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Dear Reader of *The Reserve Review*,

It is with immense pride that we present the Spring 2026 issue of *The Reserve Review*. What began last year as an ambitious first step has grown into something we could only hope for: a thriving publication that continues to push the boundaries of undergraduate economic writing and make economics accessible to all.

This issue is a testament to the momentum our organization has built. Over the past semester, our writers, analysts, designers, and editors have worked to research a wide range of topics. From the hidden costs of AI infrastructure on American electricity bills, to the geopolitical realignment reshaping West Africa, to the economics of sports betting and baseball attendance right here in Cleveland, this issue reflects the relevance of economic inquiry in our everyday lives.

The core mission of *The Reserve Review* remains unchanged: to make economics approachable, meaningful, and thought-provoking for a broad audience. The CWRU Journal of Economics seeks to give students an opportunity to have a glimpse into the world of academic research. This magazine highlights articles put together from both our Data & Graphics and Econometrics Divisions. By beginning the research process through reading previous literature, describing summary statistics and coding visualizations that paint the picture of the question, students receive mentorship and guidance while being equipped with the tools to conduct research on their own.

Economics shapes every corner of our world. Too often, these conversations remain locked behind ivory towers and technical academic jargon. We believe that undergraduate voices have a role to play in opening those conversations up. Each piece reflects hours of research, revision, and intellectual curiosity.

As we continue to grow, we remain committed to building a community where students of all majors and backgrounds feel confident to engage with economics. *The Reserve Review* is created by a community of undergraduate students seeking to earnestly produce economic research that will impact others. We are grateful to everyone who has contributed to it, and to you, our reader, for being part of it.

Thank you for your continued support. We hope these pages spark curiosity, challenge assumptions, and remind you that economics is not just an academic discipline – it is the story of how we live, choose, and shape the world around us.

Sincerely,

Joanna Chiu
President & Editor-in-Chief

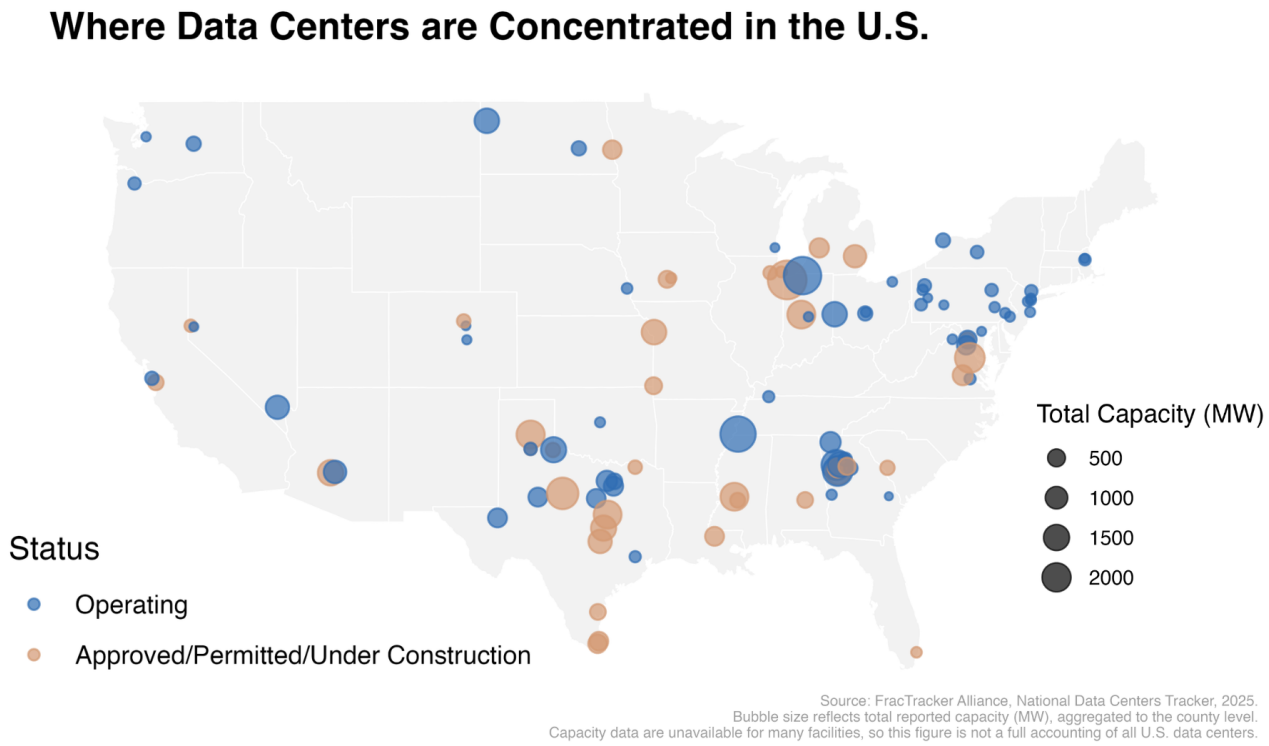
Part I
Data Features

The Hidden Tax: Data Centers and Your Electricity Bill

Elijah R. Davis

ASHBURN, Virginia, an affluent outer suburb of Washington, DC, is known for highly rated public schools and high household incomes. It's also home to the world's largest concentration of data centers—massive warehouses full of computers that support online services like cloud computing, streaming platforms, and, increasingly, artificial intelligence systems. Those facilities require enormous amounts of electricity, a feature that has made them a hot topic from national politics to local Facebook groups and that raises the question: who bears the cost of the power they consume? It's complicated, but Virginia households may already be seeing this "hidden tax" showing up on their utility bills. A typical Virginia household using 1,100 kilowatt-hours per month now pays about $175 a month for electricity; that's about $44, or 33%, more than in January 2022 [6].

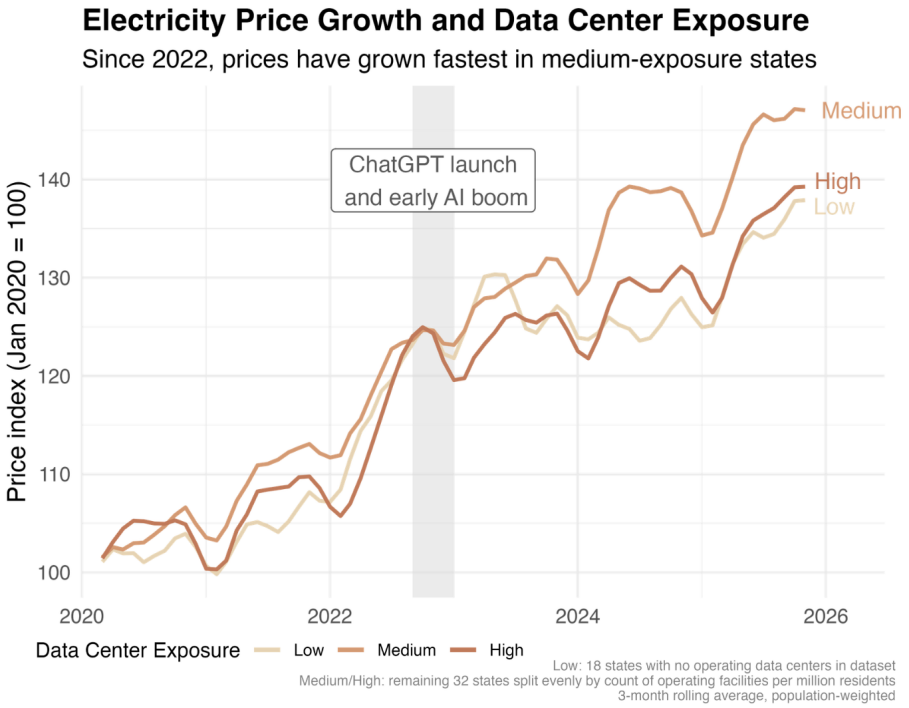
The U.S. alone holds roughly 45% of global data center capacity [2]. Some of the largest concentrations of data centers in the U.S. are in Northern Virginia, Georgia, and Texas. New development tends to be focused on the South, Midwest, and Great Plains, while the Northeast and West Coast show comparatively less new construction in this dataset.



These massive data centers operate continuously and require extensive cooling infrastructure, establishing them as one of the fastest-growing drivers of power consumption in the country [5]. As the U.S. undergoes an unprecedented build-out of data center infrastructure to support the development and adoption of AI, policy makers and utility providers have raised concerns about upward pressure on electricity prices.

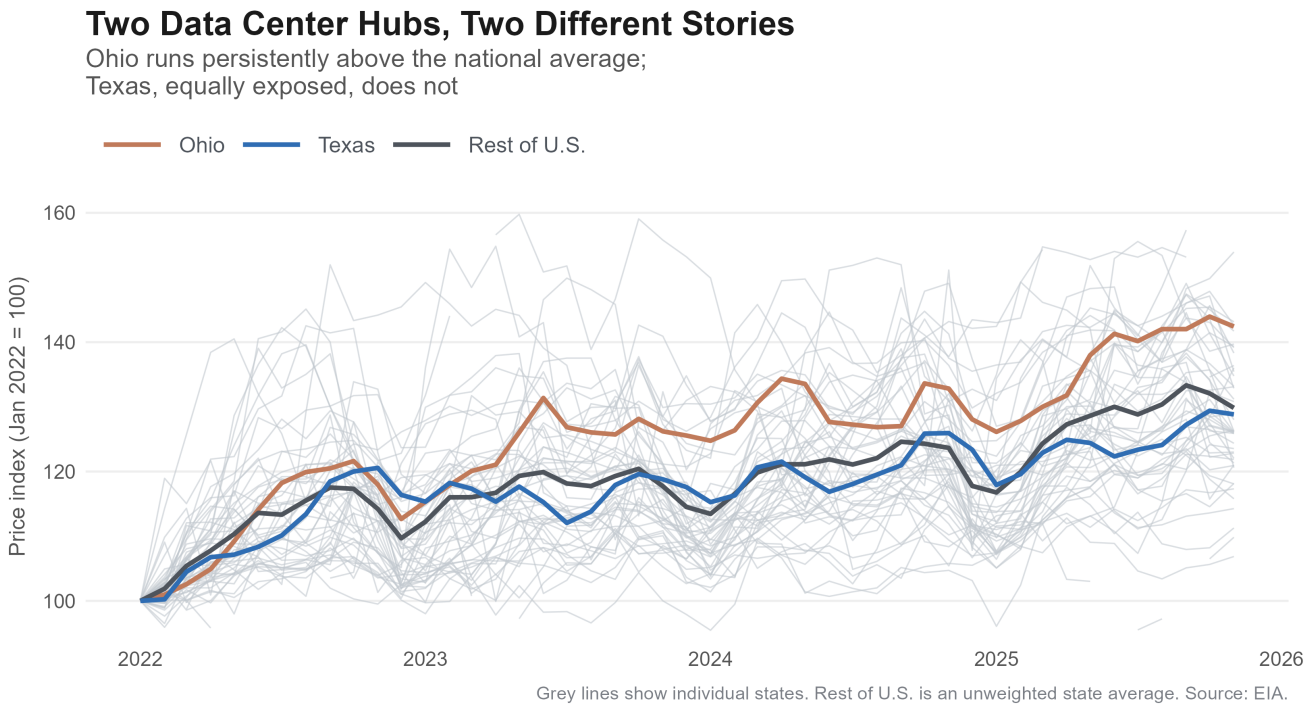
Since ChatGPT's launch in late 2022, electricity prices have grown faster in states with higher counts of data centers per capita after trending similarly beforehand. Interestingly, prices have grown fastest in medium-exposure states, while prices in high-exposure states have trended similarly to those in low-exposure states.

