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Consumer Morsel

Powering the revolution

02 July 2024

Key takeaways

- Consumers have had some respite from rising utility bills recently, with the year-over-year median utility payment per customer declining 1.4% in the three months to May, according to Bank of America internal data. However they are still paying a lot more than in 2019, and the price of some utilities, including electricity, has been rising, suggesting that any relief could be short-lived.
- At the same time, electricity demand is actually increasing, pressuring supply, and it may continue to do so for a long time as industrial onshoring and the AI revolution are both turbo-charging the need for generating capacity.
- This demand for significant investment in generation and related distribution infrastructure could be a headwind to consumers' utility bills for the foreseeable future.

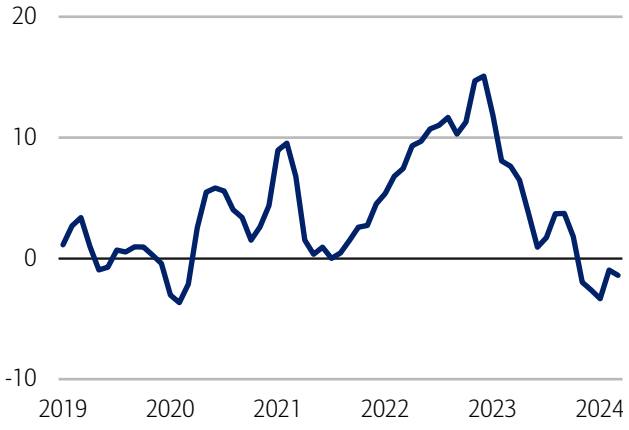
Some relief for households?

In recent months, we have noted the variety of cost pressures impacting households, including home and auto insurance payments (see: April Consumer Checkpoint), and rising housing costs more broadly. But one area of housing-related costs that appears to be offering some relief of late are utilities.

In Exhibit 1, Bank of America internal data illustrates the year-over-year (YoY) growth in median utility payments per customer. It shows a large rise over 2022 and 2023, but a cool-off more recently. In the three months to May 2024, this measure of utility payments declined by 1.4% relative to the same period in 2023.

This is good news, right? Yes – for now. But it's worth keeping in mind the impact of the previous rise. Exhibit 2 illustrates how median utility payments have changed since March-May 2019. We can see the rise in the median utility payment per customer across all generations is close to 20%. However, for younger millennials the rise is around 40%, as their consumption is likely rising as they take on larger properties.

Exhibit 1: Utility payment growth has come down, turning negative in 2024
Median utility payment per customer (three-month moving average of monthly data, % YoY)



Source: Bank of America internal data

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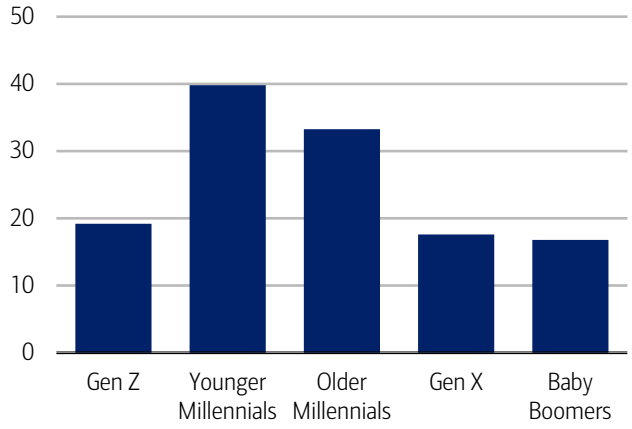
Exhibit 2: Millennials have seen the largest rises (between 30 to 40%) since 2019, likely as they move and take on more energy consumption
Median utility payment per customer by generation, change 2019 to March-May 2024 (%)



