

Consumer Morsel

Feeling the heat

18 April 2024

Key takeaways

- Higher average temperatures put over half of US counties at risk for increasing energy consumption costs and associated expenses such as utility payments. As of March, the average total utility payments per customer was nearly \$300 per Bank of America internal data, a nearly one-quarter rise in cost since 2019.
- Many households are impacted by climate hazards, but certain households are particularly susceptible to experiencing financial strain. Lower-income customers' average utility payments are 38% higher in March than the 2019 average, and people in the Northeast and West are facing increasing financial pressure.
- Rising temperatures are also taking a toll on workers, especially those working outdoors in heat-exposed industries. Bank of America internal data finds, during warmer months, heat-exposed sectors have a lower inflow-to-outflow ratio, which we view as a proxy for profits. Long-term, high heat could reduce available jobs in certain sectors, amplifying economic costs.

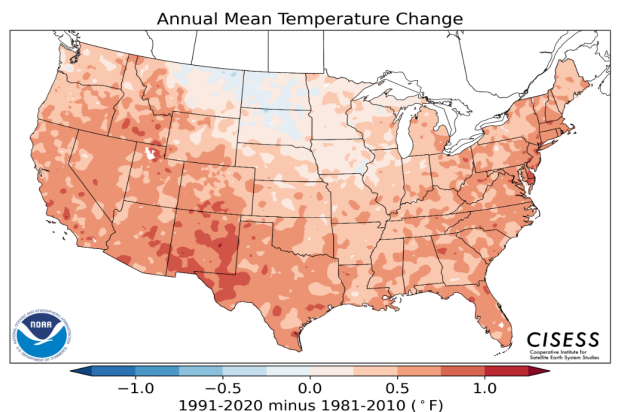
High heat exposure leads to high household expenditure

According to the US Department of Treasury’s most recent impact report, over half of U.S. counties – home to millions of Americans – face heightened future exposure to at least one of the three climate hazards: flooding, wildfire, or extreme heat. And per the Bank of America 2023 Task Force on Climate-related Financial Disclosures (TCFD) Report, heat is the number one killer among extreme weather events in the U.S. Exhibit 1 highlights that most of the U.S. was warmer from 1991–2020 than the previous twenty year period, and the length of heat waves – a period of abnormally hot weather generally lasting more than two days per the National Weather Service – has increased significantly in recent years (Exhibit 2).

As climate events and conditions continue to grow in frequency and intensity, households will likely face additional expenditures. For example, households exposed to heat waves and higher average temperatures are more likely to use air conditioning, which could increase their energy consumption and associated expenses given that 88% of U.S. households use air conditioning per the most recent Residential Energy Consumption Survey (Energy Information Administration).

Exhibit 1: Most of the U.S. was warmer compared to the previously measured 20 years

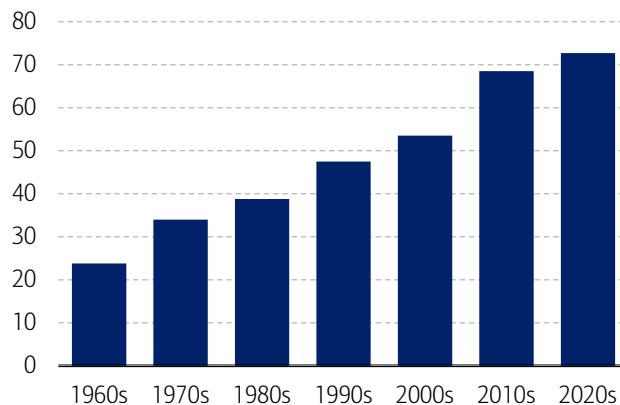
Annual mean temperature change from 1991-2020 to 1981-2010



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Exhibit 2: The average length of heat waves has increased significantly in recent years

Average length of annual heat wave season (days)



Source: Environmental Protection Agency, Joint Economic Committee

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To get a sense of how this is impacting the typical consumer, we use internal aggregated and anonymized Bank of America customer data to track payments for aggregate utilities. Note that in our data, utilities may include water, electricity, gas, and/or

sanitary management. We find that the average total utility payments per customer was nearly \$300 in March, an approximate 23% rise since March 2019 on a 3-month rolling basis.