The similar pre-2022 trends make it harder to argue that the divergence simply reflects long-running differences between the groups. They do not, however, rule out shocks that emerged around 2022 and landed unevenly across them. It should also be noted that electricity markets are regionally interconnected, and price dynamics depend not only on demand but also on generation mix, transmission capacity, and regulatory structures [1]. Whether consumers are truly bearing a hidden cost, or if broader grids are simply absorbing it, is not always clear.



Zoom in, and the story gets complicated.

If data centers were driving electricity prices up uniformly across high-exposure states, you would expect every high-exposure state to show prices surging well above the national average. But that is not what the data shows. Texas, consistently one of the largest data center markets in the country, has instead tracked very closely the national average since 2022.



This may be in part due to the structure of its independent ERCOT grid, which operates outside the interstate transmission system that governs most of the United States, insulating it from broader regional pressures [4]. Indeed, the regional grid appears to absorb local demand shocks rather than solely passing costs down to residents.

Ohio tells an opposite story. Despite sitting in the same high-exposure tier as Texas, Ohio's electricity prices have run far above the national average since 2022—grwoth has been 8 percentage points higher than the rest of the country since the start of the ChatGPT era. Unlike Texas, Ohio sits inside PJM, a multi-state grid that has passed $1.3 billion in Ohio transmission upgrade costs directly to ratepayers, which may help explain why Ohio's electricity prices have risen more sharply[3].

While the connection between data center concentration and higher electricity rates is not universal, the aggregate trend is evident. As AI investment continues to pour into a handful of states, the hidden tax on electricity bills is likely to grow with it.

Data Notes

Residential electricity prices are taken from monthly EIA data, measured in cents per kilowatt-hour at the state level. Different states begin at vastly different baseline price levels, which is why raw prices are transformed into a standardized index. The divergence chart uses population-weighted averages—each state's price is weighted by its population before averaging across the group, so that larger states count for more and small states do not skew the result.

State exposure groups; based on operating datacenter counts in the FracTracker database:

Group	States
Low (0 data centers)	AK, CT, DE, FL, HI, ID, IL, KS, ME, MN, MT, NH, RI, SD, UT, VT, WV, WY
Medium (0.1-0.7 data centers per million residents)	AR, CA, CO, IN, KY, LA, MA, MD, MI, MO, MS, NC, NJ, NY, SC, WI
High (0.7-20.7 data centers per million residents)	AL, AZ, GA, IA, ND, NE, NM, NV, OH, OK, OR, PA, TN, TX, VA, WA

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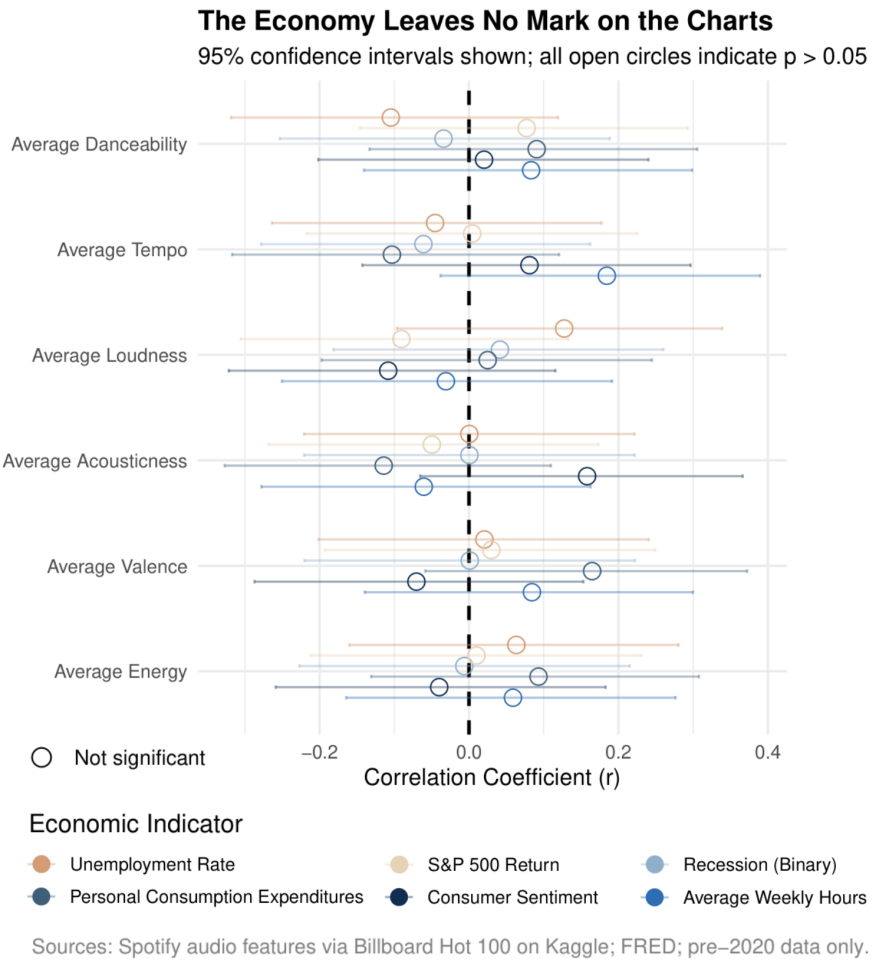
The Economy Moves. The Music Doesn't.

Isabel Haytayan

POPULAR wisdom has long held that hard times make for sad songs. When jobs disappear and markets fall, so the story goes, listeners reach for melancholy ballads; when confidence rebounds, the dancefloor fills. The intuition is tidy, culturally resonant, and, according to a systematic analysis of Billboard Hot 100 chart data matched against six macroeconomic indicators, almost entirely wrong.

From 2000 to 2019, quarter-over-quarter swings in unemployment, consumer sentiment, spending, working hours, stockmarket returns and recession status have no discernible relationship with shifts in the valence, tempo, danceability, loudness, energy or acousticness of hit songs. Not a single pair produces a statistically significant correlation.

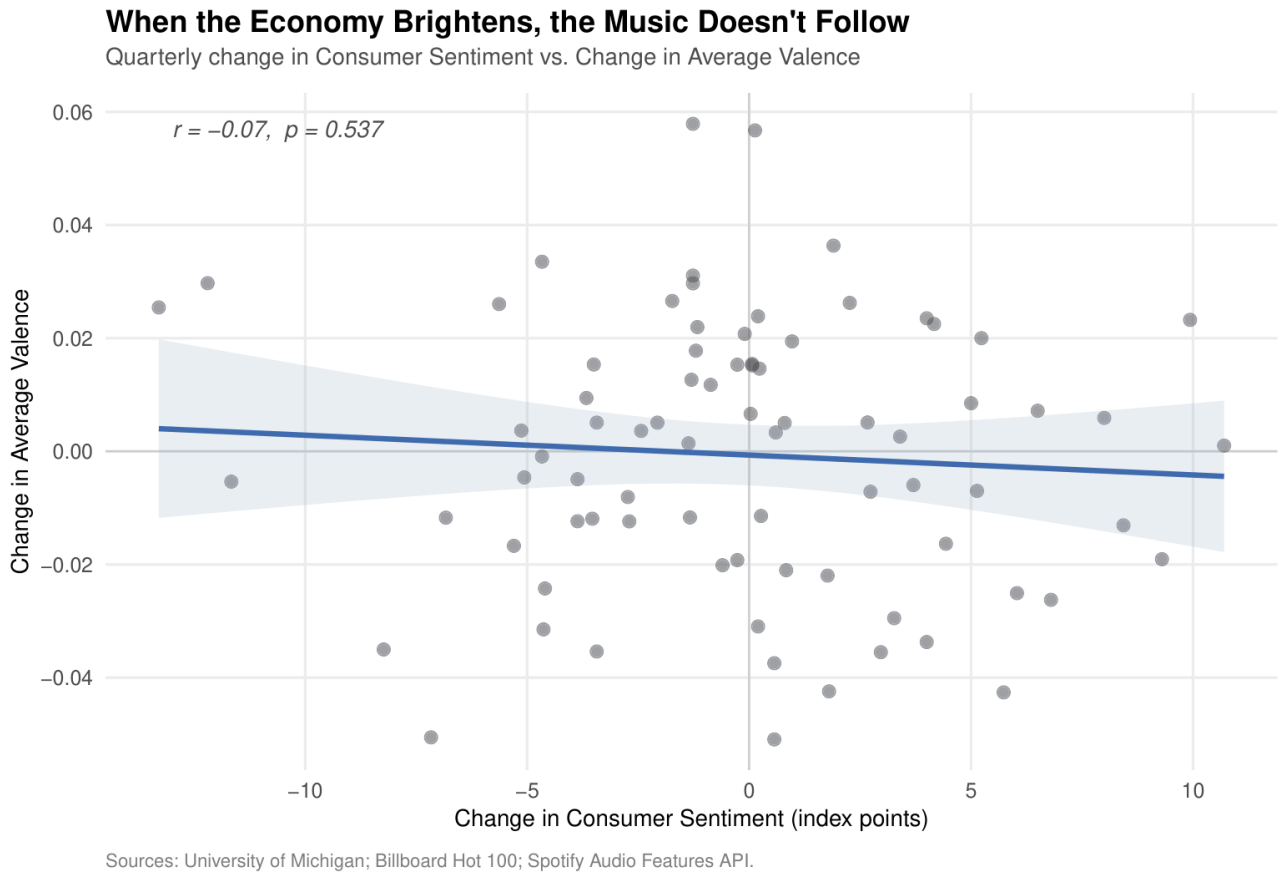


The breadth of that null result is striking. Every confidence interval in the dot plot crosses zero. The correlation coefficients range from -0.15 to +0.18, and most cluster closer to the center than the extremes. There is no clear pattern of direction: some economic indicators associate weakly positively with a given music feature, others weakly negatively, with no consistency that would survive scrutiny. The chart does not look like a weak signal buried in noise. It looks like noise.

