not the economy⁷³. Or as was shown prior: growth doesn’t equal development, particularly when it’s being decoupled from opportunity. What’s key at this point is that the delta between growth and opportunity gets played out societally, especially at the level of the community. From there, it gets absorbed individually.

A “walk” down the scale of economic restructuring will prove helpful. Figure 45 shows counties in Ohio with the highest proportion of jobs in Knowledge-based Services and Information Technology combined. Unsurprisingly, the knowledge economy job hubs are located in the largest urban centers, led by Delaware (49.8%), Hamilton (49.2%), Cuyahoga (49.1%), and Franklin (46.9%). Meanwhile, areas where Lower-wage Service jobs are most concentrated are in South Central Ohio (See Figure 46). These counties also have the lowest life expectancies at around 72 (See Figure 47). By contrast, Columbus’ Delaware county’s life expectancy is 82.4 and Cleveland’s Geauga County is 81.3.

⁷² https://www.philadelphiafed.org/-/media/research-and-data/publications/economic-insights/2017/q4/eiq4_where-is-everybody.pdf?la=en
⁷³ <https://www.nytimes.com/2020/04/30/opinion/economy-stock-market-coronavirus.html>

Figure 45: Proportion of Private Sector Jobs in Knowledge-based Services and Information Technology by County. Source: BEA, 2018.

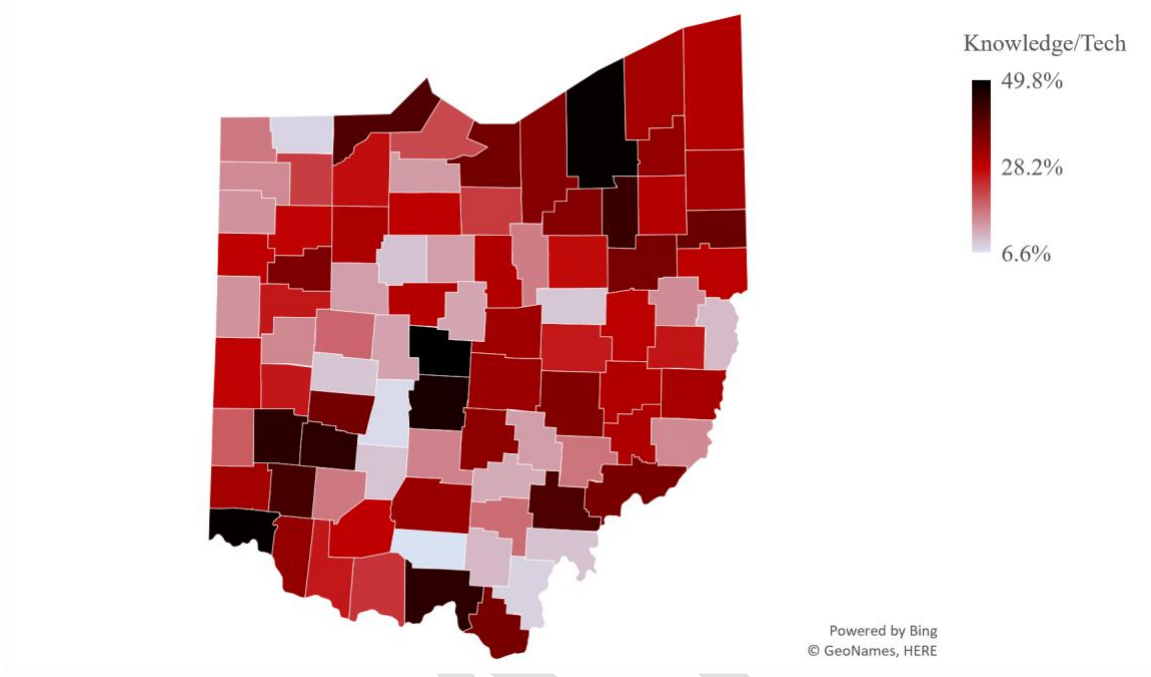


Figure 46: Proportion of Private Sector Jobs in Lower-wage Services by County. Source: BEA, 2018.

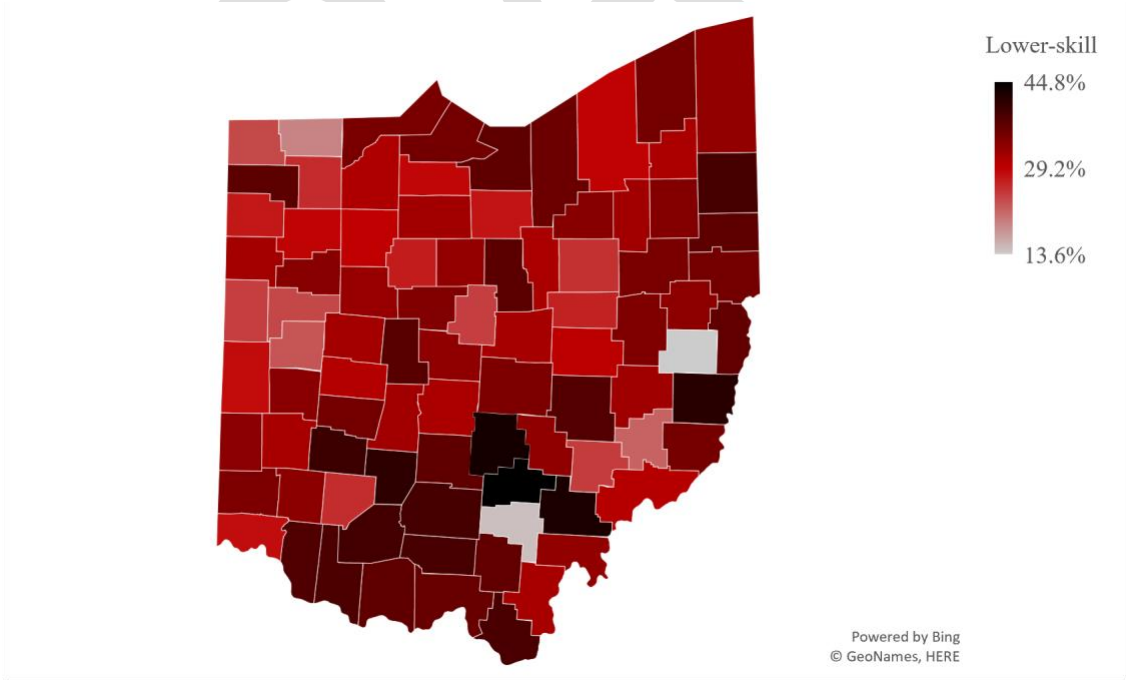
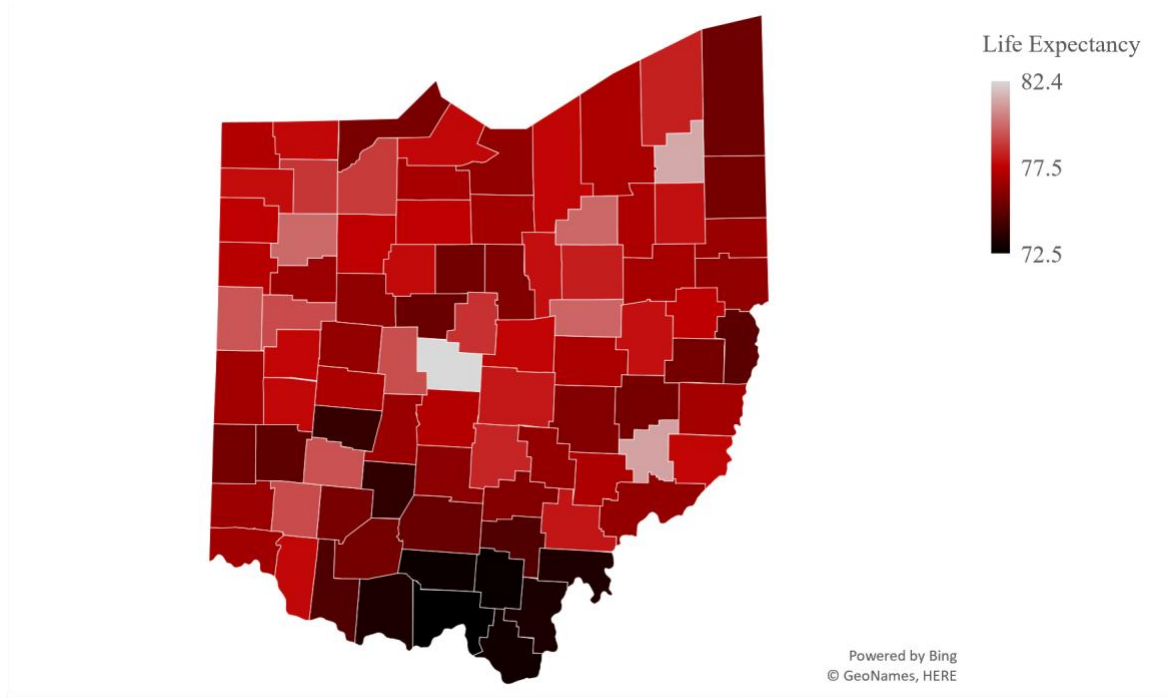
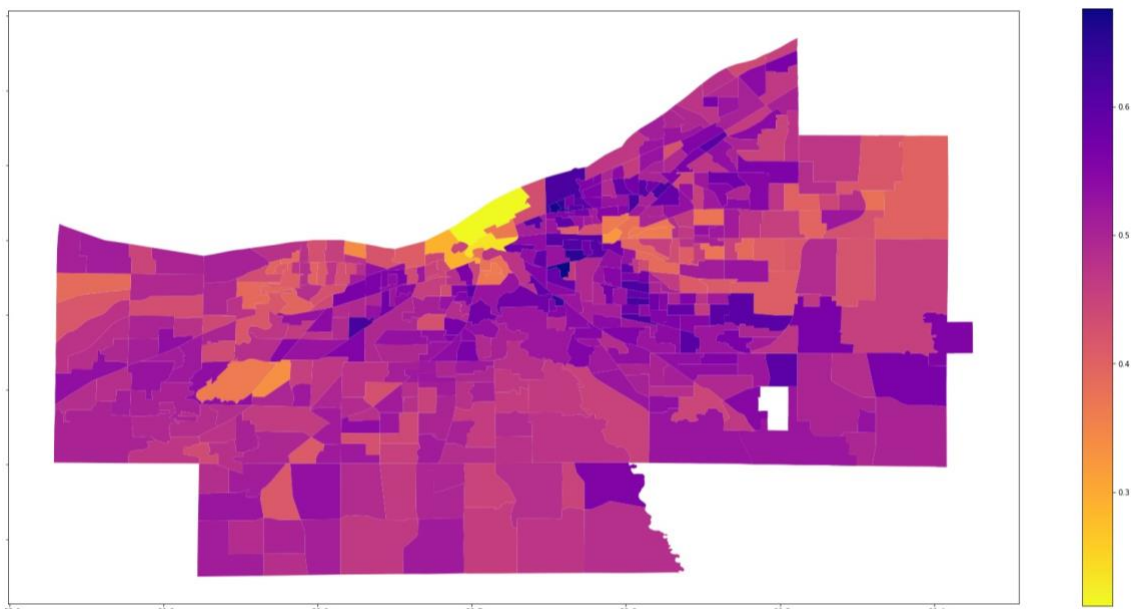


Figure 47: Life Expectancy by County. Source: County Health Rankings, 2020.