Lower-income customers and households in the West are sweating the most

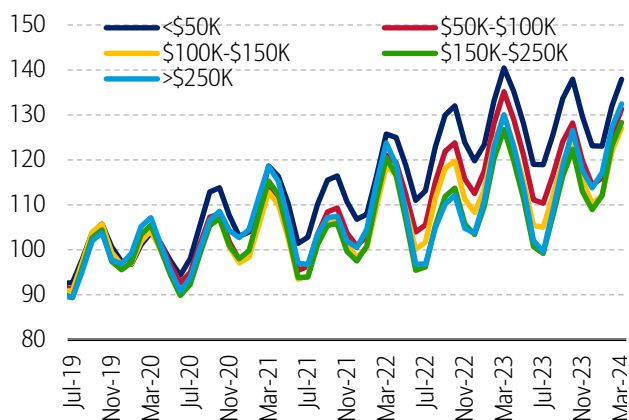
Almost 1-in-4 people in the United States have low resilience to extreme heat exposure, according to US Census Bureau data. While climate hazards impose financial challenges for households across income and wealth spectrums, financial burdens are not distributed evenly.

In fact, using the median geographic household income in US Census Bureau data and thermal satellite images from NASA and the US Geological Survey, the urban heat island effect (i.e. where it's hotter, it tends to be poorer) was found in more than three-quarters of the 97 most populous cities (National Public Radio). This highlights how as the planet warms, urban lower-income households in dozens of large US cities will experience more heat than higher-income households, simply by virtue of where they live, putting this group at more risk of financial strain.

Bank of America data is already showing signs of these impacts. Lower-income customers have experienced greater peaks in the cost of their average utility payments on a 3-month rolling basis since the second half of 2020 (Exhibit 3). For individuals earning <\$50K, their average utility payment was nearly 38% higher in March than the 2019 average. And, according to the Census Bureau Household Pulse Survey's latest reading for the two-week period ending March 21, 2024, 38% of households with incomes <\$50K were unable to pay an energy bill or unable to pay the full bill amount at least once over the past 12 months.

Exhibit 3: Lower-income customers' average utility payments were nearly 38% higher than their 2019 average cost

Average utility payment per customer by income group (indexed, 2018 average = 100, 3-month moving average)

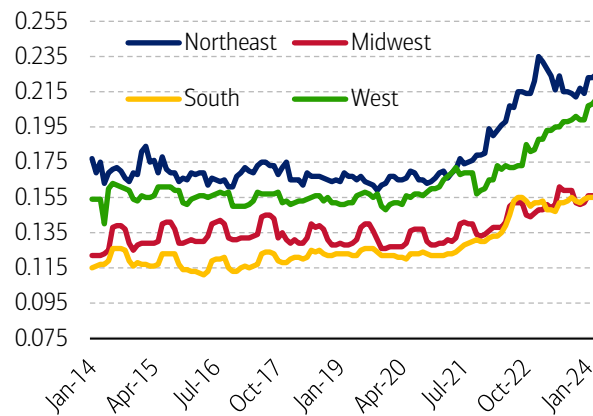


Source: Bank of America internal data

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Exhibit 4: The Northeast and West have experienced the fastest average price increases

Urban average price of electricity by US Census region (\$/Kwh)



Source: Bureau of Labor Statistics

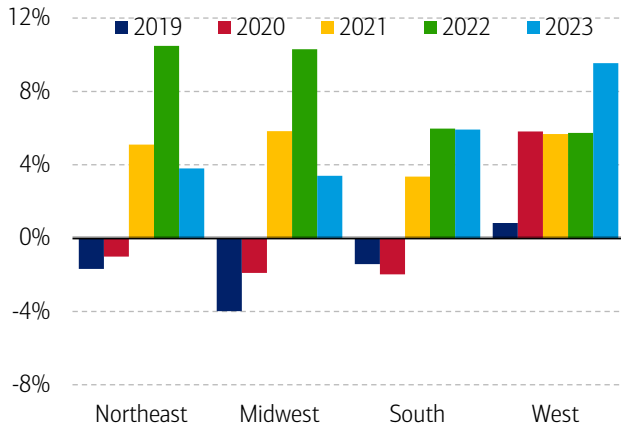
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Additionally, as we discussed in a (see note) [previous piece](#), where you live in the US can affect utility costs because of high electricity demand from air conditioning use. This explains why electricity demand in the residential sector tends to be highest on hot summer afternoons due to increased air conditioning use, followed by evenings, when the lights are turned on (source: Energy Information Administration). Using data from the Bureau of Labor Statistics, it's clear that not only is the average urban price of electricity the highest in the Northeast and the West, but it has also increased at a faster rate than other regions since the beginning of 2022 (Exhibit 4).

This rise could be a reason as to why we are seeing relatively stronger growth in average utility payments in these regions (Exhibit 5). The West is particularly notable as it is the only region which has seen continued annual growth in average utility payments across all five years since 2019. And when we examine core-based statistical areas (CBSAs) in the region, we find three cities have had utility costs rise over 40% since March 2019: Reno, NV, Las Vegas, and San Jose, CA (Exhibit 6).