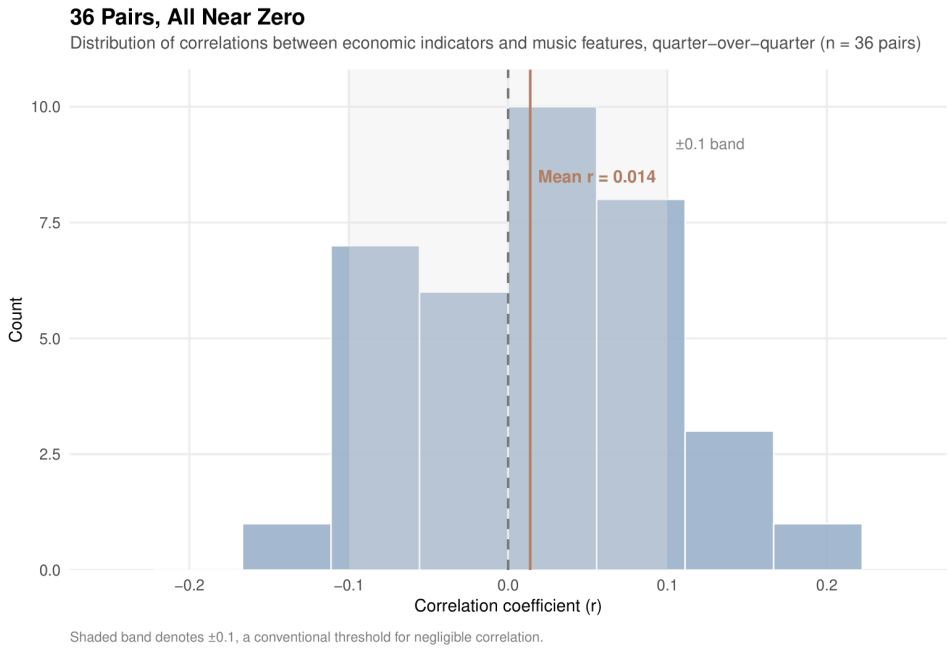
The Most Intuitive Case Fails Most Visibly

Of all possible pairings, consumer sentiment and musical valence seem to be a likely high-correlation duo. Both measure something like collective mood: one through survey responses about household finances, the other through an algorithmic score of how 'happy' or 'positive' a song sounds. Mood-congruence theory, well-established in the psychology literature, predicts that people select music that reflects or reinforces their emotional state. If aggregate economic sentiment shapes aggregate musical taste, this is where the signal should appear.

It does not. The slope of the best-fit line is not merely flat but slightly negative ($r = -0.07$, $p = 0.537$): as consumer sentiment improved quarter over quarter, the valence of chart hits nudged



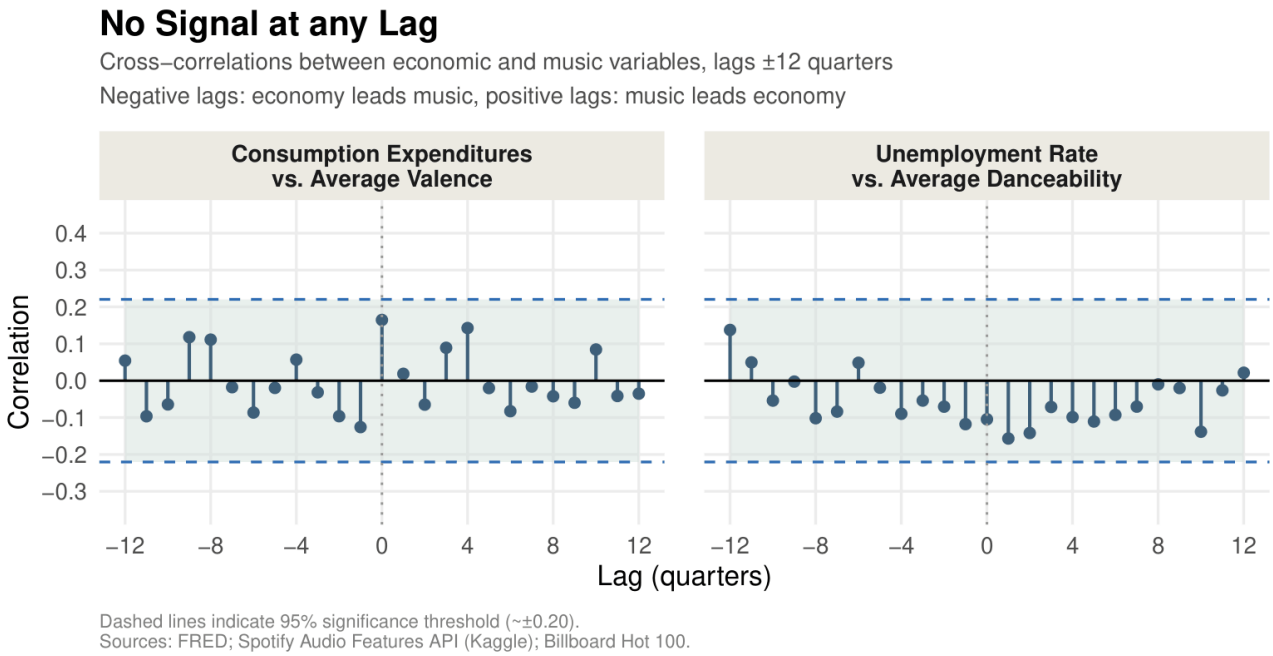
marginally downward. The effect is far too small and statistically uncertain to treat as a real finding, but it runs in the wrong direction for the conventional story of music tastes lifting with economic mood. The confidence band swallows any plausible slope.



Zooming out from any single pair confirms the picture. The distribution of all 36 correlation coefficients has a mean of just 0.014 - indistinguishable from zero. The vast majority of values fall within the ±0.1 band conventionally regarded as negligible. The distribution is not skewed toward positive correlations (as one might expect if a general 'economic mood' were leaking into musical taste), nor toward negative ones. It is simply centered on nothing.

The Silence Holds Across Time

One natural objection to the contemporaneous analysis is that cultural responses to economic conditions may take time to materialize. A recession that begins in one quarter may not register in the charts until artists have had time to write, record, and release music that reflects it, or until listeners have had time to seek it out. Cross-correlations across 12 quarters (3 years) in each direction capture relationships whether the economy moves first and the music follows, or the reverse.



The result is the same. No lag structure produces a correlation that approaches statistical significance. The bars in each panel stay within the shaded confidence band regardless of whether the economic variable leads or follows the musical one. If there is a cultural echo of economic conditions somewhere in the charts, it does not operate on a timescale this analysis can detect.

Why the Charts Might Not Care

Several explanations come to mind, none mutually exclusive. The most structural is that Billboard chart performance reflects industry gatekeeping—label decisions, radio programming, and promotional cycles—as much as it does listener preference. What reaches the top of the charts in any given quarter may say more about release schedules than about how Americans are feeling about their finances.

A second possibility is that aggregate taste masks heterogeneous individual responses. People may well reach for sadder music during recessions; but others reach for escapist anthems. Averaged across millions of listeners and dozens of chart positions, these individual responses cancel each other out, leaving the aggregate signal flat.

A third possibility is that mood-congruence theory is real, but people's emotional lives are shaped more by intimate and immediate experiences than by the broader economy. Even if listeners choose music that fits their mood, that mood may reflect relationships, work, health or personal stress more than unemployment rates or consumer sentiment.

A final, harder-to-dismiss explanation is one of timescale. The analysis runs on quarterly data over roughly 19 years. The relationship between economic conditions and musical culture may be real but slow-moving—visible across decades, as rock gave way to disco during the inflationary 1970s, or as the post-2008 era produced a notable turn toward introspective hip-hop, rather than detectable quarter by quarter. If so, this analysis would correctly find nothing, and evidence for the conventional wisdom would require only a temporal correction, not a refutation.

What the data do refute, cleanly, is the quarter-by-quarter version of the mood-ring theory: the idea that the Billboard charts track short-term economic changes with any meaningful accuracy is not supported. The economy may move, but the music, at least in the short run, does not follow.

Methodology: Monthly data were aggregated to quarterly averages and analyzed as quarter-over-quarter changes. Audio features were sourced from the Spotify API via a Billboard Hot 100 dataset on Kaggle. Economic data were sourced from FRED (Federal Reserve Bank of St. Louis). Analysis covers the period from the early 2000s through the end of 2019; data from 2020 onward were excluded to avoid distortions from the covid-19 pandemic. Significance testing used two-tailed Pearson correlation tests with Benjamini-Hochberg false discovery rate correction across all 36 pairs.

Audio features: Spotify's valence score rates songs from 0 (most negative) to 1 (most positive). Danceability, energy, and acousticness are similarly normalized algorithmic proxies; they are imperfect but consistently applied measures of musical character.

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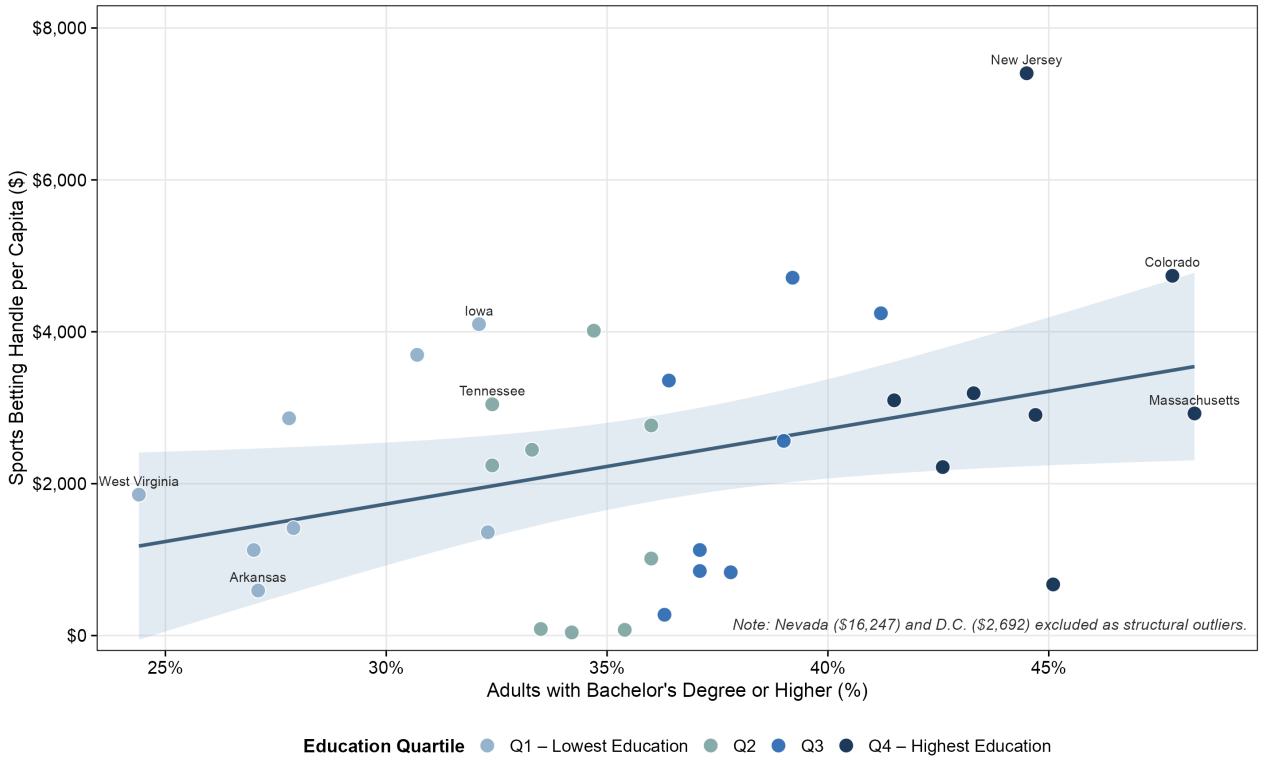
Does a State's Education Level Predict Its Sports Betting Activity?