The geographic split evident between counties is also evident *within* a given county. Figure 48 shows Cuyahoga County’s Lower-wage Service workers are most concentrated in predominantly Black neighborhoods just north and south of Cleveland’s Health Tech Corridor: home to the region’s “eds and meds” institutions. That said, the bifurcation of the regional labor market is manifested as a bifurcation of the local housing market, a phenomenon called “residential sorting” by urban economists⁷⁴.

Figure 48: Where Lower-skill Service Workers Live in Cuyahoga County. Source: LODES, 2017.



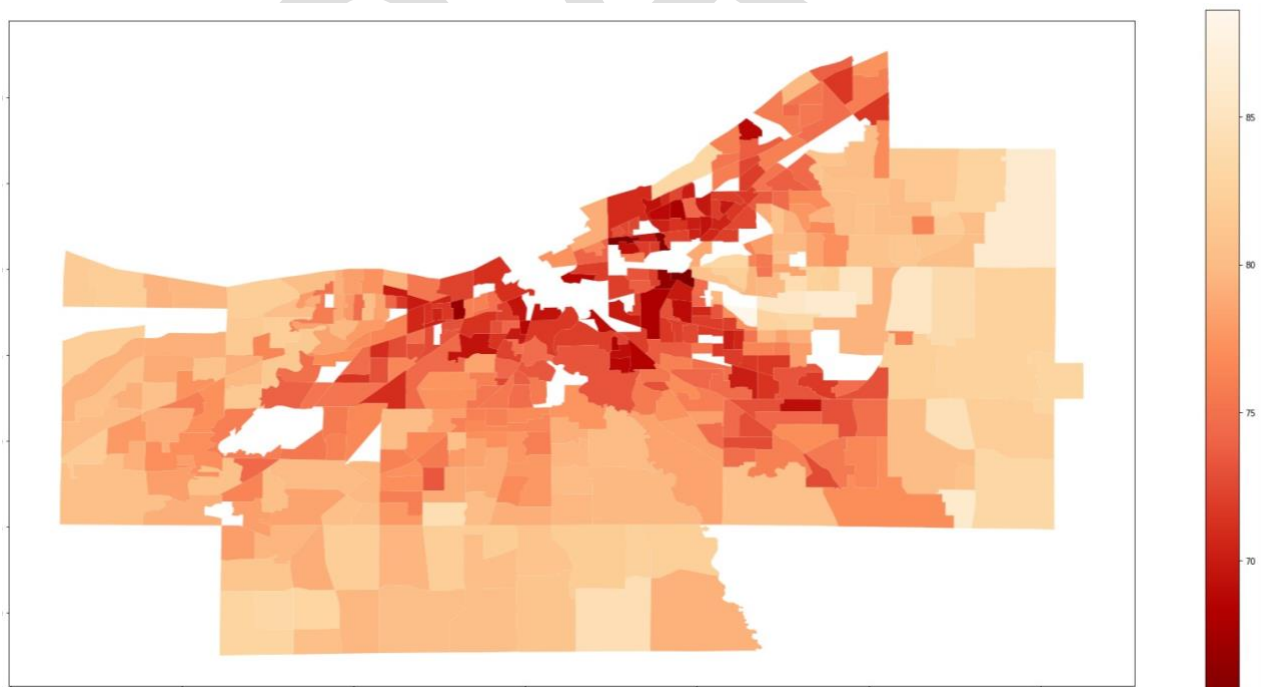
⁷⁴ https://www.russellsage.org/sites/all/files/logan/logan_diversity_chapter7.pdf

The sorting, then, gets played out in the way amenities flow. Knowledge- and tech-worker neighborhoods are flush with investment, manifest as a cornucopia of goods and services that check-off Maslow's hierarchy of needs: physical safety, healthy food, clean air and water, quality housing, good schools and healthcare, pretty aesthetics and parks, a strong social fabric and concomitant information access, not to mention the freedom from scarcity that allows the luxury of aspiration. Meanwhile, disamenities grow in areas of isolation: violence and trauma, dirty air and water, deteriorating housing, poor schools and health services, a social bond break with less information and support, and a lack of a psychological and spiritual reprieve that comes with perpetually existing without enough.

The spatial split brings to mind a book by Thomas P.M. Barnett's called "The Pentagon's New Map"⁷⁵. For the expert geostrategist, the world is divided between two types of geographies: the "Core", where "globalization is thick with network connectivity, financial transactions, liberal media flows, and collective security," and the "Gap", or areas disconnected from globalization and defined by poverty, low education rates and "the chronic conflicts that incubate the next generation" of instability. While Barnett's "haves and have nots" was conceived at the level of the nation-state, it need not stay there. There is a Core and Gap between American regions, within regions, and even within neighborhoods. "We ignore the Gap's existence at our own peril," concludes Barnett.

The sorting between amenity-rich and -poor communities ultimately ends up affecting longevity. This is evidenced by Figure 49 showing the spatial inheritances of life expectancy in Cuyahoga County. This is premature death clusters in space as if they were a contagion. In many respects, they are. The field of epigenetics, for example, shows how the environment, or the outside, modifies a person's DNA, or the inside⁷⁶. Elaborating, structural economic changes globally manifest as socioeconomic inequalities locally, igniting psychosocial stress that changes the body's biology.

Figure 49: Life Expectancy in Cuyahoga County. Source: U.S. Small-area Life Expectancy Estimates Project – USALEEP, 2010-2015.



⁷⁵ <https://www.esquire.com/news-politics/a1546/thomas-barnett-iraq-war-primer/>

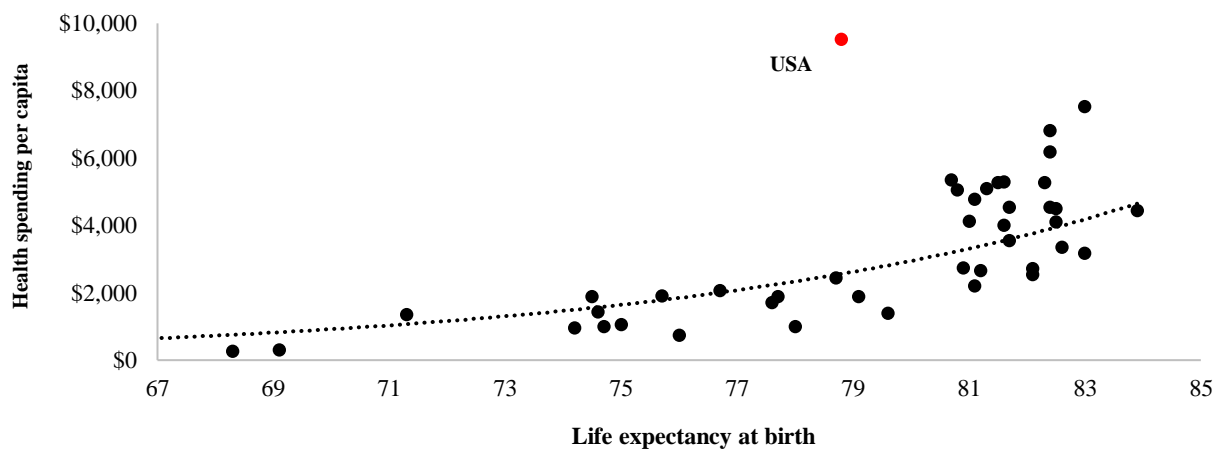
⁷⁶ <https://www.livescience.com/37703-epigenetics.html>

It's a sequence that lingers intergenerationally. "Each exposure has effects that may persist across the life course and in some instances may be transmitted to offspring via epigenetic inheritance," notes the authors of the essay "Biological memories of past environments: Epigenetic pathways to health disparities."⁷⁷ "Since epigenetic markings provide a 'memory' of past experiences, minimizing future disparities in health will be partially contingent upon our ability to address inequality in the current environment."

For the most part, this is not being done. Healthcare is often an "after the fact" industry, treating bodily disease as oppose to the "upstream" impacts on the body. That's not surprising. Health practitioners can only do so much. They can treat sick individuals, but sick societies? That's not up them. It's up to "us".

Regardless, what's occurring isn't exactly working. In 1970, life expectancy in the U.S. ranked 18th out of 43 peer nations. With the latest figures from the OECD, U.S. life expectancy today ranks 28th. This, despite the U.S. spending \$9,507 per capita annually in healthcare services—the most among developed nations. This discordance is plotted in Figure 50. Most countries with high spends have higher life expectancies. Not in America. The nation stands exceedingly alone, despite having the best medical institutions in the world.

Figure 50: Life expectancy versus health spending per capita. Source: OECD, 2017.



Now, the nation is awash with the dying, with 200,000 coronavirus deaths expected by September⁷⁸. COVID-19 sped up the slowing-moving car crash of the economically displaced and their diseases of despair and their chronic conditions. "When we someday tally up all the casualties of the coronavirus," writes Joe Pinsker in the *Atlantic*⁷⁹, "the high number of older Americans among the dead will reflect the sad, universal fact of physical decline. But for many of those who had underlying health conditions, inequality will be the actual cause of death."

Still, pandemics don't afford the luxury of looking back. What it does offer is a respite from the delusion that economic progress has not meant societal costs. For months, almost everyone was home and almost everything stopped. The plagued grabbed us by the proverbial jowl and made us look in the mirror, reflecting the fact that it's the most economically and physically vulnerable that are out about, tending to a capitalism that hasn't been tending to them.

⁷⁷ <https://www.livescience.com/37703-epigenetics.html>

⁷⁸ <https://nypost.com/2020/06/11/us-could-see-200k-coronavirus-deaths-by-september-experts/>

⁷⁹ <https://www.theatlantic.com/family/archive/2020/04/two-pandemics-us-coronavirus-inequality/609622/>



PART 3: THE FUTURE OF GROWTH



From Knowledge Economy to Knowledge Society

Efficiency vs. Resiliency

In the “The Rise of the Knowledge Society”, management theorist Peter Drucker explained that knowledge had historically been applied to being, or that manner of learnedness⁸⁰. “Then it came to be applied to doing. It became a resource and a utility.” Drucker noted that as the meaning of knowledge changed so did the value society placed on it. “Knowledge had always been a private good,” Drucker wrote. “Almost overnight it became a public good.”

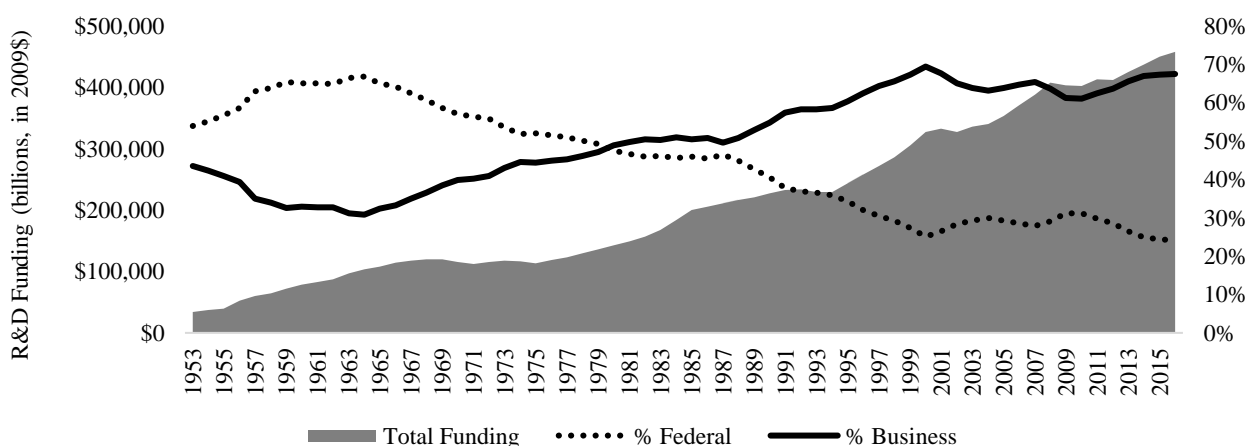
Knowledge as a public good cut several ways. A quality public educational system ensured there would be a supply of qualified workers going forward. Then there was the demand side of the equation, with federal R&D funding seen as key to the formation of new industries that would not only birth companies and grow jobs, but also better the quality of life. It was an effort jumpstarted just after World War II.