Source: Bank of America internal data

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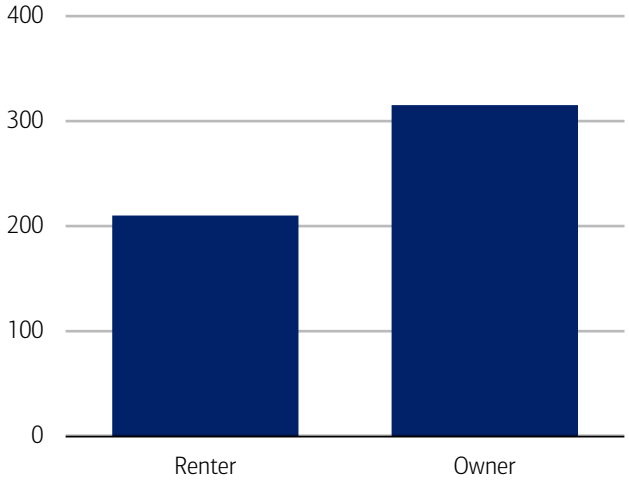
These monthly utility payments are not a small deal for the average consumer. Based on Bank of America internal data we estimate that homeowners spent more than $300 a month on utilities on average in the year to May 2024, while renters paid out just over $200 per month.

Relative to an estimate of household income that looks at recurring monthly deposit account inflows (and therefore includes retirement incomes) these payments are a bigger relative burden for the younger (Gen Z) and the older (Baby Boomers and Traditionalists) generations. This makes sense to us, as typically both groups have lower monthly incomes than those 'middle' generations. In fact, per Bank of America internal data, average utility payments are around 8% of income for households with inflows less than $4,000 a month, while for households with inflows greater than $10,000 a month this proportion drops to around 1%.

Exhibit 3: Average utility bills are just over $300 per month for homeowners
Average monthly utility payment per household over the year to May 2024



Source: Bank of America internal data

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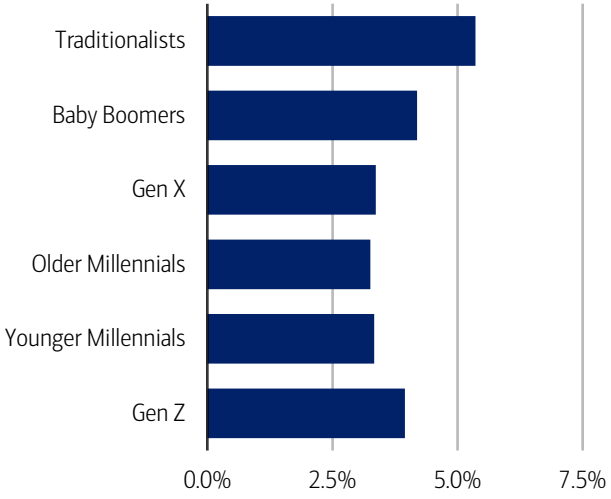
Exhibit 4: Relative to income utility payments are a bigger burden for the young and the old
Average monthly utility payment per household over the year to May 2024 relative to recurring deposit inflows (%)



Source: Bank of America internal data

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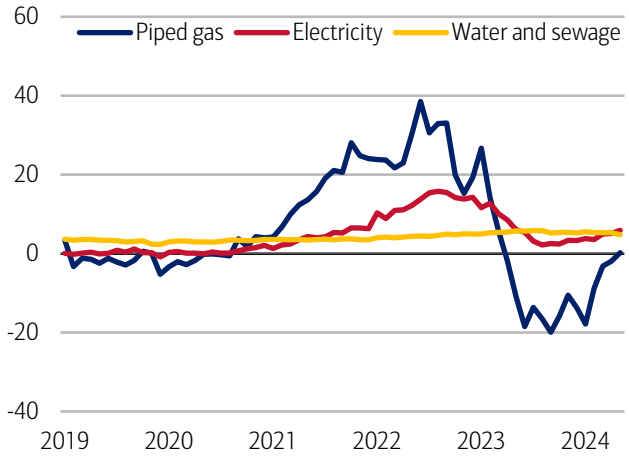
But how long will the respite last?

The recent easing in growth of utility payments should offer some relief to households facing other cost pressures, even if the payments remain well up on 2019 levels.