David Smith

DOES education predict how much a state bets on sports? After analyzing handle, population, and education data across every legal market in the country, the answer is no. In May, 2018, the Supreme Court struck down the federal ban on sports betting, handing individual states the power to legalize wagering on athletic contests. What followed was rapid expansion. Thirty-five states have since opened their markets, and Americans now wager hundreds of billions of dollars a year on everything from NFL touchdowns to March Madness brackets. As the industry has expanded, natural questions have emerged about who is participating and why. One such question is whether educational attainment at the state level predicts the intensity of sports betting activity, given that education is often associated with how consumers assess risk, process information, and make financial decisions. Handle, the total dollar amount wagered by bettors, serves as the primary measure of betting activity throughout this analysis.

Figure 1: Educational Attainment vs. Sports Betting Handle per Capita (2025)

Each point is a U.S. state colored by education quartile. Shaded band shows 95% confidence interval.



Sources: American Community Survey 2024 (1-Year Estimates); U.S. Census Bureau Population Estimates; Sports Betting Handle Data

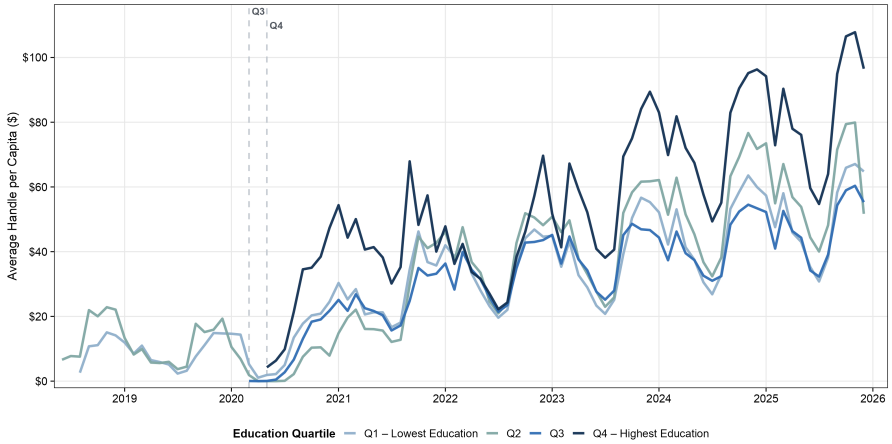
States with the lowest shares of adults holding a bachelor's degree or higher bet at similar rates to the most educated states in the country.[1] The line of best fit slopes gently upward, suggesting, if

[1]Nevada and Washington, D.C., are excluded as structural outliers. Nevada's betting market is unusually shaped by tourism and the central role of gambling in the state economy, while Washington D.C. was excluded as a structural outlier because its small, highly urbanized population make it less comparable to state-level markets.

anything, a slight positive relationship, though the confidence band is wide and the scatter is vast. States ranging from Arkansas, where fewer than 28% of adults hold degrees, to Massachusetts, where nearly half do, cluster at broadly similar levels of betting activity per person. It is also worth noting that several states, including Nebraska, Wyoming, and Mississippi, restrict sports betting to in-person wagering only, which likely suppresses their handle figures significantly relative to states with full online access. It is further worth acknowledging that educational attainment at the state level is likely correlated with median income, which makes the finding harder to interpret as this means more educated states tend to be wealthier, and wealthier residents may simply have more disposable income to wager.

Figure 2: Sports Betting Handle per Capita Over Time by Education Level

Monthly state averages grouped into quartiles by share of adults with a bachelor's degree or higher. Nevada and D.C. excluded.



Sources: American Community Survey 2024 (1-Year Estimates); U.S. Census Bureau Population Estimates; Sports Betting Handle Data

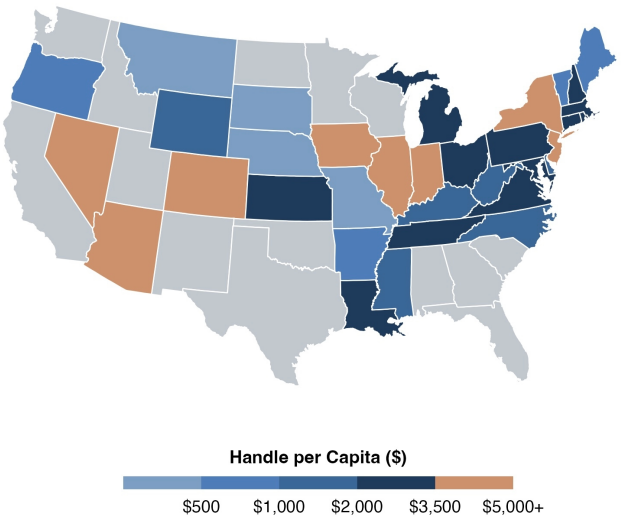
The most educated states have consistently wagered more per person, and this gap has persisted as the legal betting market has matured. In the chart, education quartiles are based on states' current bachelor's-degree attainment, while monthly averages reflect only those states with legal betting markets active at each point in time. Q3 and Q4 become more visible in 2020, when highly educated states first legalized and launched online betting. Since then, the most educated states have consistently held a higher betting rate. Again, this may be more related to wealth and differences in gambling rules between states rather than any particular appetite for gambling among the college-educated.

For states outside of the top quartile, the story is less clear. Q2 tends to trend higher than Q3 and Q1, and Q1 passed Q2 in the most recent data. The chart also reveals the seasonality of sports betting; activity tends to peak in the fall and early winter during the height of the college football and NFL seasons.

The geographic picture reinforces the conclusion that education is only weakly related to sports betting. Rather than clustering along predictable demographic lines, the highest handle per capita states are spread from coast to coast and include more-

Figure 3: Sports Betting Handle per Capita by State (2025)

Light grey states have not yet legalized sports betting. Scale capped at $5,000; Nevada ($16,247) shown at maximum color.



Sources: American Community Survey 2024 (1-Year Estimates); U.S. Census Bureau Population Estimates; Sports Betting Handle Data

educated states like New York, New Jersey, and Illinois as well as less-educated states like Iowa, Indiana, and Arizona. This suggests that other factors, like early legalization and permitted online betting, play a larger role than education in driving betting activity.

The findings carry an important implication. It would be reasonable to assume that higher levels of education would make populations more resistant to the expansion of sports betting, whether through greater financial literacy, stronger awareness of gambling's risks, or simply different leisure preferences. The data suggests otherwise. Sports betting appears to be a consumer market in which higher educational attainment offers little evidence of restraint.

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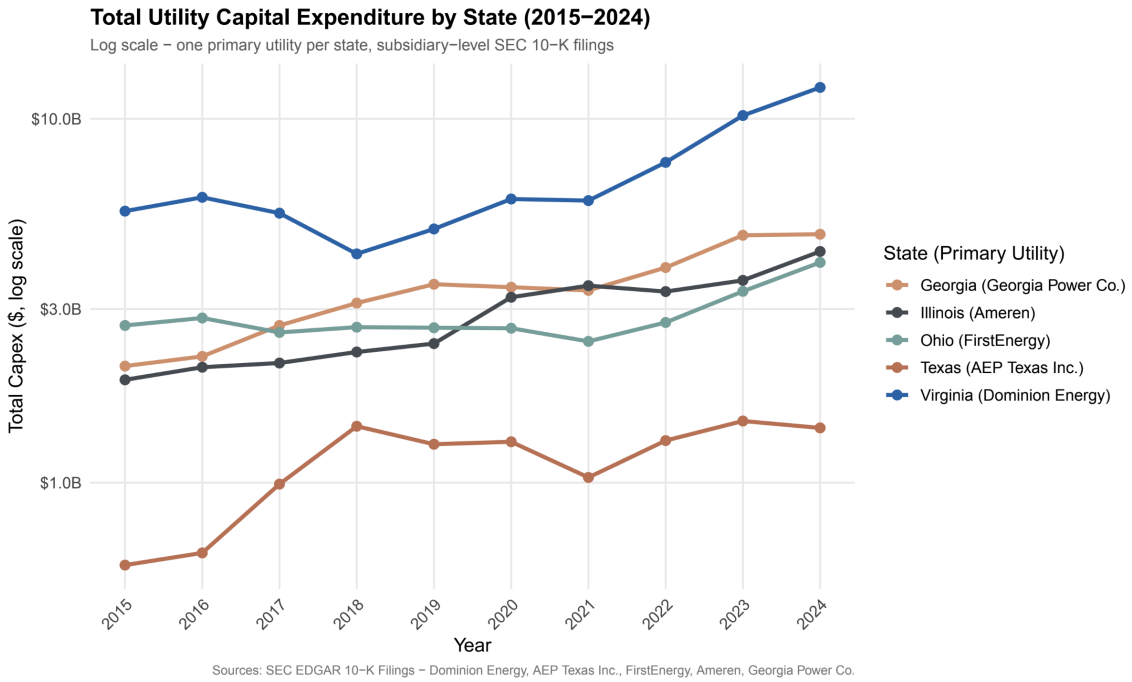
The Rising Cost of AI: How the Data Center Boom is Reshaping America's Power Grid

Matteo Aron

WHEN you think of the center of the digital world, one's mind is quickly drawn to Silicon Valley. Yet, that title arguably belongs to the third most populous county in Virginia. Loudoun County boasts the largest concentration of data centers in the world, handling roughly 75% of the world's internet traffic through what the industry has come to call "Data Center Alley". As AI services and large language models have exploded in popularity and show no signs of slowing down, the demand for data centers has skyrocketed. These data centers require an immense supply of power to function, and most of these massive billion dollar facilities draw power from the same electrical grid that powers your home. With this exponential increase in electricity demand, utility companies in data center hotspots must respond. Utility companies are investing record amounts, but how closely does that investment actually track the demand for power, and who ends up picking up the bill?