Exhibit 5: Over the past five years, the Northeast and West have seen the greatest average utility payment growth increases

Average utility payment per customer by US Census region (% year-over-year)

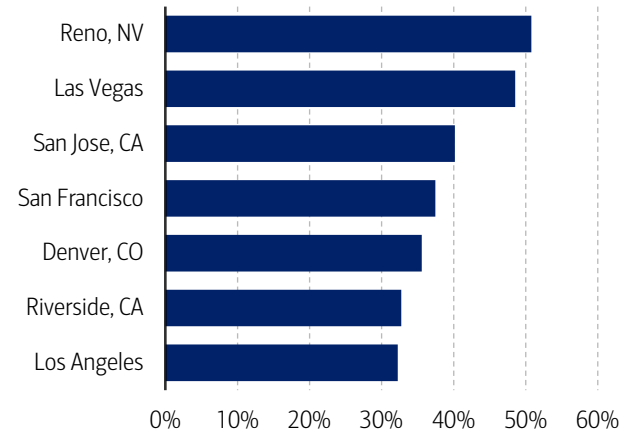


Source: Bank of America internal data

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Exhibit 6: Some cities in the West have seen average utility payments increase over 40% in March since the same month in 2019

Average utility payment per customer by select CBSA (3-month moving average, 5-year % change)



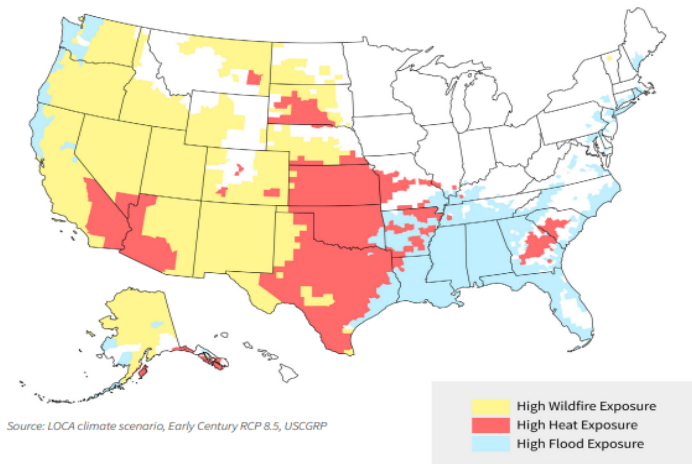
Source: Bank of America internal data

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Why such substantial increases in utility bills in the West? Likely because this region is notably at risk for high heat and wildfire exposure, as climate change can make heat domes — a phenomenon that creates heat waves like the one seen in the summer of 2023 (National Public Radio)— more frequent and more intense (Exhibit 7). Local economies and households in this region are therefore more susceptible to heat-induced economic costs.

Exhibit 7: The West is notably at risk for both high heat and high wildfire exposure

Predominant category of future climate hazard conditions by county



Source: LOCA climate scenario, Early Century RCP 8.5, USGCRP



Source: US Department of the Treasury

Note: The national map presented depicts counties that fall within the top 25 percent for future exposure to flooding, wildfire, and heat, and vulnerability per the U.S. Global Change Research Program’s (USGCRP) Localized Constructed Analog (LOCA) climate scenarios.

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Heat-exposed industries risk labor losses

Extreme heat is already having a significant impact on the US economy, increasing absenteeism and reducing work hours, and these effects are expected to worsen as the world warms per recent findings from the Joint Economic Committee. In 2021, this data showed that more than 2.5 billion hours of labor in the US agriculture, construction, manufacturing, and service sectors were lost to heat exposure. These heat-exposed industries, which also include mining and transportation, account for a significant share of the workforce across the country (Exhibit 8).

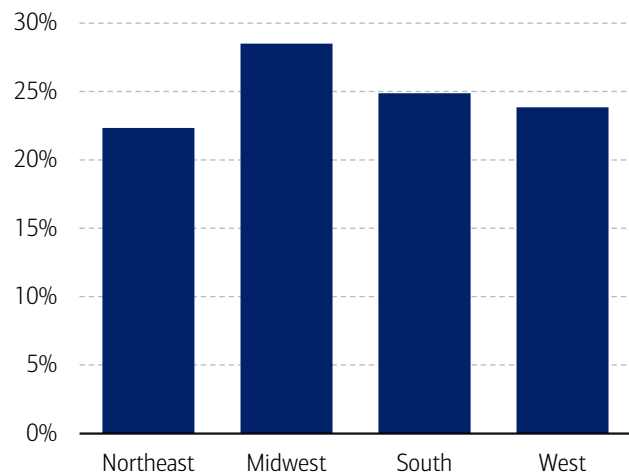
One way to gauge how these sectors’ profits are being impacted is by examining Bank of America internal data on the inflow-to-outflow ratio for small businesses’ checking and savings accounts. Specifically, we view the inflow into small business accounts as a proxy for revenues (though there is a small non-revenue component, such as deposits) and outflow as expenses. A ratio of less than 1 would then imply lower revenue than expenses.