In a letter dated November 17th, 1944, President Roosevelt addressed Vannevar Bush, the Director of Office of Scientific Research and Development, recognizing his group’s success in applying scientific knowledge to “the technical problems paramount in war⁸¹”. “There is, however, no reason why the lessons to be found in this experiment cannot be profitably employed in times of peace,” President Roosevelt continued, noting that knowledge can be generated to improve national health and raise the standard of living. Roosevelt concluded: “New frontiers of the mind are before us, and if they are pioneered with the same vision, boldness, and drive with which we have waged this war we can create a fuller and more fruitful employment and a fuller and more fruitful life.”

Makes sense. If knowledge can be federally-marshalled for security purposes, so can it for purposes of prosperity.

A year later a report was produced called “Science: The Endless Frontier”, which conceived of the National Science Foundation: an effort to fund the production of knowledge for the public good⁸². That report kicked off an era in the 50s and 60s in which nearly 70% of all R&D was funded by the federal government (See Figure 51). It was a time of discovery that laid the foundation for computer science, and eventually today’s technological age.

Figure 51: R&D Funding by Funding Source, 1953-2016. Source: NSF



⁸⁰ <http://archive.wilsonquarterly.com/essays/rise-knowledge-society-0>

⁸¹ <https://www.nsf.gov/od/lpa/nsf50/vbush1945.htm>

⁸² <https://www.nsf.gov/od/lpa/nsf50/vbush1945.htm>



While that effort to tie science to economic development ushered in remarkable advances on numerous fronts, a split was nonetheless created in the institutions where most public-facing knowledge was produced, particularly academia. By the mid-20th century, scientists were given near-exclusive control over the assertion of truths, explained Yale sociologist Immanuel Wallerstein⁸³. Meanwhile, the practitioners of humanistic knowledge—those seekers of “the good and the beautiful”—had to cede standing. “Never before in the history of the world had there been a sharp division between the search for the true and the search for the good and beautiful.”

The fault line in this split was in the field of economics. Though economics—as an abstraction of human motivation and behavior in the milieu of the market—is by its nature a “soft” science, its practitioners aimed toward making it empirically known⁸⁴. So arose the notion of “*homo economicus*”, or the idea that the “economic man” was a behavioral blank slate who was consistently rational and pursued their self-interests optimally. Such assumptions were needed if economics was to be squeezed of its uncertainty. After all, irrationality abhors a mathematical constant, and despite how much irrationality is baked into the marketplace⁸⁵—in form of “bubbles”, biases, fear, greed, misinformation, or just dumb luck—the notion that the economy is just a sum of its predictable parts remains stubbornly unbending.

Meanwhile, as the notion of economic man became ideologically presumed, less knowledge was being applied to understanding the values of the free market—*or the “why” of profit*—with more energy devoted to understanding the process of valuation itself—*or the “how” of profit*. This is evidenced in a shift in how R&D was funded. In 1980, both government and the private sector funded R&D at a 1:1 ratio. Today, over two-thirds of research is funded via business. This pivot has been referred to as the “privatization of the public good”⁸⁶.

It is a pivot that has been greased and grown by the field of management consulting, arguably the purveyors of knowledge in today’s knowledge economy. Think McKinsey, Deloitte, Bain, etc. Such firms exist to perfect the how of profit. McKinsey, for instance, does “execution, not policy”⁸⁷, with various consultancy tactics executed including outsourcing, lay-offs, and automation on the stakeholder-side; and mergers and stock buybacks on the shareholder-side.

This “leaning-and-meaning” of the private sector was motivated by an aggressively normative belief that executive managers are “the agent of the individuals who own the corporation...and his Primary responsibility is to them,” so notes Milton Friedman in his famed 1970 *New York Times* piece “The Social Responsibility of Business is to Increase Its Profits.”⁸⁸ That dogma has since become doctrine, made real by the most standard of consultancy playbooks: efficiency as a means and profit as an end.

The execution of this worldview has had a profound impact on how and where money flows. The top 1% of earners take home 20.5% of the national income, levels not seen since the Great Depression (See Figure 52). Meanwhile, the salary and wages of all workers as a percent of GDP is down to 43.2%, after peaking at 51.7% in 1969 (See Figure 53). Illustrating these effects locally, 69.5% of Ohioan’s incomes were from salary and wages in 1969. In Cleveland, it was nearly 74%. By 2018, the percent of income coming from the salaries and wages decreased to 51.2% in Ohio and 54.2% in Cleveland (See Figure 54).

⁸³ <https://unesdoc.unesco.org/ark:/48223/pf0000183329>

⁸⁴ <https://spectator.org/is-economics-a-hard-science/>

⁸⁵ <https://www.kiplinger.com/article/investing/T052-C019-S002-is-the-market-rational.html>

⁸⁶ https://scholarship.law.duke.edu/faculty_scholarship/2144/

⁸⁷ <https://www.currentaffairs.org/2019/02/mckinsey-company-capitals-willing-executioners>

⁸⁸ <https://www.nytimes.com/1970/09/13/archives/article-15-no-title.html>



Figure 52: Top 1% National Income Share, USA, 1914-2018. Source: World Inequality Database

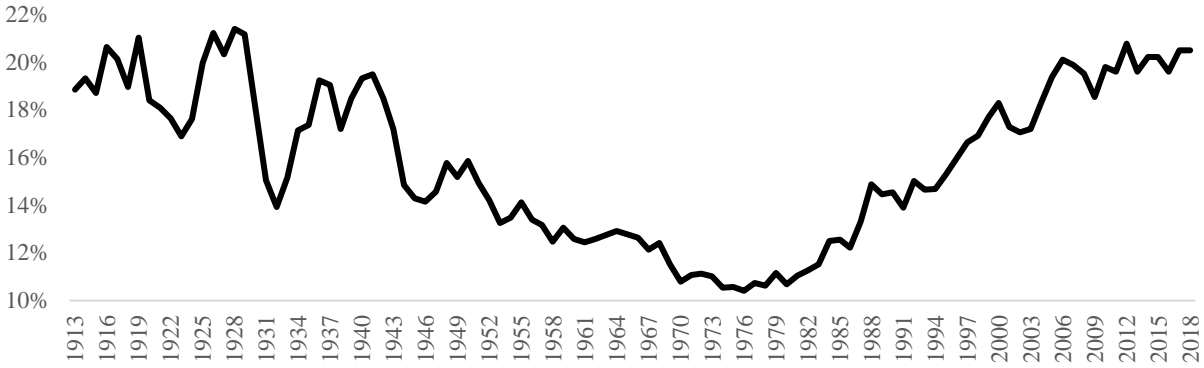


Figure 53: Wages and Salary Income as Percent of Gross Domestic Product, 1947-2019. Source: Federal Reserve Bank of St. Louis

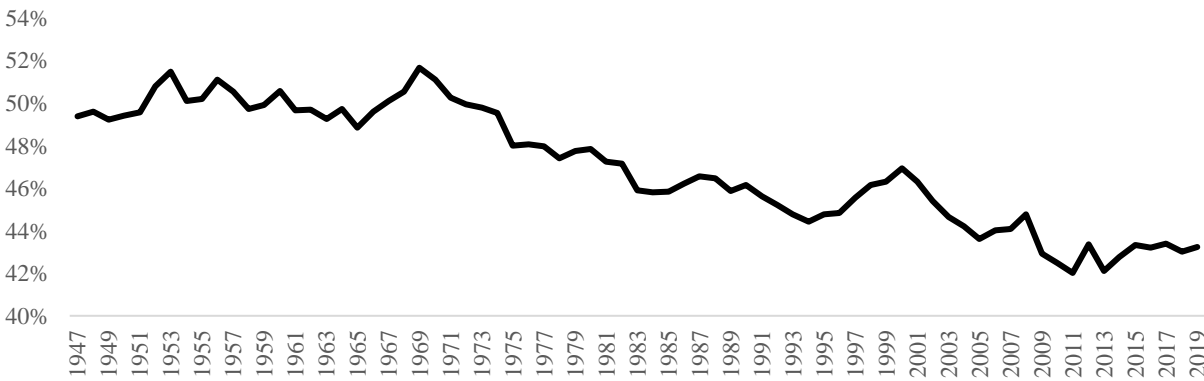
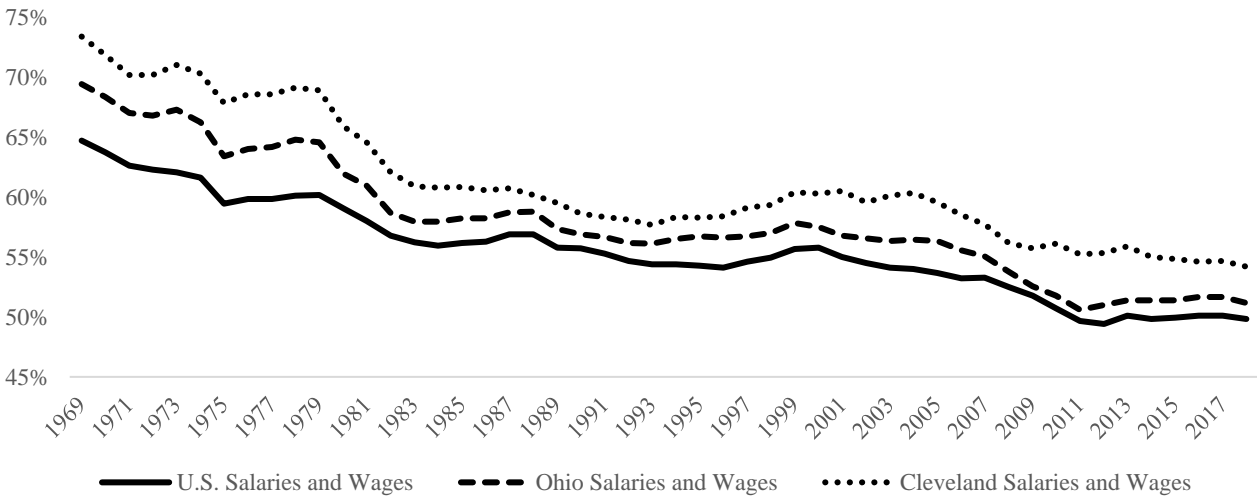


Figure 54: Percent of Total Income from Salaries and Wages, 1969-2018. Source: BEA