Mapping the Investment

Capital expenditures for the primary utility in 5 states with high data center concentrations grew significantly over the last decade, especially since 2021. [1]



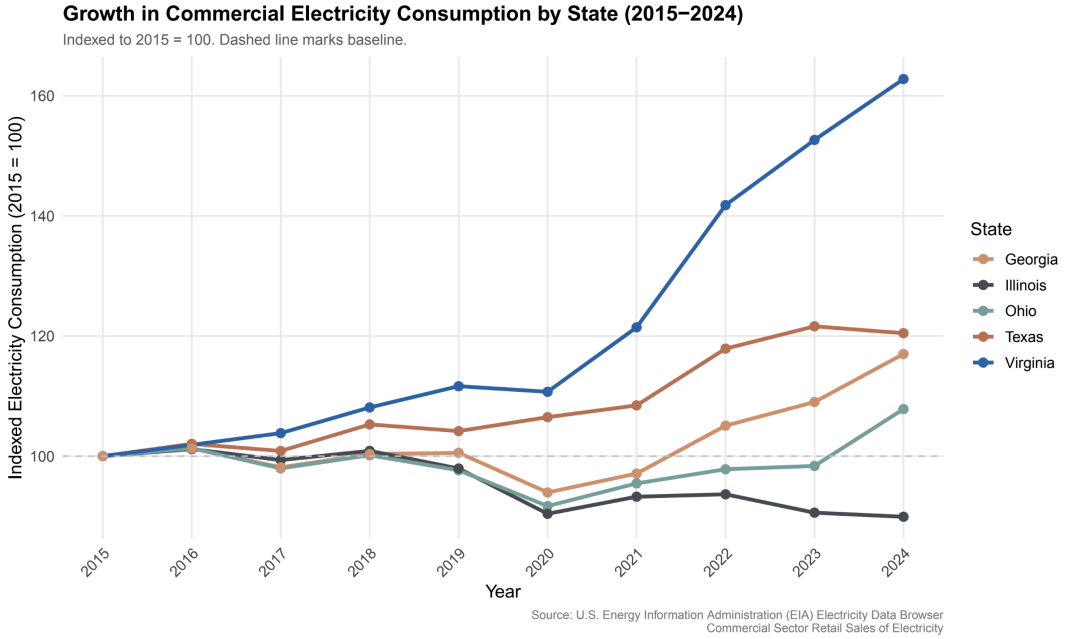
While Georgia Power Co. in Georgia, FirstEnergy in Ohio, and Ameren in Illinois maintained consistent growth from 2015 to 2024, Dominion Energy in Virginia emerges as a clear outlier. Dominion Energy's annual capital expenditures skyrocketed from $5.6 billion in 2015 to $12.2 billion in 2024; a significant 119% increase over the period. Furthermore, most of this growth occurred between

[1]The capital expenditures chart uses a logarithmic y-axis. Equal vertical distances represent equal percentage changes in capital expenditure rather than equal absolute dollar increases.

2020 and 2024, with spending more than doubling from roughly $6 billion to $12.2 billion in 2024. This trajectory is likely reflective of Northern Virginia's tax exemptions that grant tax relief on data center equipment. These incentives have spurred rapid construction as data center operators and hyperscalers flocked to the region to capitalize on these exemptions.

The Demand Side

Commercial electricity consumption has also increased significantly, with Virginia dominating the rest of the group, seeing close to 60% growth in commercial electricity demand over the period. Notably, the period with the most growth occurred between 2020 and 2024. Texas, Georgia, and Ohio see a similar, albeit less dramatic, trend, while consumption in Illinois has actually declined.



Boom or Bubble?

Over the last several years, it appears that growth in utility capital expenditures has far outpaced growth in actual electricity consumption. Across these five states and during the 2015-2024 time period, capital expenditures grew by an average of 112.3%, while commercial electricity demand grew by an average of only 19.6%. This suggests that utility companies are investing far ahead of what current demand reflects, essentially betting that AI continues to find a larger foothold in society. If the AI boom continues to grow, these investments will be justified. If the AI boom cools off, utility companies are left with billions of stranded assets. This bet carries real stakes, some of which are already being shifted onto the general public. If these assets aren't met with the expected demand, utilities might be forced to raise rates on the average consumer to ensure continued operations. This trend has already surfaced in Virginia, as Dominion Energy has already implemented rate hikes, forcing the average consumer to pay an additional $11.24 per month to cover Dominion's bet on AI growth [12]. It seems that AI is here to stay, and for the average electricity consumer, the true cost of AI is just beginning to show up on their monthly statements.

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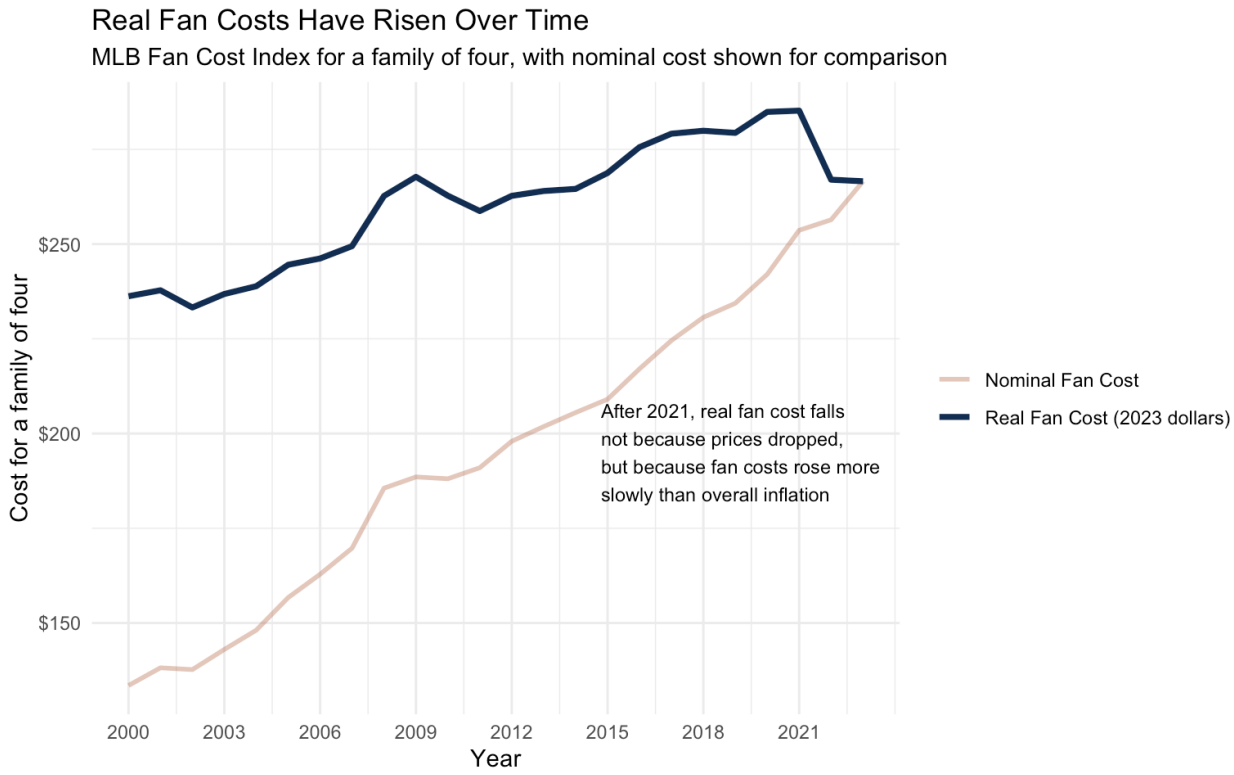
Baseball's Rising Costs and Uneven Payrolls

Ishaan Solanki

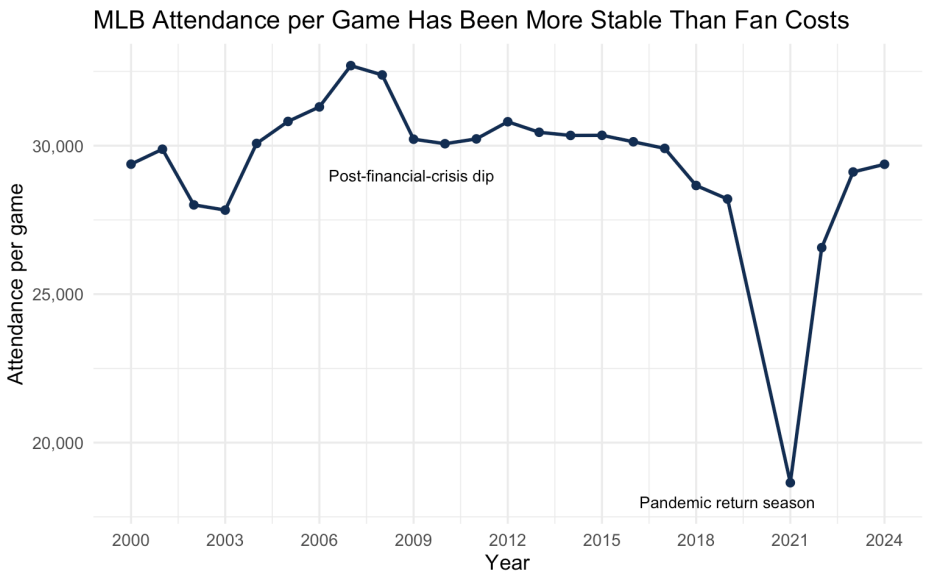
GOING to a Major League Baseball game costs much more than it did a generation ago, even after adjusting for inflation. But higher prices do not automatically drive fans away, especially in a market where teams set prices in response to expected demand. Indeed, attendance has not collapsed as tickets have become less affordable; league-wide crowds mostly held in a band of roughly 27,000 to 33,000 per game, dipping most sharply during external shocks like the 2008 financial crisis and the first post-Covid season rather than when fan costs rose fastest. What might matter more to fans is whether they think the product on the field justifies the bill: in Cleveland, attendance fell more sharply when the franchise looked less committed to winning.

Baseball Got More Expensive, But Attendance Stayed Steady

The Fan Cost Index estimates what a family of four would spend on a standard trip to the ballpark, including tickets and common game-day purchases. It is meant to capture the cost of the outing as a whole, not just the price of admission. Real fan costs have increased steadily since 2000; the slight dip recently is primarily a result of high national inflation.