Exhibit 5: Utilities inflation has eased back from its highs, but is creeping higher for electricity and gas
Consumer price inflation in utility services (% YoY)



Source: Bureau of Labor Statistics

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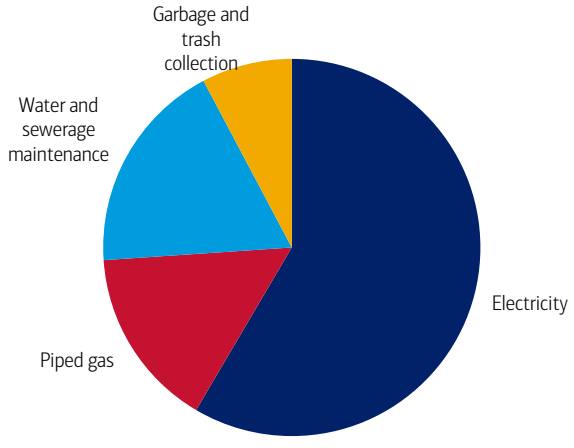
Exhibit 6: It's mainly electricity and gas prices that matter for the consumer
Relative importance of utility services in CPI (%)



Source: Bureau of Labor Statistics

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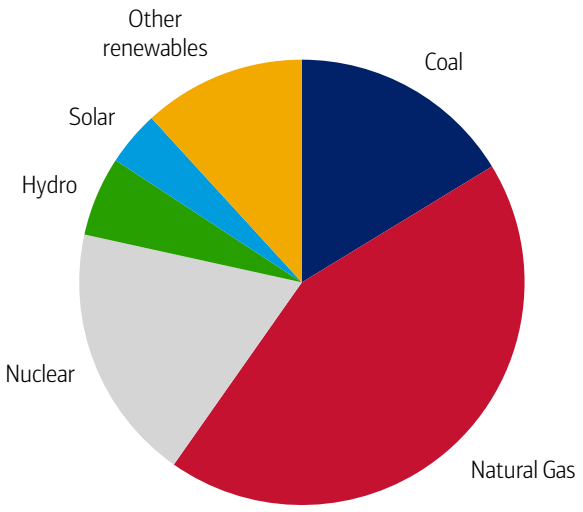
But there may already be signs this relief could be short-lived. Bureau of Labor Statistics (BLS) Consumer Price data indicates that key utility prices are showing signs of rising. Exhibit 5 shows the YoY inflation rate for electricity prices reached 5.9% in May, up from a low of 3.8% in January. Piped gas prices have also stopped falling YoY.

Looking at the relative importance of utilities in consumer price inflation (and therefore consumer spending), it is electricity prices that matter a lot here (Exhibit 6) with around 60% of the 'weight' being on electricity and 15% on piped gas according to BLS data.

Household utility payments are a product of both these price movements and the consumption of the services, so rising electricity prices would not necessarily translate into higher utility payments if households offset the price rises by consuming less electricity.

However, this seems relatively unlikely as electricity consumption is not really a discretionary item for households. And usage is also being driven by some trends such as the need for increased cooling in response to longer and more frequent heatwaves (see: Feeling the heat).

Exhibit 7: A large swathe of power generation still relies on fossil fuels still
Net power generation by source (2023, %)



Source: US Energy Information Administration (EIA)

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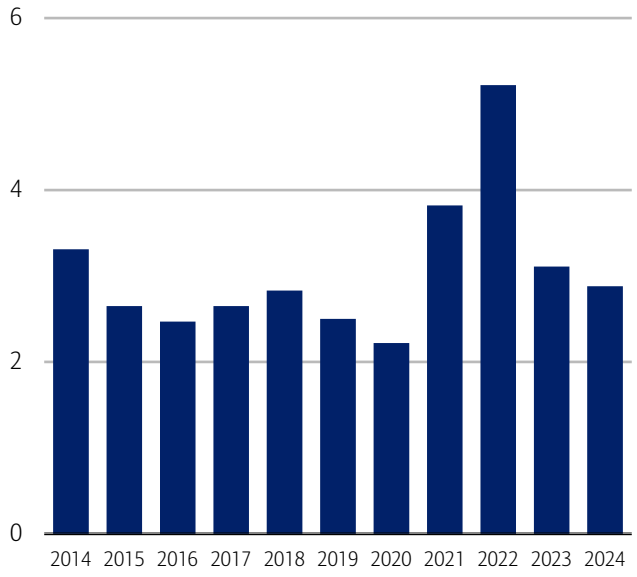
Exhibit 8: Fossil fuel input costs are down 7.4% over the first four months of 2024 compared to the 2023 average
All fossil fuels, average cost (Dollars per MMBtu)