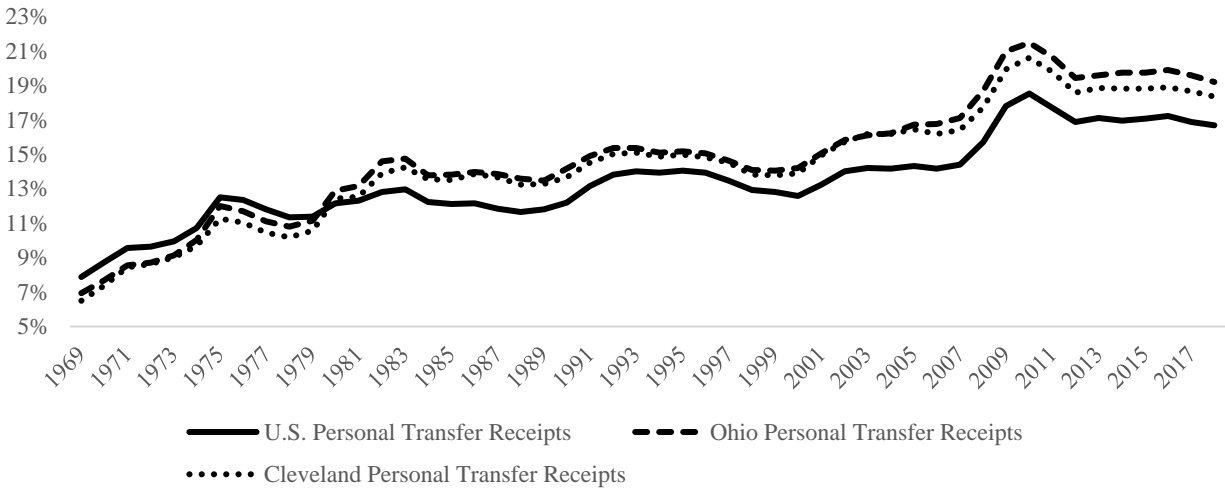


What's picking up the slack? Personal transfer receipts, defined as income payments to persons for which no current services are performed and net insurance settlements. Sources include government aid from Medicare, food stamps, unemployment benefits, and Social Security. Nearly 20% of Ohioan's incomes



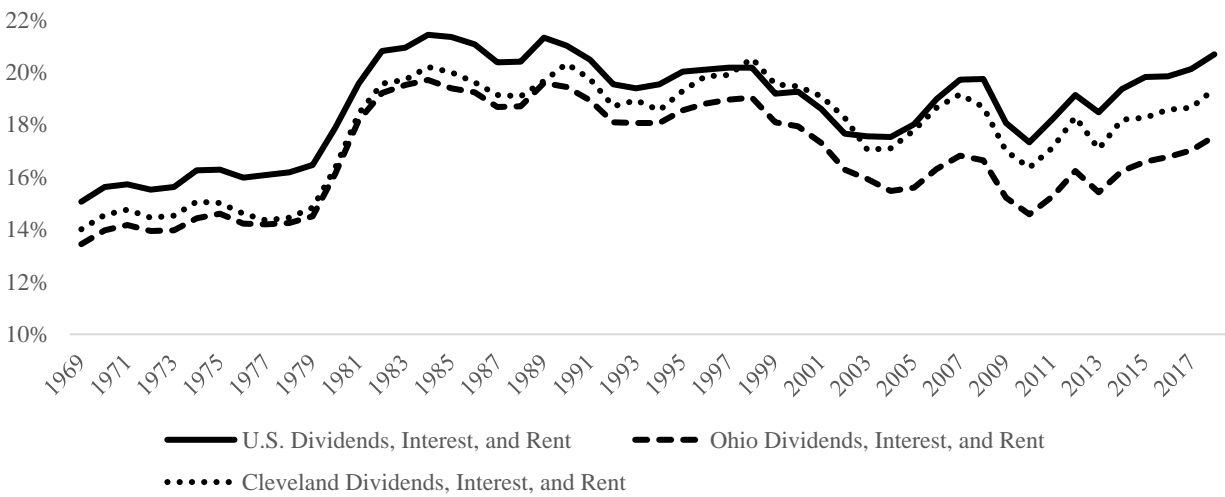
comes from such receipts today, up from 7% in 1969. In Cleveland, the increase went from 6.5% to 18.4%. If this is a rational market, one would loathe to see an irrational one.

Figure 55: Percent of Total Income from Personal Transfer Receipts, 1969-2018. Source: BEA



Income from dividends, interest, and rent is also rising. This is money paid to select individuals, particularly stockholders, lenders, and landowners. In 1969, 15% of total income in the U.S. was via these sources. That’s up to nearly 21%. In the Cleveland metro, the increase went from 14% to 19.4%. Dubbed “financialization”, this is essentially the process of money making money. The scholar Gerald Epstein defines financialization as “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies.”⁸⁹ Epstein explains that the financialization of an economy—historically symptomatic of a declining hegemonic power—is part and parcel with a shift in money “between capital and labor on the one hand, and between management and workers on the other hand.” It thus partly explains the decline in income from salary or wages across time.

Figure 56: Percent of Total Income from Dividends, Interest, and Rent, 1969-2018. Source: BEA



⁸⁹ <https://truthout.org/articles/financialization-has-turned-the-global-economy-into-a-house-of-cards-an-interview-with-gerald-epstein/>



As efficiency—or the how of profit—squeezed workers out of a livable wage, another negative externality took hold: the system became so lean that it became gaunt, susceptible to natural forces, like contagions and natural disasters, that don't operate on timetables as a stock and flow. “[I]f there is a single economic policy lesson to learn from the coronavirus pandemic, it is that the United States’ obsession with efficiency over the last half century has brutally undermined its capacity to deal with such a catastrophic event,” notes management theorist Roger Martin in his *Washington Post* essay “The virus shows that making our companies efficient also made our country weak.”⁹⁰

Medicine, cotton swabs, meat, testing kits, reagents, sanitizer, toilet paper, ventilators, facial masks—these necessities were unavailable when we needed them most, exposing the insufficiency with efficiency. That’s because firms and cities become specialists in the production of few things, a concept called “comparative advantage” by economists⁹¹. But these “things” are just bits in a broader supply chain, and if something goes wrong in a given city—e.g., a region in Italy was one of a few that manufactured cotton swabs for COVID-19 testing and was no longer able to make them⁹²—then bottlenecks occur. Bottlenecks, in turn, ignite chain reactions that only let the contagion compound, because the virus couldn’t be tracked and traced.

A converse to efficiency is resiliency. Whereas efficiency is the continued “leaning-and-meaning” of processes in an existing environment, resilience requires the ability to adapt to the unknown. “Resilient systems are typically characterized by the very features—diversity and redundancy, or slack—that efficiency seeks to destroy,” explains Martin⁹³.

How do nations and cities become resilient? There are tactical approaches—which are fairly easy to execute—and ideological approaches—which are not.

As for the tactical, there’s existing ways to build redundancies, or slack, in supply chains. The U.S.’ Strategic Petroleum Reserve, for instance, is well-stocked, with 635 million barrels of oil in salt caverns available on the Texas and Louisiana coasts⁹⁴. Conversely, the Strategic National Stockpile, or the national repository of antibiotics, vaccines, chemical antidotes, antitoxins, and other critical medical supplies, isn’t well-stocked. By April 9th, 90% of the federal stockpile of N95 masks were gone, with the remaining 10% being withheld from States for federal healthcare workers⁹⁵. This led States to outbidding each other on the private market, with one medical supply company in New Jersey selling N95 masks at 500% over the list price, leading a competitor, 3M, to file a price-gouging lawsuit⁹⁶. It’s a devastating commentary on the economics of public health.

The solution, of course, is to buffer public health from the private market, which means understanding that livelihood is an upstream driver of firm profit. No health, no workers, no customers, no profit. Knowing this would provide the impetus needed to build the Strategic National Stockpile so resiliency is baked into the system. It would also mean reshoring the production of goods that are of vital interest to American well-being, particularly pharmaceuticals and other forms of medical manufacturing. Figure 57 shows significant declines in the output of pharmaceutical firms based in the U.S.

⁹⁰ <https://www.washingtonpost.com/outlook/2020/03/27/economic-efficiency-resilience-coronavirus/>

⁹¹ <https://www.investopedia.com/terms/c/comparativeadvantage.asp>

⁹² <https://www.npr.org/sections/health-shots/2020/03/18/817801222/testing-swabs-run-in-short-supply-as-makers-try-to-speed-up-production>

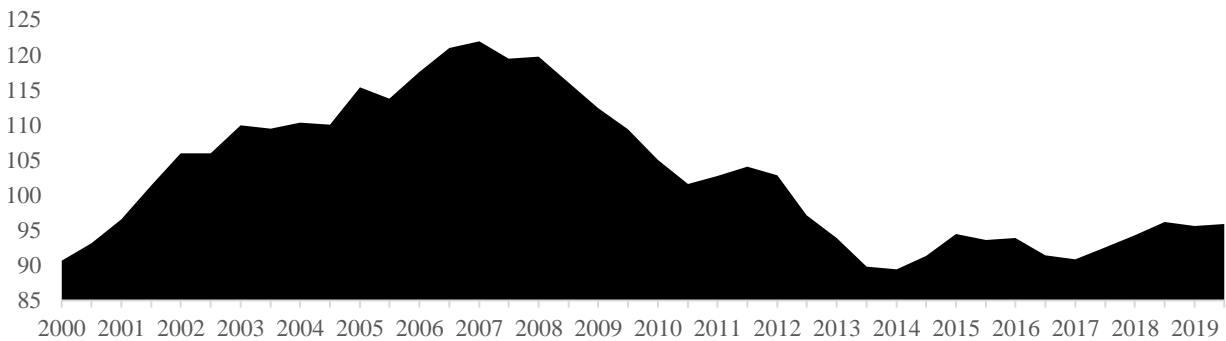
⁹³ <https://www.wsj.com/articles/efficiency-isnt-the-only-economic-virtue-11583873155>

⁹⁴ <https://www.cnbc.com/2020/04/01/us-aims-to-lease-space-in-emergency-oil-stockpile-after-buying-plan-canceled-sources-say.html>

⁹⁵ <https://khn.org/morning-breakout/federal-governments-n95-mask-stockpile-is-nearly-depleted-critics-see-trumps-color-ventilator-decision-influenced-by-political-tensions/>

⁹⁶ <https://www.cnn.com/2020/04/10/politics/3m-sues-new-york-city-n95-masks/index.html>

Figure 57: Industrial Production: Pharmaceutical and medicine, 2000 to 2019 (Index 2000 = 100). Source: Board of Governors of the Federal Reserve System (US)



Such trends have been worrying the American military brass, including Christopher Priest—head of the Defense Health Agency. In a July 2019 speech to the U.S.-China Economic and Security Review Commission, Priest notes⁹⁷:

The growing reliance of the U.S. on foreign sources for critical defense-related material is an issue that must be addressed at the national level...The most effective way to address this issue is to use the entire buying power of the federal government...to compel the nation’s pharmaceutical producers, as one example, to maintain the necessary infrastructure and capabilities to independently meet U.S. domestic defense needs, and to compensate the producers adequately for providing and maintaining these capabilities.

Which bring us to the ideological shift needed. The private sector is wired for efficiency, not resiliency. For the how of profit, not the why of profit. Resilience, conversely, is a public good—a good that can only be assured via a clear-eyed, self-assured public sector. “In the relentless quest for increased efficiency, which remains a key source of competitive advantage, the decisions made by individual market actors will produce, in the aggregate, a less-than-optimal supply of resiliency, a public good,” explains William Galston in the *Wall Street Journal*⁹⁸. “To solve this collective-action problem, government must act as a counterweight.” Increasingly, government hasn’t.