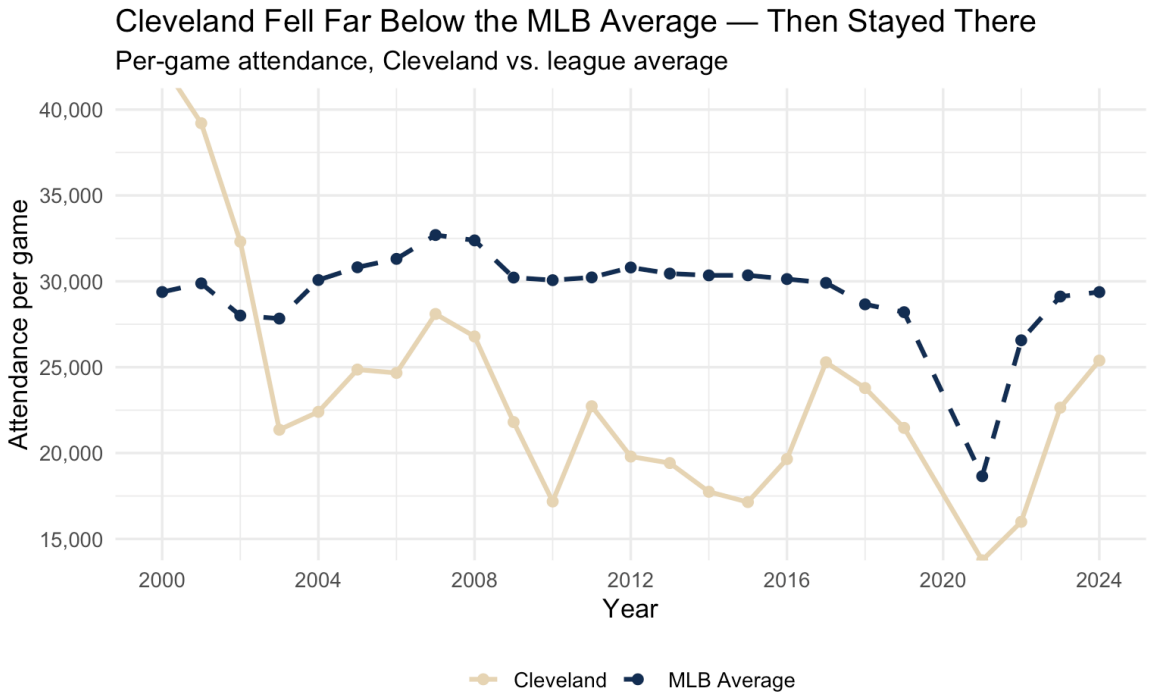
If higher prices were the main force shaping fan behavior, attendance per game should have drifted downward as the cost of attending rose. Attendance data do not show that relationship. Fan costs move steadily upward, but attendance stays within a relatively narrow band for most of the period, with its sharpest declines occurring after the 2008 financial crisis and during the pandemic-era return season. Baseball became less affordable, but attendance did not behave as though price alone was driving the market.



Factors other than price are absorbing the pressure. This dataset cannot fully tell us whether attendance is being sustained by higher-income fans, by promotions and discounts, or by the continued appeal of the live experience.

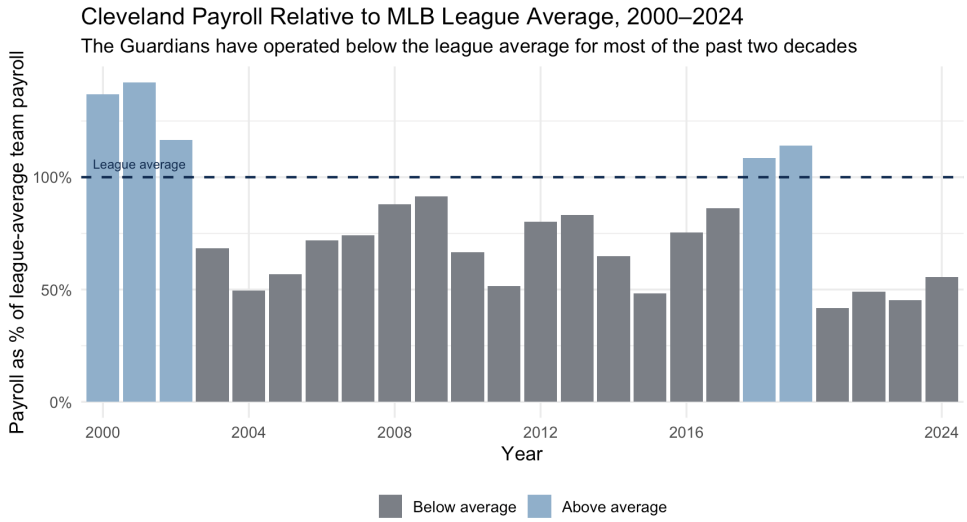
Cleveland Shows What National Averages Miss

To better understand potential drivers of attendance, it helps to look at one franchise up close. Cleveland started the period drawing crowds above the league average and ended it well below, a reversal that the national numbers entirely obscure. In the early 2000s, the team drew crowds at or above the MLB average. However, attendance dropped sharply and has remained well below the league benchmark since. That divergence points to something specific to the franchise, not the sport.



Payroll Helps Explain Why Cleveland Drifted Away

Fans may be more willing to absorb higher prices when team ownership appears equally willing to invest in winning. The fall in Cleveland's attendance in the early 2000s coincided with a significant drop in payroll, suggesting that local fan response may have been tied less to the general cost of going to a game than to what the franchise seemed willing to invest towards putting a competitive team on the field.



At the start of the sample, when Cleveland spent around or above the league average, attendance was strongest. Once the franchise settled well below that benchmark, attendance settled into a much lower range too. From 2018 to 2024, however, Guardians attendance remained broadly in line with league trends even as team payroll fell from slightly above the league average to roughly 50% below it. Over this period, the team has won three division titles and two playoff series, which could explain why attendance remained stable. These observations do not prove any causal relationship between payroll and attendance, but it seems plausible that fans may respond more to the franchise's level of demonstrated financial commitment than to the overall rise in MLB fan costs.

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Part II
Economic Inquiries

Evaluating Medical Residency Preferences Under Abortion Laws

Anika Kaur, Elizabeth Krotine

In *Dobbs v. Jackson Women's Health Organization (2022)*, the Supreme Court ruled that the US does not guarantee a right to abortion, handing power back to the states. Their decision overturned the 49 year precedent established in *Roe v. Wade*. As of 2026, 21 states have enacted abortion bans or significant restrictions relative to the Roe v. Wade baseline [7].

The level of abortion care now varies significantly depending on what state a person resides in, which means future medical professionals may decide where to practice based on whether they will be able to perform an abortion. Under Roe v. Wade, abortions were protected until the fetus reached the point of viability, around 22-23 weeks of pregnancy. The Dobbs decision has allowed states to pass stronger abortion laws, which has reduced access to reproductive care, decreased abortion training, and increased the risk of pregnancy complications. Considering these drastic changes in health-related outcomes, it is natural to ask how this might affect the labor market for medical professionals across the US. Experienced and established medical professionals are likely to be relatively inelastic to changes in abortion care, so investigating this effect through medical students' choices for residency positions may provide insight into how abortion policy affects medical training decisions and the future availability of reproductive healthcare providers.

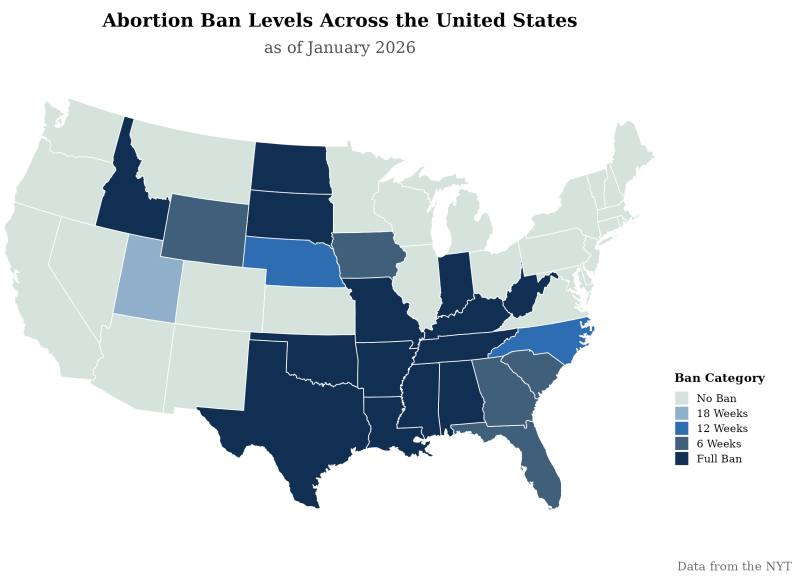

Figure 1: Abortion restriction levels by state as of January 2026. States are shaded based on severity of abortion, from gestational limits (6 week, 12 week, etc.) to a full ban.

Residents' choices to practice in certain states due to abortion access may cause a lack of highly skilled medical professionals in these areas. For OBGYN practitioners, these are called maternity care deserts: areas with no specialized doctors or medical centers providing maternity care [6]. Before the abortion rights were handed to the states, these deserts existed in 35 percent of U.S. counties [6]. Resident's decisions may have lasting effects on access to reproductive healthcare. Driving doctors away now because of abortion access may lead to medical deserts where people may not be able to get the expert care they need.

Literature Review

Recent studies have begun assessing impacts of state abortion laws post-Dobbs. Orgera and Grover (2024) perform an exploratory data analysis on the effects of the Dobbs decision on the U.S. MD

seniors and their application to medical residencies. The authors found a small increase in OBGYN applicants and overall, a possible reduction in residency applicants in states with abortion bans as relative to states with lesser bans or no bans at all. Similarly, Hammoud et al. (2024) assessed the changes in where OBGYN residents applied based on abortion restrictions in states after the Dobbs decision. Their study found that applicants in the 2023 match cycle remained stable overall, but there was a possible decrease in the number of applicants in states with abortion bans.

There has been empirical work done on this topic. Woodcock et al. (2023) use a mixed-methods survey to analyze if graduating OBGYN residents are sensitive to state abortion restrictions after the Dobbs ruling. The authors estimated the likelihood of changing future practice plans against various relevant explanatory variables. They found that OBGYN residents who intended to practice in abortion-restrictive states before the Dobbs decisions, were 8.52 times more likely to change their state of practice. Ganguly et al. (2026) investigates if the Dobbs decision caused a decline in residency applications to abortion-restricted states, and if this varied by applicant gender and specialty. Through their analysis, they found that there was a difference in applications from both genders in states with abortion restrictions compared to those with no restrictions.