Source: US Energy Information Administration (EIA)

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Power demand is rising fast

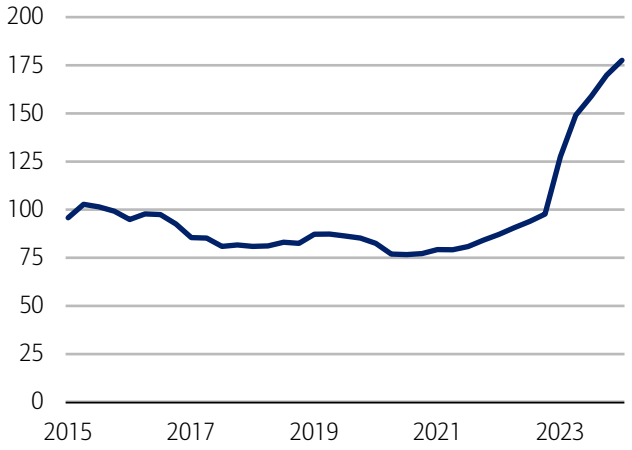
What is behind the rising cost of electricity?

Electricity generation is a complex business, with a diverse range of power sources (Exhibit 7) including a rising share from renewable sources, though generation that relies on fossil fuels accounted for almost 60% of the total in 2023. And interestingly, the current rise in retail electricity prices is not being obviously driven by increases in the inputs commonly used to generate this source of electricity. Exhibit 8 shows that according to the US Energy Information Administration (EIA), the cost of fossil fuels used in generation has fallen so far in 2024 compared to the average in 2023.

But there are a number of other factors potentially pressuring demand for electricity and thereby contributing to firmer utility prices. One of these is the impact of higher consumer demand for electricity in response, for example, to rising temperatures as we have discussed previously. Additionally, the increased demand for electric vehicles (EVs) and potentially heat pumps may also be boosting residential consumer demand.

But away from consumers, there are other upward influences on electricity demand, such as the trend towards 'onshoring' manufacturing capacity back to the US. Exhibit 9 and Exhibit 10 illustrate two aspects of this process. Investment in construction for manufacturing is currently exceptionally strong – some of which is being stimulated by incentives in the US Inflation Reduction Act (IRA) and the Creating Helpful Incentives to Produce Semiconductors Act (CHIPS). Exhibit 10 illustrates that this is being gradually reflected in rising US manufacturing capacity as this construction comes on stream. Given the long timelines in building large plants there is probably much more to come.

Exhibit 9: There has been a boom in manufacturing construction
Real private fixed investment in non-residential structures: manufacturing (2015=100)



Source: Bureau of Economic Analysis (BEA)

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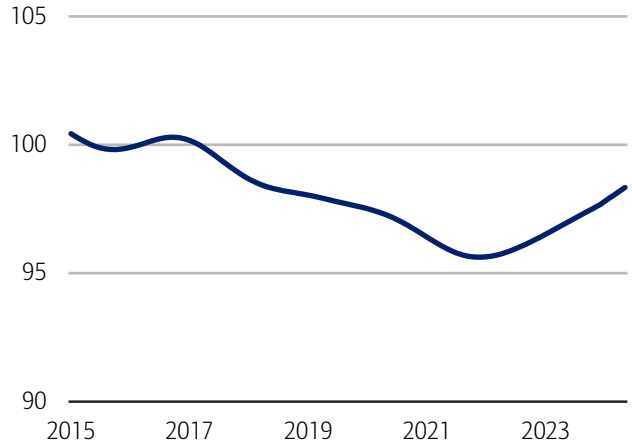
Exhibit 10: Manufacturing capacity is rising after a long period of declines
Manufacturing industrial capacity (2015=100)



Source: Board of Governors of the Federal Reserve System

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The US EIA estimates that industrial energy consumption is over a quarter of total energy consumption – more than double that of residential consumers. So, as this onshoring process continues, it is likely to contribute to significant additional electricity demand.