When Knowledge is Dumb

In his first inaugural address, President Reagan noted: "In this present [economic] crisis, government is not the solution to our problem; government is the problem."⁹⁹ With those words, President Ronald Reagan launched the devolution revolution.

Across the pond, UK Prime Minister Margaret Thatcher would echo his sentiment in more controversial terms: "Who is society? There is no such thing!¹⁰⁰" Thatcher's quote is often taken out of context. Society isn't an actor who can do things. The people and families who make up society can do things. Thatcher continues: "[N]o government can do anything except through people and people look to themselves first."

What Reagan and Thatcher were referencing—the push and pull between the public, private, and the individual—is what political economists had been studying for some time; namely, that there are three entities that hash out the rules of our collective reality: government, the market, and civil society. Yet how

⁹⁷ https://www.uscc.gov/sites/default/files/Priest%20US-China%20Commission%20Statement.pdf?mod=article_inline

⁹⁸ <https://www.wsj.com/articles/efficiency-isnt-the-only-economic-virtue-11583873155>

⁹⁹ <https://www.reaganfoundation.org/ronald-reagan/reagan-quotes-speeches/inaugural-address-2/>

¹⁰⁰ <https://www.margarethatcher.org/document/106689>



“the sausage is made” has historically been done via the relationship between the government and the market. This relationship, in turn, is driven by a dominant ideology.

The ideology is that of laissez-faire capitalism, or the belief that the “invisible hand” of the market knows how to make a better society than government. If the rational, self-interested economic man was a value, then laissez-faire is the policy paradigm that materializes it. Firm-friendly policies that subsequently flowed from this pendulous shift from citizenry to corporate governance include the deregulation and privatization of many public-facing industries, including transportation, utilities, healthcare, and education¹⁰¹—not to mention the labor-displacing strategies like automation and outsourcing that were discussed prior.

But a belief in laissez-faire capitalism as a prerequisite to progress requires a denial in how the sausage is actually made. Take investment. Much of the core tech that entertains us was not created by today’s consumer tech firms. It was created by government investment in the 50s and 60s, so notes Margaret O’Mara in her book “The Code: Silicon Valley and the Remaking of America.”¹⁰² In short, Silicon Valley was a child of the Department of Defense, with vast amounts of dollars funneled into start-ups and universities in a “race to space” with the Soviets. Still, that reality never took hold. An alternative reality did. The “continuing irony,” O’Mara writes, is that “some of those most enriched by the new-style military-industrial complex were also some of the tech industry’s most outspoken critics of big government.”

Then there’s the reality of what happens when an efficient, laissez-faire market crashes because (1) it’s not really efficient and (2) it’s not really hands off. A May 19th *New York Times* headline reads “Too Big to Fail: The Entire Private Sector.”¹⁰³ The article goes on to explain that with the economy in lockdown, the Federal Reserve has “essentially propped up entire financial markets” with its endless ability to buy assets with freshly-printed money.” Put simply, in times of crises the market and government essentially fold into themselves, with the latter providing the pouch for the former.

Then why does the laissez-faire dogma persist?

In his book “Narrative Economics: How Stories Go Viral and Drive Major Economic Events”, Nobel Laureate economist Robert Shiller argues that it’s the stories we tell that drive economic policy, not fancy models or laws of any social nature¹⁰⁴. Shiller discusses how the efficiency doctrine—while kicked off by the 1970 Friedman piece—matured into our reality post-1980. “Viral narratives need some personality and story,” Shiller writes. “One such narrative involved movie star Ronald Reagan, who became a household name as the witty and charming character of the highly popular US television show *General Electric Theater* from 1953 to 1962...Reagan used his celebrity to launch a massive free-markets revolution whose effects...are still with us today.”

This doesn’t mean data, information, or analytical models are meaningless. They’re not. It just means something beyond science is needed in the policy space. “Forecasting is simply not a strength of the species, we are much better with tools and narrative storytelling,” explains author Barry Ritholtz. Numbers don’t move people toward insight and action. Rather, it’s the stories we tell that spark a sea change¹⁰⁵. After all, civilization was made around a campfire¹⁰⁶.

Enter civil society, described in the Oxford Handbook of Civil Society as a “geometry of human relations” meant to be relatively independent of both the government and the market, and which ensures

¹⁰¹ <https://www.nytimes.com/2018/06/04/upshot/reagan-deregulation-and-americas-exceptional-rise-in-health-care-costs.html>

¹⁰² <https://www.amazon.com/Code-Silicon-Valley-Remaking-America/dp/0399562184>

¹⁰³ <https://www.nytimes.com/2020/05/19/business/too-big-to-fail-wall-street-businesses.html?smid=tw-share>

¹⁰⁴ <https://press.princeton.edu/books/hardcover/9780691182292/narrative-economics>

¹⁰⁵ <https://www.sciencemag.org/news/2014/09/ancient-campfires-led-rise-storytelling>

¹⁰⁶ <https://www.sciencemag.org/news/2014/09/ancient-campfires-led-rise-storytelling>



“spaces in which the agency and imagination of individuals can be combined to address the key issues of the day.¹⁰⁷” Civil society is operationalized in places like non-profits, academia, labor unions, nongovernmental organizations (NGOs), community groups, and foundations.

Importantly, civil society arose in response to the tension between economic and societal aims. But how it’s been operationalized has been less than ideal. The civil society was conceptualized as an additional category to the government and market: *a source of both value and values*. But it has “been relegated to the status of a residual”, notes the scholar Michael Edwards, often operating in a transactional capacity to provide health, education, and other goods and services as a backstop to government and firm obligations¹⁰⁸. This has greatly reduced its ability to act as a force for structural change, notes Edwards.

Moreover, civil society initiatives have increasingly invited market values and methodologies into their public-oriented missions. A recent *Vox* investigation examined the extent the World Health Organization (WHO) has contracted big management consultancy firms, with \$300 million going to McKinsey and BCG alone¹⁰⁹. Again, the playbook was to deploy management methods so as to make the public health process more efficient, with well-being as the outcome (as opposed to profit).

But it’s not working. “The theory [is] if you spend money on consultants, even if only for strategic advice, it would have some impact on your efficiency. You’d expect some gain,” said Ian Kirkpatrick, author of the study “NHS management consultants proven to worsen a service already under pressure.¹¹⁰” “We actually find there is no gain.”

“The consultants could not understand our humanitarian business and their recommendations were completely irrelevant,” echoes Mukesh Kapila, former undersecretary general for the International Federation of Red Cross and Red Crescent Societies¹¹¹. Their private sector models have been a “complete failure ... a complete and utter waste.” The irony, of course, is that when public missions fail, it’s the government or civil society that takes the public perception hit, sparking yet more of an urgency to make non-market entities to be “run like a business”.

The story of efficiency, then, it’s just so hard to break. But reality doesn’t care. The increasing imbalance between the market, government, and civil society is not working. The [conflation of 1918](#) (pandemic), 1929 (depression), and 1968 (civil unrest) in a span of two months tells as much. And while the issues rooting the crises are decades in the making, it’s been a slow-enough boil to keep the shreds of the path dependency intact. Until now. The frog is out of the stew. The Reagan-Thatcher world system is dead and dying. The question now turns to “What next?”

Increasingly, even VC firms are asking this question. Geoff Lewis, the founder of the investment firm Bedrock, recently tweeted: “wanted: mckinsey but for helping companies undo/reverse whatever mckinsey recommended over the past thirty years. will fund.¹¹²”

The question of “what next” can only be answered one of two ways: the creation of a more democratic, equitable way, or to a less democratic, equitable way. The playbook for the latter has defined the Trump presidency: a mix of increased laissez-faire with culture warring to get the working classes to turn in on themselves. The playbook for the former requires a key first step, or the awareness, asserts sociologist Immanuel Wallerstein, “that all systems...have determinate lives. They are not eternal. They have a period of origin, followed by a longish period of development and the ‘normal’ functioning, and finally a period of structural crisis which is also an era of transition.”

¹⁰⁷ DOI: 10.1093/oxfordhb/9780195398571.001.0001

¹⁰⁸ DOI: 10.1093/oxfordhb/9780195398571.001.0001

¹⁰⁹ <https://www.vox.com/science-and-health/2019/12/13/21004456/bill-gates-mckinsey-global-public-health-bcg>

¹¹⁰ <http://www.bris.ac.uk/news/2018/february/nhs-consultants.html>

¹¹¹ <https://www.vox.com/science-and-health/2019/12/13/21004456/bill-gates-mckinsey-global-public-health-bcg>

¹¹² <https://twitter.com/justglew/status/1264984355056898054>



Translation: our economic system is manmade and not handed down from some higher order. We broke it, but it can evolve into something else.

Wallerstein goes on to note that systems die under the weight of their “contradictions”. This paper has teased out this contradiction: economic progress has come with societal regress, i.e., growth has been decoupled from well-being. That contradiction has been fed by the policy paradigm efficiency as a means and profit as an end. It says here that the replacing policy paradigm is resiliency as a means and well-being as an end. “This latest crisis provides an opportunity to rebalance the imperatives of social solidarity with the dynamism of the market to enhance the legitimacy of government,” explains John Thornhill in *The Financial Times*¹¹³.

The argument for a more egalitarian capitalism is hardly new. The term “inclusive growth” has been the buzzword policy-wise for some time. In Cleveland, the term is tossed around like a football, with numerous civil society- and government-sponsored events aimed at softening the touch of the market¹¹⁴. But such efforts act as a band-aid to the breakage. Federal policy prescriptions, for instance, have recently been introduced at the highest levels of government, with New York Senator Chuck Schumer and New Mexico Senator Martin Heinrich introducing a bill that would require the Bureau of Economic Analysis (BEA) to supplement its quarterly GDP figures with an “income growth indicator,” or IGI, that measures how growth is distributed across each decile of earners¹¹⁵.

The proposed IGI is but one attempt to address the contradictions of the current system. The strategy is intuitive. “If we measure the wrong thing, we will do the wrong thing,” as the Nobel-winning economist Joseph Stiglitz wrote. Yet while adding inclusive growth to the scorecard is laudable, the issue is deeper than one of misguided measurement. Inclusive growth is less about whether measuring the wrong thing will lead to doing the wrong thing, and more about whether valuing the wrong things lead to measuring the wrong things that lead to doing the wrong things. The collective gauge of societal value: that’s what’s broke, and a new economic narrative is required to help fix it.

The leader of that new narrative build is arguably American-educated and UK-based economist Mariana Mazzucato, whose been referenced across the ideological spectrum—from Republican Senator Marc Rubio¹¹⁶ to Pope Francis¹¹⁷ to Congresswoman Alexandria Ocasio-Cortez¹¹⁸. In her book “The Value of Everything: Making and Taking in the Global Economy”, Mazzucato argues that things broke when our economy pivoted from a system in which value drove price to one in which price drove value. In early agrarian economies, for instance, the value of labor drove the value of the crop. Embedded in each was the inherent value to society—to eat so as to sustain life! But in modern national accounting systems, value gets abstracted formulaically. “In GDP we don’t make any value judgements,” Mazzucato said, other than to say what has a price must be valued¹¹⁹. Pollution thus counts positively in GDP because we have to pay people to clean it up. Same with sickness in healthcare, imprisonment in corrections, and bankruptcy proceedings in finance.