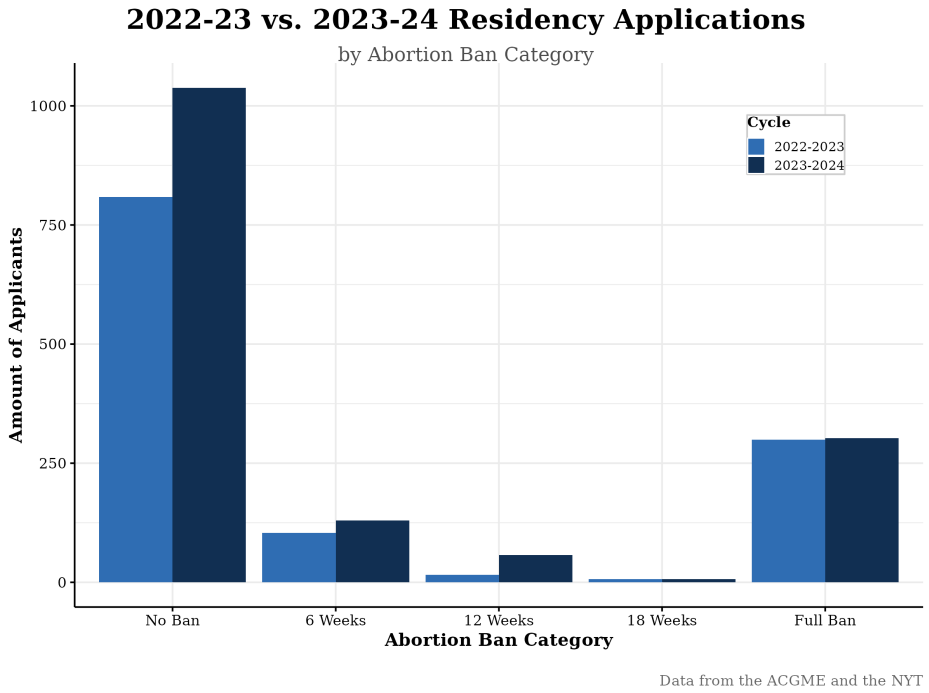

Figure 2: States are grouped based on type of abortion ban. The number of medical residency applicants in the 2022-2023 and 2023-2024 application cycles.

Weeks into Pregnancy	Category	Level of Treatment
24	No Bans	0
18	18 Weeks	0.25
12	12 Weeks	0.5
6	6 Weeks	0.75
0	Full Ban	1

Table 1: The level of abortion ban corresponding to weeks into pregnancy and the level of treatment used in our analysis.

Conclusion

Ultimately, there is no definite answer on if graduating medical students–specifically OBGYN students–going into residency are changing where they apply based on abortion laws across states. In Figure 2, we do see an increase in application amounts for no ban states; however, there are little differences in the amounts of applications for other restriction levels.

The choices of our future medical professionals are integral to a community's health now and in the long term. This change in residency applications is worth exploring in order to ensure adequate medical care in all areas of the United States.

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Geopolitical Realignment & Trade Reorientation in the Sahel States

Elizabeth Kitakule, Calais Michaelsson

CURRENT political movements in West Africa have been underpinned by the Western media's obsequious analysis of emerging leaders to a caricatural extent. Images of Ibrahim Traoré in a persistent red beret, marked by singular out-of-context quotations, mask a larger movement within the region. In the past five years, military takeovers have occurred in a domino effect, with similar motivations, goals, and adversaries.

Leaders in Mali, Niger, and Burkina Faso have laid the foundation for emancipating their local economies from Western support. This marks a pivotal turning point in post-colonial trade dynamics. The states are landlocked countries in West Africa, located in the Sahel region. This zone transitions from the Sahara Desert in the north to the tropical savanna in the south. Mali relies on gold mining as its economic driver, with significant deposits of lithium, uranium, iron ore, and phosphates. Niger's economy is primarily driven by its large uranium deposits. It is ranked among the world's top producers. Alongside their uranium reserves are significant oil, coal, gold, and various mineral deposits. Burkina Faso is one of Africa's top gold producers, with mining driving the local economy. The country also holds substantial deposits of zinc, manganese, phosphate, limestone, nickel, lithium, and copper. All three states are resource-rich and strategically advantageous in the global race to enhance local mass production in Western states. The presence of these resources, combined with the unmatched potential of local manufacturing and supply chain processes within the West African states, is a testament to the parasitic stifling inflicted by their relations with Western entities. For Malians, Nigeriens and Burkinabes, a coup d'état is a remedy for an infection spread through infrastructure, trade, and geopolitical alignment.

In the second-largest West African country, primarily characterized by its harsh desert or semi-desert terrain, Mali has become accustomed to the coerced exchange of power. Dating back to the country's infancy in 1968, the state has witnessed a tumultuous political history, including five major military coups. However, the "coup within a coup" led by Vice President Assimi Goïta is of particular significance not only within the state but in its echoed resonance in the region. The Coup d'état in Mali was not the result of a sudden inflammation of anti-government sentiment. Rather, it was the result of long-term over-exhaustion of the population. Rising insecurity, alleged corruption, and a failing economy left the average patriot with no choice but to protest. Decisions made by the government at this point left a minority of the population and external entities as true beneficiaries of state resources. The anti-government sentiment seeped into the crevices of the nation over time and left only room for the celebration of the ousting of the prominent leaders after a government reshuffle. Mali's then-President, Bah Ndaw, and Prime Minister (PM) Moctar Ouane were detained by mutinous soldiers loyal to Goïta and driven to a military camp near the capital following their announcement of the reshuffle. Their detention was met with reprimands from the African Union, the Economic Community of West African States (ECOWAS), the European Union (EU), and the United States. External bodies called for the release of Mali's top politicians without preconditions. At this point, it is important to reiterate that President Ndaw and PM Ouane came to power following a coup d'état in early September 2020. Their ousting occurred the following year in May 2021—the "coup within the coup."

Amid strenuous political instability, the region faces a security risk that calls for its dependence on external military units. A common adversary of the three nations in question is the uprising and spread of jihadist groups across their shared borders. Even though Mali was forcibly exchanged through multiple hands, all agreed that the presence of the French military was necessary to keep the spread of

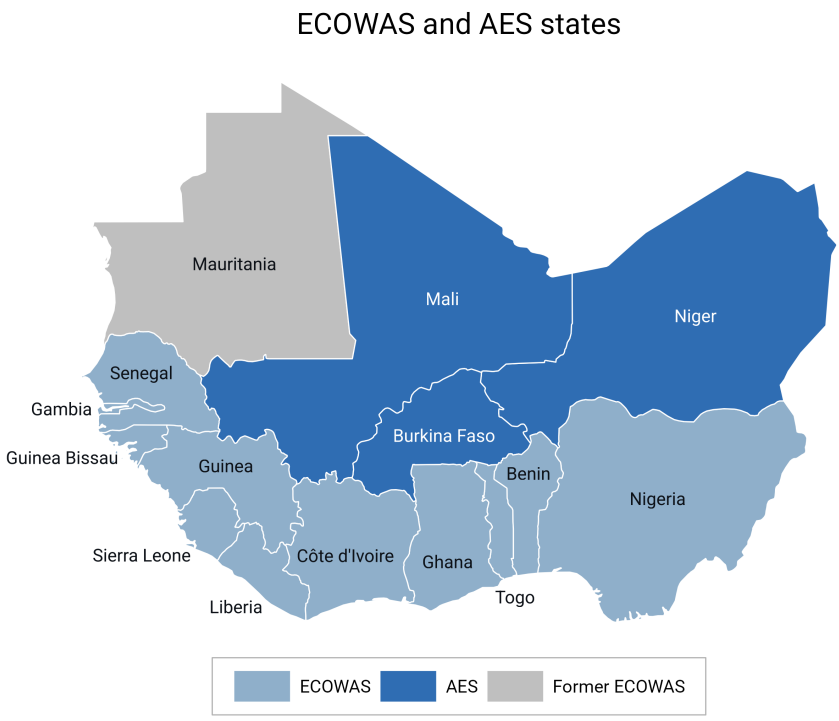

Figure 1: West Africa's shifting regional blocs: the Economic Community of West African Sates (ECOWAS) and the breakaway Alliance of Sahel States (AES), comprising Mali, Burkina Faso, and Niger.

these groups at bay. Only recently have leaders and opposition started to explicitly speak out against the French presence in the nation, going so far as to admonish their continuing interference in the state. Paul Melly, BBC's West Africa Analyst, noted Imam Dicko (a highly recognized opposition figure to previous Malian governments) accusation of France's shift to recolonize Mali, a move that went beyond its stated intentions of military intervention in January 2013. Here, in the accusation, lies the backbone of the anti-government and subsequent resistance to existing regional economic common groups, which persisted not only among the self-appointed leaders but also among the citizens of the nations they claim to be emancipating.

Directly to the East of Mali sits Niger. The country is characterized by its primarily rocky desert, the Ténéré desert, and the Aïr Mountains, in the north, and arid plains in the South. Like Mali, the first coup occurred in the newly independent country's infancy in 1974. In July 2023, General Abdourahmane Tchiani ousted President Mohamed Bazoum and formed the Conseil National pour la Sauvegarde de la Patrie (CNSP). He then promptly suspended the constitution and dissolved state institutions. Following the recent seizure of power, notes of sombreness were enveloped with jubilations as the locals rode around and chanted, "Down with Macron!" "Down with France!" The same themes of exploitation ring amongst the ousted government officials as new self-appointed leaders symbolize emancipation from Western influence and colonial entity interference. Acts of salvation and timely interventions are the choice descriptors General Abdou Assoumane Harona, Governor of Niamey, used when he sat down with Channel 4 News following the insertion of the new government. "There were no elections, but it was legitimate because it is what the people want," he affirms.

What drove military officials like General Harona to absolute definitions of legitimacy? Previous leaders exploited the population for the benefit of elites and Western interests. Poor living conditions and corruption from self-interested governance fueled resentment against France, the former colonial

ruler, and its influence over elites. This discontent shapes the people's vision of legitimacy. At the same time, Jihadist groups expanded their foothold in the region, and security deteriorated. Security, meant to be preserved, justified the previous presence of French military units. Thus, French actors raise the question, "if not us then who?" Who will intervene as Jihadist groups gain strength in the Sahelian region? Pan-African Activist Kemi-Seba, addressing the coups on Channel 4 News, said: "Russia can help us, Iran can help us, Cuba can help us, Turkey can help us,' as long as 'military cooperation does not equate to colonization.' Kemi-Seba reflects a shared sentiment during the government's transition. There is an understanding that these states cannot stand alone without risking failure. Outside actors are vital, but only on the terms of preserved autonomy. French and local entities acting in their name are no longer welcome in the Sahelian states.