Generative AI requires…generation

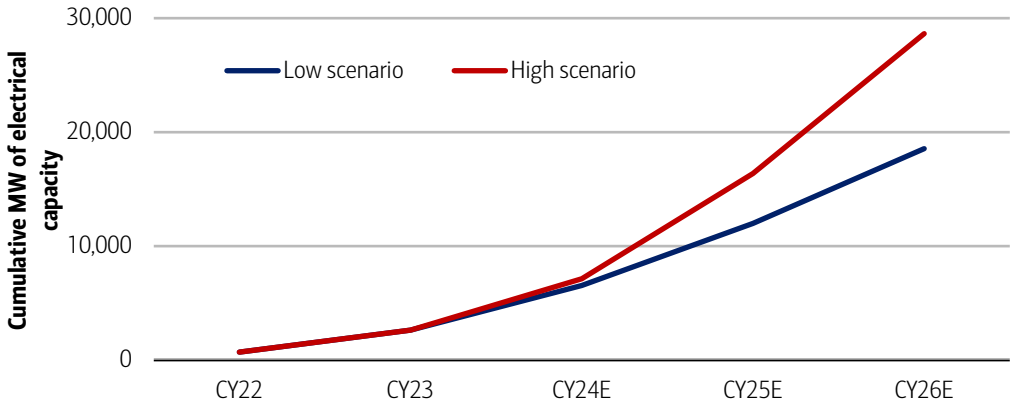
Another big nascent demand for electricity is coming from artificial intelligence (AI) (see: Next Gen Tech: Artificial Intelligence). Both demand and use cases for AI are expanding rapidly, adding to the need for additional cloud server capacity that can handle these services.

At the same time, AI chips are power-hungry, which only increases as the use cases of AI increase. For example, BofA Global Research shows that classifying text using AI uses around 2 kilowatt hours per one thousand tasks, but generating images using AI takes almost 3,000 kilowatt hours for the same number of tasks. For reference, the average US household uses around 886 kilowatt hours (kWh) per month.

This computational power demand from AI chips also means they run much hotter than standard semiconductors and some of the newest chips require liquid cooling, rather than the traditional air-based approaches. As such, the systems to deliver this cooling themselves take electrical power.

All this demand for power from the AI revolution is likely to be considerable. BofA Global Research's bottom-up estimate of the additional electricity demand from AI computing (Exhibit 11) suggests an additional 18-28 gigawatts of electricity capacity will be required by 2026. That compares to an EIA estimate of total generation capacity in 2023 of around 1,000 gigawatts.

Exhibit 11: Between 18-28GW of cumulative electricity capacity over 2023-26 may be required for AI computing
Estimated total AI chip electricity demand (MW)



Source: BofA Global Research. High and Low scenarios are based of differing assumptions around the trend in future power requirements per chip.

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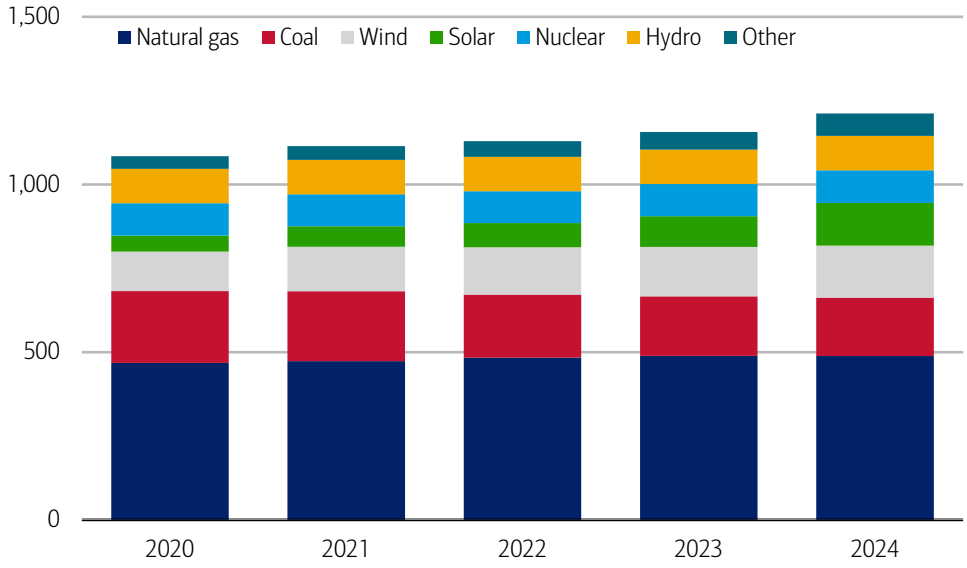
This demand for electricity from AI is additional to that coming from the already fast buildouts of traditional cloud servers. The EIA has found that between 2019-2023, demand for cloud server capacity has already been a driver of overall commercial electricity in some states. Over that period, commercial electricity demand has grown most in Virginia, which is a major hub for data centers. Demand has also increased significantly in Texas – another growth spot.