“If we don’t know the difference between value creation and value extraction activities ... we risk passing off anything included in GDP as value creation,” Mazzucato said. “In the process we reward those

¹¹³ <https://www.ft.com/content/6d944c62-77f0-11ea-af44-daa3def9ae03>

¹¹⁴ <https://www.clerisingsummit.com/>

¹¹⁵ <https://www.democrats.senate.gov/newsroom/press-releases/schumer-heinrich-introduce-legislation-to-require-new-income-growth-data-alongside-quarterly-gdp-reports>

¹¹⁶ https://www.rubio.senate.gov/public/_cache/files/9f25139a-6039-465a-9cf1-feb5567aebb7/4526E9620A9A7DB74267ABEA5881022F.5.15.2019.-final-project-report-american-investment.pdf

¹¹⁷ <https://www.vaticannews.va/en/pope/news/2020-03/pope-francis-replies-to-letter-to-pan-american-judge.html>

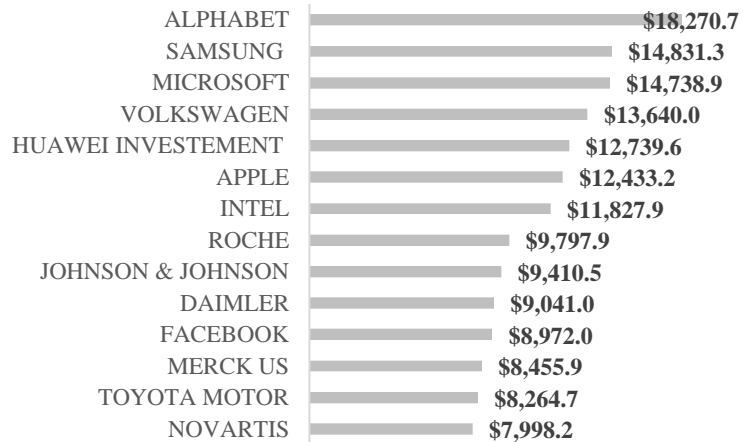
¹¹⁸ <https://qz.com/1669346/mariana-mazzucatos-plan-to-use-governments-to-save-capitalism-from-itself/>

¹¹⁹ https://www.dissentmagazine.org/online_articles/booked-mariana-mazzucato-the-value-of-everything-wealth-innovation-interview

activities, so it becomes sort of a feedback loop: because they're valuable, we consider them valuable and they will be valued by society so policymakers will try to increase those activities, and that then also increases those activities' share of GDP."

How consumer tech is deployed provides a case in point. There's a lot of investment happening in Quaternary firms, with Alphabet, Microsoft, Apple, and Facebook all in the top 11 globally in terms of corporate R&D expenditures (See Figure 58). In terms of R&D year-over-year growth, Facebook ranks first, with an increase of 32.5%¹²⁰. It's long noted that R&D is the upstream driver of innovation, be it at the firm or nation-state level. But what's crucial, here, is what happens with that innovation when it gets played out downstream. What ripples does it have in government and civil society, and ultimately at the level of personal experience?

Figure 58: Top Firms by R&D Expenditures (in millions). Source: European Commission, EU R&D Scoreboard, 2019.



For example, Facebook founder Mark Zuckerberg is under pressure to control the misinformation that is allowed to flow through his platform, particularly political messaging via the likes of President Trump. On a recent CNBC appearance, Zuckerberg balked at the notion that social networks should be "the arbiter of truth"¹²¹. In effect, he's saying Facebook's existence as a knowledge economy firm is to create efficiencies in how they make money, and how that make money is in precision advertising, which makes up 98.2% of the firm's revenue as of Q4 2019¹²². It's a bit of a twisted logic, really. The firm has no obligations to civil society, yet their product—the social network—is literally conceived as the lifeblood of civil society.

As such, Facebook has countless tentacles that touch so much of civic life. Most famously, Facebook's research partnership with Cambridge Analytica—a political consulting firm with ties to Cambridge University's Psychometric Centre at the Cambridge Judge Business School—enabled a campaign of misinformation that impacted the 2016 U.S. presidential election¹²³. The process for this occurrence was relatively straightforward: Facebook's data on millions of people was used to create algorithms by researchers that analyzed what made people "tick". Politically-charged information was then created to illicit network effects and mold voter behavior via Facebook's platform.

"Cambridge Analytica sought to identify mental and emotional characteristics in certain subsets of the American population and worked to exploit them by designing them to activate some of the worst vulnerabilities in people, such as neuroticism, paranoia and racial biases," explained Christopher Wylie, a former Cambridge Analytica data scientist, to the Senate Judiciary Committee in May of 2018¹²⁴.

¹²⁰ <https://iri.jrc.ec.europa.eu/scoreboard/2019-eu-industrial-rd-investment-scoreboard>

¹²¹ <https://www.axios.com/mark-zuckerberg-fact-check-twitter-facebook-0e3d9e92-00cd-4467-9ac8-bc50d4f8800e.html>

¹²² https://s21.q4cdn.com/399680738/files/doc_financials/2019/q4/Q4-2019-Earnings-Presentation-final.pdf

¹²³ www.npr.org/2018/05/16/611412562/whistleblower-cambridge-analytica-aimed-to-trigger-paranoia-and-racial-biases

¹²⁴ www.npr.org/2018/05/16/611412562/whistleblower-cambridge-analytica-aimed-to-trigger-paranoia-and-racial-biases



Dubbed “mind hacking” by philosopher Yuval Noah Harari, increases in data and computing power—coupled with a good understanding of neurobiology—have progressively allowed the proprietors of data capital to enter into the “attic” of our motivations. “[A]nd once they can hack you,” explained Harari, “they can not only predict your choices, but also reengineer your feelings¹²⁵”. That’s because stimuli by its nature stimulates, igniting an emotion which prompts a behavior (e.g., “like”) that further fuels the algorithm for the next round of stimuli—the process, in effect, creating an echo between the digital and biological that’s played out in the day-to-day.

A recent *New York Times* piece called “Facebook Fueled Anti-Refugee Attacks in Germany, New Research Suggests” is apropos¹²⁶. It discusses a study out of the University of Munich that showed wherever per-person Facebook use rose to one standard deviation above the national average, attacks on refugees increased by about 50 percent. Why? The first part of the answer was previously intimated: Facebook’s ad revenues are based on its treasure trove of data capital, and its data capital is dependent on user engagement. “Posts that tap into negative, primal emotions like anger or fear...perform best and so proliferate.¹²⁷” The algorithm learns this and adjusts accordingly, albeit within a vacuum of virtue.

The second part of the answer relates to the public consequences that follow when private value is derived through the stoking of lower-order processes. In Germany, individuals were being fed anti-refugee sentiment by “superposters” whose “exaggerated worldviews play well on the algorithm, allowing them to dominate newsfeeds.¹²⁸ This, then, incited predisposed Facebook users to act against local refugee communities under the presumption hate was the norm. Or, as business strategist Tom Peters recently tweeted: “Facebook Credo: Profit Maximization Through Maximized Monetized Rage Production.¹²⁹”

The knowledge economy as it has evolved is pretty dumb.

The alternative is to take a more circular approach to economic and human development, or one that ties the market to the production of well-being as opposed to its consumption. Returning to the theory of change espoused above, the evolutionary model we need is to go from agrarian economy, to industrial economy, to knowledge economy, to “knowledge society”, described as a society that generates and makes available to *all* citizens knowledge that may be used to improve the human condition¹³⁰. Instead, the knowledge economy today uses human capital as an input to innovation as opposed to an output from innovation. Put another way, the goal of economic activity is still a thing or a service to be consumed by people with means, not the production and dissemination of knowledge so people can grow their capacity to have means.

This is to say, then, that technological advance can be destructive if not deployed for instructive intent. The healthcare industry grows via innovations in treating a sickening populace, an epidemic of ill health tied to innovation in the agricultural sector that led to the mass production of low-cost, if nutritionally deficient, food. Meanwhile, the housing industry—through innovations in finance—has increasingly profited for the few at the dispossession of the many. Then there’s the economic development industry, the aim of which is to help cities succeed in the knowledge economy. Here, the strategy is consistently one of “brain gain” and “brain drain”—e.g., what can places do to attract and retain talent—when the real problem is “brain waste”: the unrealized potentialities in a city’s own “backyard”.

There’s got to be a better way of doing things—a more humane way of using human ingenuity. The last section looks to the case of Cleveland as to how this better way can play out.

¹²⁵ www.theguardian.com/books/2018/sep/14/yuval-noah-harari-the-new-threat-to-liberal-democracy

¹²⁶ <https://www.nytimes.com/2018/08/21/world/europe/facebook-refugee-attacks-germany.html>

¹²⁷ <https://www.nytimes.com/2018/08/21/world/europe/facebook-refugee-attacks-germany.html>

¹²⁸ <https://www.nytimes.com/2018/08/21/world/europe/facebook-refugee-attacks-germany.html>

¹²⁹ https://twitter.com/tom_peters/status/1270679054035890177

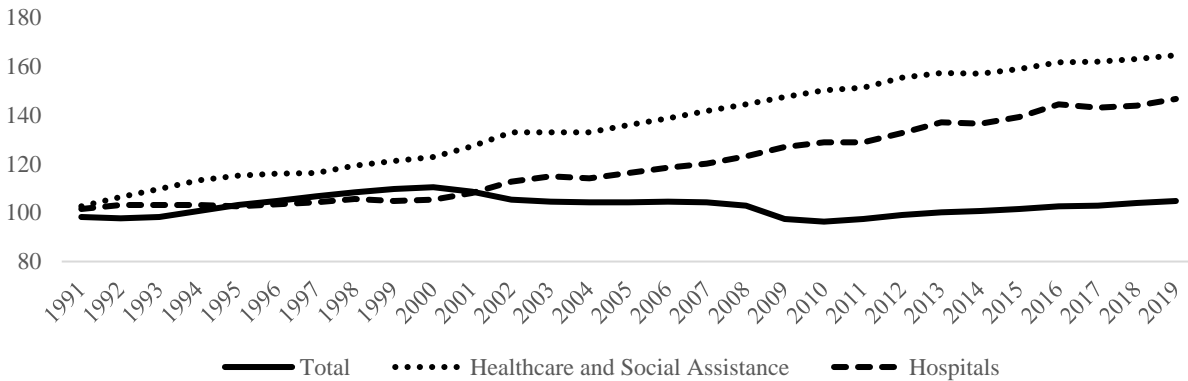
¹³⁰ https://en.wikipedia.org/wiki/Knowledge_society



Healing Cleveland’s Economy

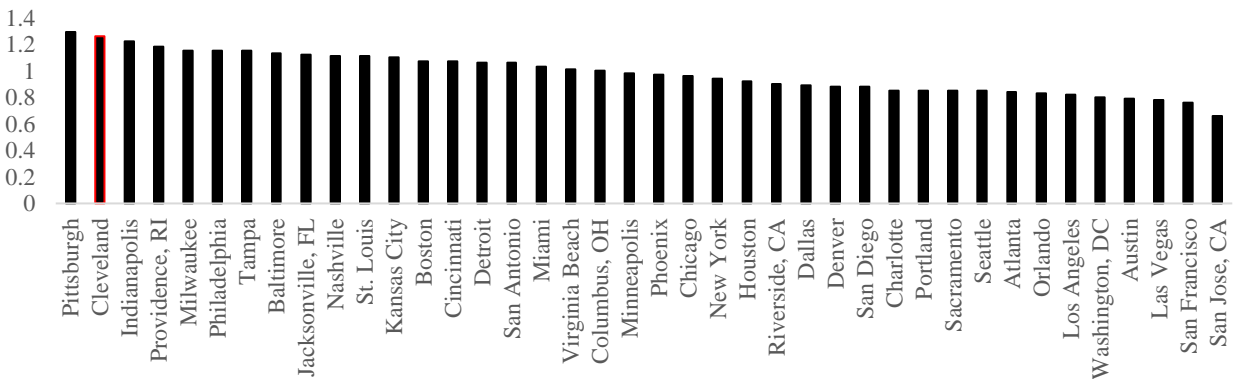
Cleveland is a global healthcare provider¹³¹. Patients come from all over for care. And when they’re not coming, the region, via the Cleveland Clinic, brings the hospital to them, with outposts worldwide¹³². Then there’s the virtual office. Telemedicine is riding the death of distance movement so that Cleveland doctors and nurses can care for Clevelanders and non-Clevelanders alike without the time and cost constraints of a commute. Cleveland, thus, exports healthcare services, making it a large part of the regional economy. This is evidenced by regional job growth trends across time, showing that employment in Healthcare and Social Services and in Hospitals is outpacing total employment (See Figure 59).