All in all, Burkina Faso's takeover was not unique. The government's upheaval echoed a regional movement. This overview follows the context of neighboring states. Burkina Faso lies to the southeast of Mali and to the southwest of Niger, and is dominated by a gently undulating savanna plateau. The terrain is marked by sparse and dry landscapes in the north, which transition to more forested savannas in the south, and rugged sandstone cliffs in the southwest. In 2022, the country saw two coups, the first, in January, brought Lt. Col. Paul-Henri Sandaogo Damiba to power. The second, in September, saw Captain Ibrahim Traoré overthrow Damiba. Since Traoré has thwarted multiple assassination and coup attempts. Despite promises of security, Islamist groups continue to worsen conditions as they cross borders. Reports of massacres, civilian targeting, and violence against Fulani persist. At the same time, Traoré's junta cut security ties with France and moved toward Russia, joining anti-French sentiment unifying the narrative of the region.

The anti-French sentiment can be decomposed into a negative disposition towards French influence. Influence, a umbrella term for the intangible hold on large demographics, is the name of the game. In Niger, Mali, and Burkina Faso, influence is tangible, manifesting not only in military aid, but also in corporate presence and trade relations. The adjacency of a nation to the West has seemingly been taken as an indicator of success, yet it has continued to stifle growth. One cannot help but question and attempt to predict the efficacy of the military governments in the region as they isolate themselves from the AU, ECOWAS, and Western influence to form their own alliance, the Alliance of the Sahel States.

Quantifying influence is an arduous task; quantifying power and control first is, arguably, simpler. The starting point is the historical framework of "Françafrique," which is the system through which France maintained economic and political leverage over its former colonies' independence. Versions of this control exist across the continent, reflecting the varying colonial entities that once existed. Central to this system is the CFA Franc currency zone, used by 14 African countries and pegged to the Euro, which requires member states to deposit a significant portion of their foreign reserves with the French Treasury. In blunt terms, it is a siphoning system designed to maintain France's economic power while stifling growth and preserving dependence. Ondriaš et al. argue that this arrangement constrains monetary sovereignty and limits domestic investment capacity, reinforcing structural dependence [4]. Empirical evidence developed the argument further. [3] highlights that trade balances in West African Economic and Monetary Union (WAEMU) countries are persistently negative and improve primarily through exchange rate adjustments, a mechanism largely unavailable under the fixed CFA system.

As previously alluded to, French economic domination has been sustained through corporate control in key sectors. Major firms such as TotalEnergies, Orano, and the Bolloré Group have historically controlled significant portions of the region's extractive industries and logistics infrastructure [4]. Regarding Niger's uranium deposits, mining accounts for roughly 70% of exports while contributing only a small share of GDP. This disproportionate distribution illustrates the limited domestic benefits of resource extraction under this system–a common occurrence within the immediate region. Exploitation has become one and the same with each state's daily agenda and inevitably contributed to growing

political and economic discontent. If the person in charge is not looking out for the best interest of their fellow countrymen and rather entities with a history of oppression and suppression within, to whom do you turn? If the foundations of your country have exploitation deeply embedded, what do you do?

Start anew–at least some version of it. The AES is Mali, Niger, and Burkina Faso's attempt at this version. Their regional realignment and decoupling from France align with broader theoretical insights into post-colonial trade dynamics. [1] demonstrate that while independence often has limited immediate effects, trade between former colonies and their colonizers declines significantly over time, with reductions of up to 65% after several decades. Importantly, they find that "hostile separations" produce more rapid and pronounced declines than gradual or negotiated transitions. The AES case closely fits this pattern: military coups have been accompanied by the expulsion of French forces, the cancellation of long-standing corporate concessions, and the introduction of new trade barriers. These actions accelerate the erosion of what Head et al. describe as "trading capital"—the networks, institutions, and relationships that sustain elevated levels of bilateral trade—leading to a faster realignment of trade flows.

France's economic control in the region had been slowly but steadily declining prior to the coups, as evidenced by empirical data. However, the decline has accelerated significantly in their aftermath. [4] document a steady reduction in France's share of both imports and exports across former colonies between 1995 and 2022. In Mali, France's share of imports fell from over a quarter to just over 6%, while its role as an export destination diminished to near insignificance. Similar trends are observed in Burkina Faso and Togo, a former coastal French colony in West Africa south of Burkina Faso, indicating a broader regional pattern of disengagement. Post-coup developments have intensified this trajectory. In Niger, the revocation of Orano's uranium concession—covering one of the world's largest uranium reserves—represents a major assertion of economic sovereignty with significant implications for both Niger and France, given the latter's reliance on imported uranium. At the same time, the introduction of an AES import levy on goods from ECOWAS states and the divestment of French-controlled logistics assets signal a deliberate dismantling of the institutional and infrastructural foundations of French economic influence.

Rather than creating a vacuum, this disengagement has been accompanied by a reorientation toward alternative partners. Russia has expanded its presence in the region primarily through security cooperation, while China has deepened its role through infrastructure investment and trade relationships that emphasize non-interference [2]. These shifts reflect a broader strategic recalibration by AES states, aimed at diversifying their economic relationships and reducing dependence on Western actors. At the same time, discussions around exiting the CFA Franc system and establishing a new regional currency highlight a growing emphasis on monetary sovereignty. However, historical precedents suggest that such transitions carry significant risks, and the success of any new currency regime will depend on careful macroeconomic management, particularly given the sensitivity of trade balances to exchange rate dynamics [3].

Despite the growing body of literature on Françafrique and the recent geopolitical shifts in the Sahel, important gaps remain. Much of existing research relies on data that predate the most recent coups and lack a detailed analysis of trade flows at the commodity level. Additionally, while theoretical frameworks such as those developed by [1] provide valuable insights into long-term patterns of trade erosion, they do not fully capture the dynamics of rapid, coup-driven separations. It is vital to address these gaps by examining bilateral trade flows between France and the AES states during the 2020–2025 period, with a particular focus on the mechanisms driving economic realignment. By integrating quantitative trade data with analysis of institutional changes—including currency arrangements, contract revocations, and regional realignments—the exploration and assessment aim to provide a more precise account of both the pace and processes underlying the decline of French

economic influence in the Sahel.

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Evidence On Green Bonds & Greenwashing

Noah Leibowitz, Siya Motwani

SUSTAINABLE investing was supposed to reshape finance. Lately, it has shown signs of slowing down. In 2025, 91 ESG-focused funds in the U.S. were shut down, while only nine new ones were launched. Roughly $21 billion has also been withdrawn from sustainable funds as reported by Morningstar. These trends raise a larger question: if capital is moving away from ESG investments, what does that mean for funding the transition to clean energy?

Environmental, Social, Governance (ESG) investing is a form of sustainable finance and has become increasingly popular. Supporters of sustainable financing argue that ESG-related investing helps allocate funding towards renewable energy and cleaner infrastructure to promote long-term environmental goals. Essentially, instead of funding a corporation's profits, these funds go towards promoting sustainable outcomes. Critics, however, argue that investment decisions should be made solely on the basis of improving financial returns rather than environmental objectives. This debate has become increasingly popular in modern finance as governments and corporations search for ways to expedite the transition to clean energy alternatives and to meet sustainability goals.

That tension is now playing out in the financing of renewable energy. Renewable energy projects, such as solar wind farms have high upfront costs which pose a barrier to renewable investments. Simultaneously, ESG spending has become increasingly politicized, leaving uncertainty about how these projects will be financed in the future. Opponents argue that owners should prioritize shareholder value and that environmental investment takes away from investment within the firm itself.

A clear example of this backlash can be seen in recent legislation. In 2023, Governor of Florida, Ron DeSantis, signed HB 3 into law, restricting the use of ESG factors in investment decisions. Under the law, fund managers are required to only focus on "pecuniary factors" meaning that investments should be solely based on financial impact. Similar anti-ESG legislation has appeared in other states, signalling a shift in how sustainable finance is being viewed in the United States.

In this context, green bonds have emerged as a possible solution. Green bonds are a class of sustainable debt instruments that provide capital necessary to fund ESG initiatives. Since 2013, they have been issued at both state and municipal level, as well as by corporations. These states have used green bonds as a debt-relief mechanism while also ensuring that sustainable goals are met. Such sustainable goals could include carbon emission reductions and the expansion of renewable energy infrastructure.

The role of ESG investing remains important in the United States, particularly in light of the Trump Administration's cuts to the Department of Energy and other environmental departments. At the same time, private-sector financing has been seen as a potential way to support environmental initiatives. As a result, the ESG debate is not just about the impact on firms, but also about how the U.S. will finance its transition to a more sustainable economy. Green bonds have become a central part of that discussion, raising further questions about how effectively financial markets can support long-term environmental goals.

Effectiveness of Green Bonds

So, do these investments actually translate into meaningful environmental outcomes? One concern that has emerged in this discussion is greenwashing, where financial instruments are marketed as "green" without corresponding investment in environmentally beneficial projects.

Part of the issue lies in the incentives within green bond markets. These bonds often carry lower yields than conventional bonds, meaning investors accept a "greenium," or lower financial returns,

in exchange for expected environmental benefits. While this reflects strong demand for sustainable investments, it also raises the possibility that issuers may do just enough to qualify as "green" in order to access cheaper financing.

At the same time, the financial side of the story is less straightforward. Firms issuing green bonds do not appear to suffer financially and may even perform better than those issuing conventional bonds. This complicates the narrative, suggesting that participation in sustainable finance does not necessarily come at a cost to firms.

The environmental impact, however, is less clear. Some evidence suggests that green bonds can ease financial constraints and support investment in sustainable projects. Other research points out that these outcomes depend heavily on factors such as transparency and third-party certification, where independent organizations verify that funds are actually directed toward environmental projects.

Differences also emerge depending on who issues the bonds. Corporate green bonds may increase spending on research and development, but this does not always translate into meaningful environmental progress. In some cases, firms increase the number of green patent applications without improving their quality, raising concerns that these activities reflect more visible signals of sustainability rather than substantive change. Public-sector bonds, by contrast, are more often tied to infrastructure and policy-driven environmental goals, which may create a clearer link between financing and measurable outcomes. Evidence from the United States suggests that municipal green bonds can contribute to lower carbon emissions, although these effects vary across regions and economic conditions.

Taken together, the evidence suggests a more complicated picture than the rapid growth of ESG investing might imply. While green bonds have the potential to channel capital toward sustainable projects, their impact is neither uniform nor guaranteed. As ESG investing faces growing political and financial headwinds, the question is not only whether these instruments can attract capital, but whether they can deliver the environmental outcomes they promise.

Conclusion

With the rise of anti-ESG legislation, the future of sustainable financing in the U.S. remains uncertain. In the last two decades, ESG financing has helped aid in the transition toward renewable energy alternatives, and has been key in allowing the U.S. to move closer toward its sustainability goals. However, mechanisms that provide capital to fund ESG initiatives in the U.S., such as green bonds, have mixed environmental outcomes. Critics report claims of greenwashing, where an investment is labeled as "green," but the issuer does not sufficiently allocate the funds toward environmental projects as promised. With these mixed effects in mind, the bigger question then becomes: is ESG legislation worth saving?

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