Exhibit 9 shows that Bank of America data indicates that the small business inflow-to-outflow ratio for heat-exposed industries experiences a relative decline during warmer months compared to all sectors. And, for the past two years, it dropped below 1, possibly as a result in losses as firms struggle to adapt their operations to higher temperatures.

Furthermore, the 2023 Bank of America TCFD Report identifies industries beyond heat-exposed sectors such as energy and retailing that have heightened vulnerability to climate-related risk. For all sectors exposed to climate risks, these industries account for 61.2% of Bank of America’s total commercial credit exposure.¹

Exhibit 8: Workers in heat-exposed industries comprise a significant share of the workforce across the country

Average share of employment in heat-exposed industries (%)

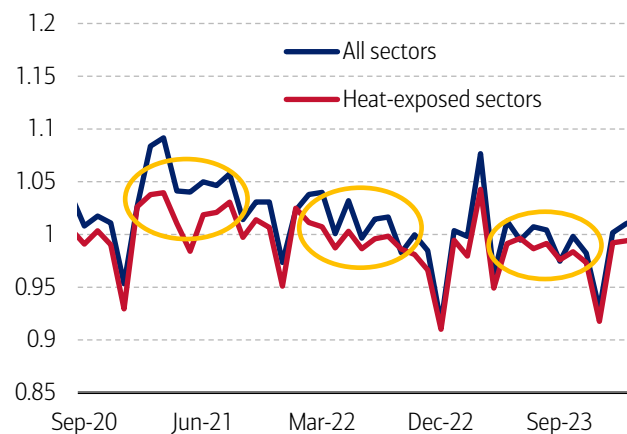


Source: 2021 American Community Survey, Joint Economic Committee
Note: Heat-exposed industries include transportation and warehousing, utilities, manufacturing, agriculture, mining, and construction.

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Exhibit 9: In generally warmer months, heat-exposed sectors see a relative decrease in inflow-to-outflow ratio compared to all sectors

Inflow-to-outflow ratio for small businesses by sector grouping, based on Bank of America internal data (monthly, 1+ = inflow greater than outflow)



Source: Bank of America internal data
Note: Heat-exposed sectors include transportation and warehousing, utilities, manufacturing, agriculture, mining, and construction.

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High heat, high economic costs

Global average temperatures are currently on track to rise by 2.7 degrees Fahrenheit by 2100, according to the Joint Economic Committee, and climate stressors like extreme heat are expected to disproportionately affect low-income communities who struggle to afford energy bills, especially for air conditioning. Furthermore, in recent years, utilities across the country have become increasingly concerned about the potentially destabilizing effects of summer heat waves on the electric grid, with parts of the US grid already under strain per BofA Global Research.

Additionally, the relative importance of vulnerable, heat-exposed sectors to local and state economies can amplify the direct economic impacts of heat. Ultimately, climate hazards are significant and continue to increase over the longer term, putting communities and households at risk of acute financial strain and future economic costs.

Methodology

Selected Bank of America transaction data is used to inform the macroeconomic views expressed in this report and should be considered in the context of other economic indicators and publicly available information. In certain instances, the data may provide directional and/or predictive value. The data used is not comprehensive; it is based on **aggregated and anonymized** selections of Bank of America data and may reflect a degree of selection bias and limitations on the data available.

Unless otherwise stated, data is not adjusted for seasonality, processing days or portfolio changes, and may be subject to periodic revisions.

Any payments data represents aggregated spend from US Retail, Preferred, Small Business and Wealth Management clients with a deposit account or credit card. Aggregated spend include total credit card, debit card, ACH, wires, and online bill pay.

¹ Task force on climate-related financial disclosures report

Any **Small Business** payments data represents aggregate spend from Small Business clients with a deposit account or a Small Business credit card. Payroll payments data include channels such as ACH (automated clearing house), bill pay, checks and wire. Bank of America per Small Business client data represents activity spending from active Small Business clients with a deposit account or a Small Business credit card and at least one transaction in each month. Small businesses in this report include business clients within Bank of America and are generally defined as under \$5mm in annual sales revenue.

Generations, if discussed, are defined as follows:

1. Gen Z, born after 1995
2. Younger Millennials: born between 1989-1995
3. Older Millennials: born between 1978-1988
4. Gen Xers: born between 1965-1977
5. Baby Boomer: 1946-1964
6. Traditionalists: pre-1946

Any reference to card spending per household on gasoline includes all purchases at gasoline stations and might include purchases of non-gas items.

Additional information about the methodology used to aggregate the data is available upon request.

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