Figure 59: Employment Growth in the Cleveland MSA, 1990 to 2019 (Index 1990 = 100). Source: Bureau of Labor Statistics.



To what extent are healthcare jobs clustering in the Cleveland MSA compared to peer regions? Answering, the location quotient (LQ) for skilled healthcare occupations was examined for the largest 40 MSAs nationally. An LQ is an analytical statistic that measures a region's industrial specialization relative to the nation. It can reveal what makes a particular region “unique”. The higher the LQ, the higher the likelihood a good or service, like healthcare, is being sold outside a given market. The highest LQ (3.7) in the nation for Healthcare Practitioners and Technical Occupations is in Rochester, MN, home to the Mayo Clinic. Among the top 40 labor markets with a more diverse industry base, Pittsburgh is 1st with an LQ of 1.29, followed by Cleveland (1.26) (See Figure 60).

Figure 60: Location Quotient of Healthcare Practitioners and Technical Occupations for Largest 40 Metros. Source: Occupational Employment and Statistics, May 2019.



¹³¹ https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2522&context=urban_facpub

¹³² <https://www.clevelandclinicabudhabi.ae/en/pages/default.aspx>



Cleveland’s globalized healthcare scene is particularly concentrated in Cuyahoga County. The county ranks as having the 7th most hospital employees in the nation, despite being the 35th largest by population (See Table 7). This figure—combined with the fact that 9.8% of its total employment is in hospitals, 3rd only to Boston’s Suffolk County and Philadelphia County—is another indication to the extent healthcare is agglomerating locally.

Given Cuyahoga County’s acumen and status as a world-class healthcare provider, one could surmise that those resources would translate into good, if not excellent, local public health. But that’s not the case. According to the University of Wisconsin’s Population Health Institute 2020 figures, Cuyahoga County ranks 75th out of 88 counties in health outcomes for the State of Ohio (See Figure 61). Ohio’s Appalachian counties are the only ones that rank below it.

This incongruence is present at smaller geographies as well. The City of Cleveland’s Health Tech Corridor (HTC) is a 2.87 square mile stretch that runs from Downtown Cleveland to Cleveland’s University Circle. That little stretch houses nearly 40% of Cuyahoga County’s healthcare and social assistance jobs, despite comprising only 0.6% of the county’s land mass. Yet the HTC is also home neighborhoods with some of the worst health outcomes. An analysis of the census tracts that are most vulnerable to COVID-19 complications—as gauged by the concentration of residents 65 and older, as well as areas with the highest prevalence of high blood pressure, cardiovascular disease, diabetes, cancer, and chronic obstructive pulmonary disease (COPD)—revealed that two of the top five most vulnerable census tracts in Ohio were within the HTC’s boundaries (See Figure 62).

Table 7: Top 10 Counties Nationwide by Total Hospital Employment. Source: County Business Patterns, 2017.

	Number of Employees for Hospitals	% of Total Employees in Hospitals
Los Angeles County	162,879	4.3%
Cook County	121,563	5.1%
New York County	99,441	4.4%
Harris County	96,346	4.7%
Suffolk County	88,805	13.9%
Philadelphia County	67,244	10.6%
Cuyahoga County	64,661	9.8%
Maricopa County	63,752	3.8%
Dallas County	49,134	3.3%
San Diego County	49,031	3.9%

Figure 61: Health Outcome Rankings State of Ohio. Source: 2020 County Health Rankings.

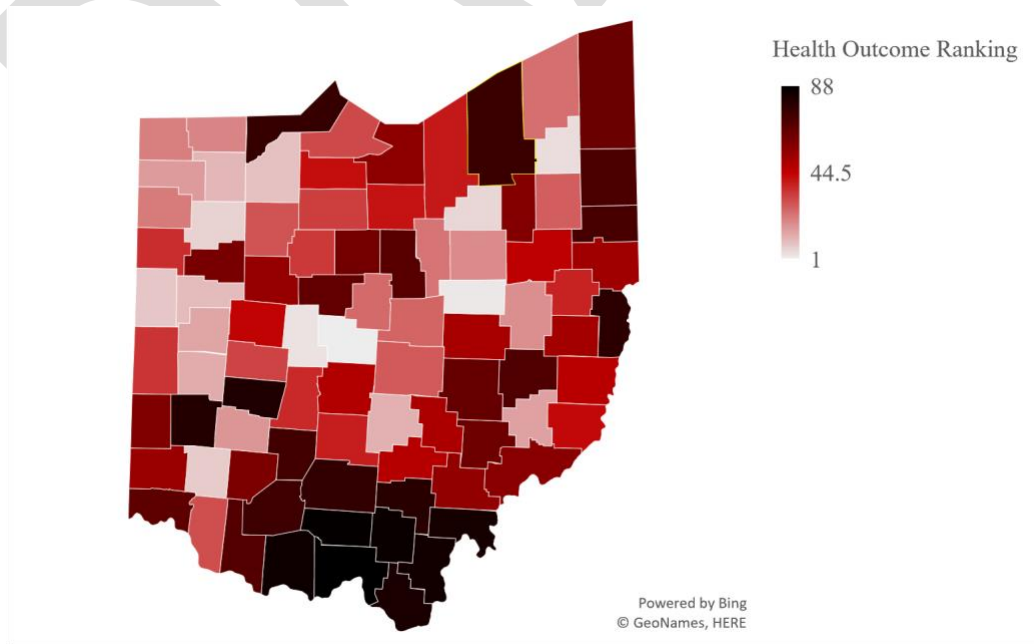
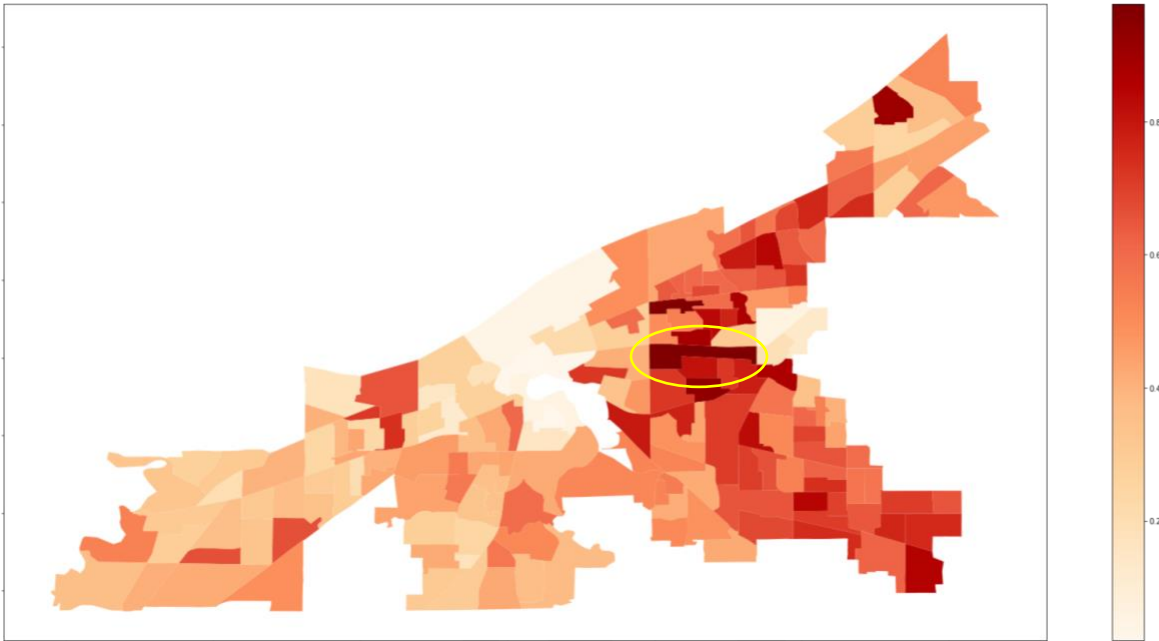


Figure 62: Neighborhoods by Density of Vulnerable Populations to Covid-19. Source: 2018 5-Year ACS, CDC 500 Cities Project, 2019.



Increasingly, education and healthcare, or the “eds and meds”, has become a globalized industry. Hospitals and universities have taken on the air of a worldwide headquarters, or a place in a city—not necessarily of the city—where innovation happens so a good or service is bettered, if only so market share is grown. In the case of name brand hospital systems, the quality and efficiency of care is important, but so is a path to more profit. The organizational missions that don’t create a beeline to that end can be overlooked. Specifically, a global hospital can become divorced from its local community, with population health becoming a no-brainer that few people think about. “That’s a good direction to go,” said former Cleveland Clinic CEO Toby Cosgrove in 2017 when asked how Cleveland’s health disparities can be lessened. “But how much can we do in population health?”¹³³

Fast forward to April 2020 and Cosgrove attempted to answer his own question in a co-authored *Politico* piece¹³⁴. Cosgrove, a Vietnam veteran, explained that the double whammy of COVID-19 and a spike in unemployment rates could be an opportunity to build a public health workforce he dubbed the “Health Care Ready Reserve”. Consider it an “army” of people whose skills are repurposed and aimed at protecting public health, not unlike President Roosevelt’s Works Progress Administration (WPA) that retooled the underemployed, pivoting their labor toward unprecedented levels of infrastructure and cultural development. “Of course we will provide useful work for the needy unemployed,” Roosevelt remarked in 1936, “we prefer useful work to the pauperism of the dole.”¹³⁵

Cosgrove argues that good health could be fostered by putting money in people’s pockets as they tended to the health needs within their local communities. Moreover, resiliency can get baked into an increasingly strapped healthcare labor force, with reserve workers freeing up caregivers for direct care as they are trained to “help administer Covid-19 tests, follow up on contact tracing of people who’ve been exposed to the virus, provide relief to exhausted medical staff, and perform vital logistical tasks such as

¹³³ <https://www.politico.com/interactives/2017/obamacare-cleveland-clinic-non-profit-hospital-taxes/>

¹³⁴ <https://www.politico.com/news/agenda/2020/04/03/army-of-health-workers-163557>

¹³⁵ https://www.ourdocuments.gov/doc_large_image.php?flash=false&doc=69

food distribution and disinfection.¹³⁶ Even after this novel virus has passed, Cosgrove argues, participation in the reserve force “could provide a steppingstone for workers to transition from shrinking parts of the economy to those, like home health care, that are growing.” It would also allow a level of preparedness for the arrival of the next novel virus, which is less a question of “if” but “when¹³⁷”.