The additional electricity demand from these developments in the economy will require more generation capacity if supply is to keep up. The positive news is that there is already additional capacity in the pipeline (Exhibit 12), with the EIA forecasting a rise in generation of 3% in 2024 and 1% in 2025. The largest source of the increase comes from renewables, with 70% from solar, which is good news if this increased electricity generation is not to result in more carbon emissions.

Exhibit 12: Generating capacity is rising. The EIA forecasts a rise of 3% in 2024 and 1% in 2025.
US electricity generating capacity (gigawatts)



Source: US Energy Information Administration (EIA)

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But the AI revolution and industrial onshoring are likely to be multi-year – perhaps multi-decade – trends, so the demand for electricity may continue to ramp up from these sources for a long while yet. This will mean that investment in new generation capacity and the related distribution infrastructure will need to be sustained. AI can also be part of the solution to rising electricity demand, helping drive 'smarter' power grids that distribute electricity more efficiently to regions where demand is highest.

A headwind to consumers' bills

While the gyrations of global commodity prices, especially for fossil fuels, will likely continue to impact the price consumers pay for energy, the need for extra capacity in the electricity generation system may well act as a headwind to any prolonged drop in their utility bills. Given the larger relative share of income that utility bills account for amongst those with lower incomes, as well as older generations, the overall impact on consumers will need careful monitoring.

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.

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, bill pay, business/peer-to-peer, cash and checks.

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 generally defined as under $5mm in annual sales revenue.

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

The differences between the total and per household card spending growth rate can be explained by the following reasons:

1. Overall total card spending growth is partially boosted by the growth in the number of active cardholders in our sample. This could be due to an increasing customer base or inactive customers using their cards more frequently.

2. Per household card spending growth only looks at households that complete at least five transactions with Bank of America cards in the month. Per household spending growth isolates impacts from a changing sample size, which could be unrelated to underlying economic momentum, and potential spending volatility from less active users.

3. Overall total card spending includes small business card spending while per household card spending does not.

4. Differences due to using processing dates (total card spending) versus transaction date (per household card spending).

5. Other differences including household formations due to young adults moving in and out of their parent's houses during COVID.

Any household consumer deposit data based on Bank of America internal data is derived by anonymizing and aggregating data from Bank of America consumer deposit accounts in the US and analyzing that data at a highly aggregated level. Whenever median household savings and checking balances are quoted, the data is based on a fixed cohort of households that had a consumer deposit account (checking and/or savings account) for all months from January 2019 through the most current month of data shown.

Bank of America aggregated credit/debit card spending per household includes spending from active US households only. Only consumer card holders making a minimum of five transactions a month are included in the dataset. Spending from corporate cards are excluded. Data regarding merchants who receive payments are identified and classified by the Merchant Categorization Code (MCC) defined by financial services companies. The data are mapped using proprietary methods from the MCCs to the North American Industry Classification System (NAICS), which is also used by the Census Bureau, in order to classify spending data by subsector. Spending data may also be classified by other proprietary methods not using MCCs.

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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