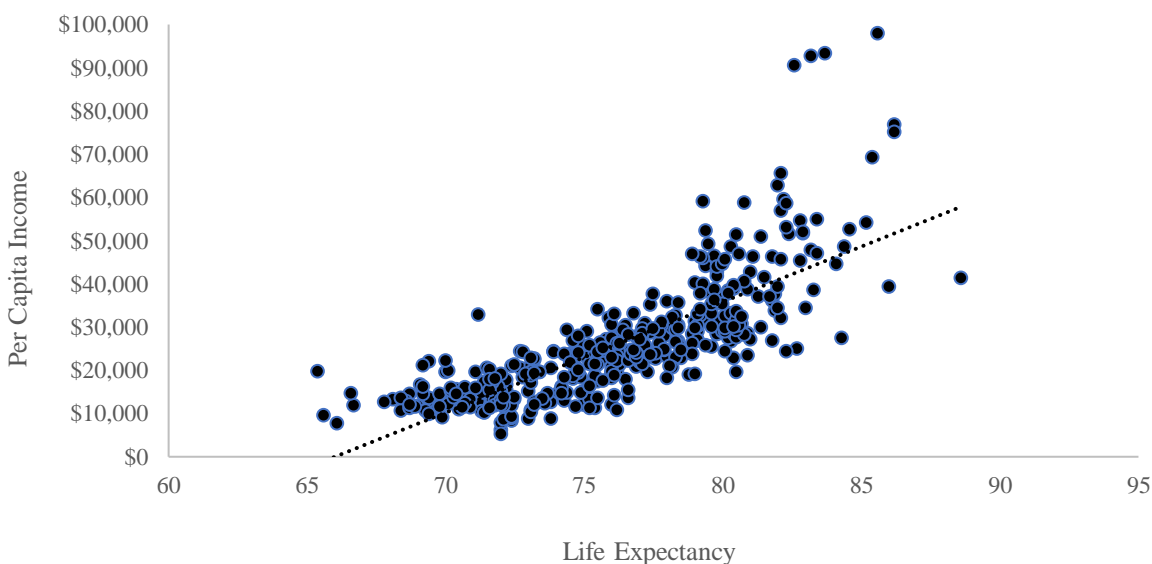
This is a good example of how investment and human capital can be pointed toward a need, with more investment and human capital generated as an effect of the response. And while Cosgrove was strategizing nationally, it’s likely the experience in Cleveland was an influence in this worldview. Plainly, the Clinic is a world-class health system that existed side-by-side with the unhealthiest of neighborhoods. But there’s a surplus of untapped labor in those neighborhoods, which could be pointed toward population health demands. It’s a perfect proving ground in changing how the economics of health works. In doing so, Cleveland could change the world by changing Cleveland.

But is there a will for such endeavors? Or more pointedly: Can Cleveland develop a population health model that’s an envy of the world?

Well, this assumes that (1) Cleveland’s government, its market, and its civil society organizations can agree that population health is not only important, but it’s of the utmost of importance; and (2) there’s a collective recognition that the copycat-like fetishization of needing to evolve into a Quaternary, technology-sectored economy doesn’t in itself doesn’t mean anything, unless there is a particular societal aim that technology can serve—as opposed to society serving a particular technological aim.

Getting to a consensus that population health is an issue to rally around should be straightforward. To put it most crudely, knowledge drives economic growth, as does manual labor. Each are underpinned by the soundness of body and mind. Unpacking the obvious, there’s a strong correlation between life expectancy and per capita income. Figure 63 plots out that relationship for the census tracts in Cuyahoga County, with higher per capita income tracts strongly associated with longevity ($r^2 = .78$).

Figure 63: Life Expectancy v. Per Capita Income for Census Tracts in Cuyahoga County. Source: U.S. Small-area Life Expectancy Estimates Project – USALEEP, 2010-2015 and ACS 5-Year, 2011-2015.



¹³⁶ <https://www.politico.com/news/agenda/2020/04/03/army-of-health-workers-163557>

¹³⁷ <https://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-climate-change/>



Of course, there's bi-directionality at play. Does health drive income or income drive health? Policy-wise, there's a bias to imply the latter. Elaborating, when it comes to economic development, it's usually a one-directional strategy: skill-up workers for more income, which will then "trickle down" to better access to care and better health. But the current analysis has extensively showed how labor market trends are increasingly divorced from well-being via the automation of labor, the bifurcation of the labor market, and the cost-cutting and profit-seeking behaviors of firms that imbalance the scales between labor and capital. This—combined with the fact that the financialization of healthcare has meant costs have doubled at the rate of wage growth over the last decade¹³⁸—translates into a strategy that's not working. Hence, the poor health outcomes nationally, and the lack of preparedness in public health emergencies that COVID-19 has laid ruthlessly bare.

Alternatively, an argument can be made for economic development policies to take a less circuitous route toward well-being. This means investing heavily in population health, not unlike Cleveland does for education (See "Say Yes to Cleveland"¹³⁹). For instance, a recent study called "Health and economic growth: Evidence from dynamic panel data of 143 years," showed a nation's per capita income and GDP per capita growth rate were more causally affected by life expectancy than other key variables, including schooling¹⁴⁰. "The probable channels through which life expectancy is envisaged to foster growth is through capital accumulation and boosting productivity..." the author notes. Put simply, better health leads to higher productivity of the worker, a benefit to the firm. And more working years for the worker meant more savings and wealth, which has a generational effect. "Policy implication that follows...is that per capita income can be boosted through focused policy attention on population health," the author concludes.

The argument can be made that Cleveland has begun to rally around the issue of population health. Recently, there's been a government and civil society effort to fund lead prevention efforts to the tune of \$10.1 million as of late 2019¹⁴¹. Infant mortality efforts are also underway, such as First Year Cleveland¹⁴². Yet the efforts are piecemeal. They are civil society and government efforts that are not embedded in market efforts, rather they are reactive efforts to the comings and goings of a profit-first market.

Take lead. Much of childhood lead exposure is via the deterioration of the city's aging housing stock. Yet this deterioration is downstream from housing finance practices that lead to the underfinancing of traditional mortgages in poorer neighborhoods on one hand, and the over-leveraging of unfair, sub-prime mortgages in those same neighborhoods on the other. Housing disinvestment, then, is downstream from a lack of middle-income job opportunities, which is downstream from laissez-faire policy practices, etc.

Population health, then, is a "wicked problem". These are problems that are complex, systemic, interconnected, and urgent¹⁴³. Wicked problems need to be met with an approach that is mission-oriented, not unlike how the U.S. marshalled attention, investment, and innovation to put a man on the moon. Historically, however, such missions have not been pointed at societal aims. In Richard Nelson's 2011 book "The Moon and the Ghetto", he asks why innovation has led to such demanding feats as landing a

¹³⁸ <https://www.ajmc.com/newsroom/healthcare-costs-increased-twice-as-fast--over-last-decade#:~:text=Employee%20and%20employer%20spending%20on,per%20year%20out%2Dof%2Dpocket>

¹³⁹ <https://sayyescleveland.org/>

¹⁴⁰ <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0204940>

¹⁴¹ <https://www.cleveland.com/news/2019/11/cleveland-local-foundations-commit-81-million-to-lead-safe-home-fund-and-resource-center.html>

¹⁴² <https://www.firstyearcleveland.org/the-issue>

¹⁴³ <https://academic.oup.com/icc/article/27/5/803/5127692>



man on the moon, yet the problems of living continue to me bet with technologically unsavvy approaches¹⁴⁴.

According to economist Mariana Mazzucato, an emerging policy approach to tackle wicked problems is called “mission-oriented innovation policies”, described as “systemic public policies that draw on frontier knowledge to attain specific goals, or ‘big science deployed to meet big problems’”¹⁴⁵. In other words, it’s an approach that leans in on the technological advances of the Fourth Industrial Revolution, allowing the power of innovation to solve social problems as it does market efficiency problems. If it sounds intuitive, it is. The issue is with implementation, as so much of innovation unthinkingly gets pushed into the market due to the aforementioned imbalance between government, civil society, and the market. Alternatively, government—backstopped with the humanistic high-ground of the civil society—can use both the power of the purse and the polls to co-create market forces. Put simply, government needs to get its groove back, led less by actors, and more by governors. Notes Mazzucato:

“To reap the substantial benefits from this approach, what is needed is to abandon the ideology that often informs, and misinforms, the role that the state can play in the economy. Public, private, and third sector actors can work together in new ways to co-create and shape the markets of the future... Only in this way can investment-led growth help address not only the growth problem but help solve the wicked 21st-century challenges ahead.”

Contrast this approach to how economic development has recently been done in Cleveland. Arguably the biggest innovation-led economic development policy push of recent memory was that of “Blockland”¹⁴⁶, the aim of which was to capitalize on blockchain technology as a means to make firms and government more efficient. But yet another way to “lean and mean” everything in the name of profit is simply not on a top 10 list of what the Cleveland collective needs right now, at least if an honest scan of the local landscape is had. Worse, limited government and civil society funds subsidized the effort, if only because a narrative took hold, capturing the public’s imagination. It was the story and the personalities behind the effort that got folks attention, as opposed to the strategy being conceptually rigorous.

A potentially more conceptually sound economic development strategy underway in Cleveland is around the “Internet of Things”, which is a systematic way to increase information across geographies and domains via the deployment of connected devices¹⁴⁷. But if that approach is simply about making firms more efficient, then its economic development aims will fall short, if not make things worse. What must be imbued in the effort are societal values, or an understanding that it’s not the increased information in how “things” work that’s important, but rather how the information derived from how things work can be used to better the lives of the people that make the things work. How, for instance, can medical devices and sensors be used to better population health?

That we are at a societal tipping point while having more access to technology than ever, well, it seems counterintuitive. But when you unpack how our tools have been used, it’s not. As noted by the University College of London’s Nicholas Maxwell, the issue boils down to the fact that man’s need to solve the problems of science have not been met with equal energy spent on the problems of living¹⁴⁸. “It is...of decisive importance to appreciate that all global problems have arisen because of a massive increase in scientific knowledge and technology without a concomitant increase in global wisdom,” Maxwell notes. He goes on to explain that as long as we lacked modern science, the lack of wisdom—described as the capacity to understand what is of value in life for oneself and for others—mattered less, as the ability to

¹⁴⁴ <https://academic.oup.com/spp/article-abstract/38/9/681/1629269?redirectedFrom=PDF>

¹⁴⁵ <https://academic.oup.com/icc/article/27/5/803/5127692>

¹⁴⁶ <https://www.npr.org/2018/11/23/664364583/from-believeland-to-blockland-cleveland-aims-to-be-a-tech-hub>

¹⁴⁷ <https://www.wired.co.uk/article/internet-of-things-what-is-explained-iot>

¹⁴⁸ <https://www.ucl.ac.uk/from-knowledge-to-wisdom/essays/from>



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wreak havoc was limited. “Now that our power to act has been so massively enhanced by modern science and technology, global wisdom has become, not a luxury, but a necessity.”

The future of growth, then, is exactly that. It will not be recreated by gluing back the vestiges of the 20th century. It will be principled on quality of life, not the quantity of lives. On resiliency, not efficiency. On the production of well-being, not its consumption.

The time is now. 2020 is the year when the luxury of our illusions left. What’s left on the other side is either something for the better, or something for the worse. But the urgency to heal is arguably as high as it’s ever been.

DRAFT