NO. 3–2026 MAY 2026
FEDERAL RESERVE BANK OF ATLANTA'S *POLICY HUB*

K-shaped Economy or Not? Evidence from a Payments Survey

Aditi Routh, Federal Reserve Bank of Kansas City
Oz Shy, Federal Reserve Bank of Atlanta

Summary:

Using transaction data from a payments survey in the United States, we analyze how consumers across income groups changed their spending between 2021 and 2025. We find that spending by consumers with high household income (fourth and fifth quintiles) grew substantially faster than spending by consumers with low household income (first to third quintiles), a pattern that holds across total spending, grocery spending, and spending on necessities. Both groups saw spending increases, but the gap in growth rates points to a widening of consumption inequality across the income distribution. Rather than the canonical K-shaped recovery—in which lower-income consumer spending declines while higher-income consumer spending expands—our findings point to a bifurcated recovery in which both groups' spending grew but at sharply divergent rates.

Key Findings:

1. Spending by consumers with high household income (fourth and fifth quintiles) grew substantially faster than spending by consumers with low household income (first to third quintiles) between 2021 and 2025.
2. This pattern holds across total spending, grocery spending, and spending on necessities.
3. The gap in growth rates points to a widening of consumption inequality across the income distribution.

Center Affiliation: Center for Quantitative Economic Research

JEL Classification: D91, G41, E42

Keywords: K-shaped economy, spending levels by household income, changes in consumer spending over time

https://doi.org/10.29338/ph2026-03

CENTER FOR QUANTITATIVE ECONOMIC RESEARCH

CENTER FOR HUMAN CAPITAL STUDIES

CENTER FOR FINANCIAL INNOVATION AND STABILITY

ECONOMIC SURVEY RESEARCH CENTER

AMERICAS CENTER

K-shaped Economy or Not? Evidence from a Payments Survey

Summary: Using transaction data from a payments survey in the United States, we analyze how consumers across income groups changed their spending between 2021 and 2025. We find that spending by consumers with high household income (fourth and fifth quintiles) grew substantially faster than spending by consumers with low household income (first to third quintiles), a pattern that holds across total spending, grocery spending, and spending on necessities. Both groups saw spending increases, but the gap in growth rates points to a widening of consumption inequality across the income distribution. Rather than the canonical K-shaped recovery—in which lower-income consumer spending declines while higher-income consumer spending expands—our findings point to a bifurcated recovery in which both groups' spending grew but at sharply divergent rates.

About the Authors:

Aditi Routh is an economist in the Economic Research Department at the Federal Reserve Bank of Kansas City. More information about her can be found on this web page.

Oz Shy is a senior policy adviser and economist in the Research Department at the Federal Reserve Bank of Atlanta. More information about him can be found on this web page.

Acknowledgments: The authors thank Tom Heintjes and Camelia Minoiu for valuable comments on earlier drafts, and Whitney Strifler for the interactive charts. The views expressed here are the authors' and not necessarily those of the Federal Reserve Bank of Atlanta, Federal Reserve Bank of Kansas City, or the Federal Reserve System.

Comments to the author are welcome at Aditi.Routh@kc.frb.org *or* Oz.Shy@atl.frb.org.

1 Introduction

The term "K-shaped economy" (also known as "K-shaped recovery") emerged after the COVID-19 pandemic to describe divergence among segments of the society with respect to changes in their well-being. Well-being can be measured in a wide variety of dimensions such as income, spending, debt reduction, and wealth accumulation.

This paper focuses on the spending dimension. Using a yearly survey on consumer payments, we are able to compute average consumer spending levels according to household income groups during 2021–25. In addition to all spending, the paper also explores changes in spending levels by income groups according to specific spending categories such as groceries and a group of spending types that we classify as necessities.

We divide consumers in each year according to five household income groups (quintiles) as published by the US Census Bureau. We find that average consumer spending grew the fastest at the fifth household income quintile between 2021 and 2025. Average spending in the fourth quintile also grew faster than any other lower quintile. Average spending by consumers in the lowest quintile grew at the slowest rate.

Considering the spending categories, average spending on groceries by consumers in the fifth quintile grew the fastest, and that of consumers in the first quintile grew the slowest. The same result applies for average spending on necessities, which combine 10 essential spending categories including groceries.

To our best knowledge, there is not much literature examining diverging trends in average consumer spending by income group during the past five years.[1] However, several newspaper articles and also articles and blogs by the Federal Reserve System cite findings from Moody's Analytics.[2] Zandi (2025) displays a chart showing the level of personal spending by income group from 2019 to 2024 (somewhat similar to figure 1 in this paper, except that we use data from a yearly consumer payment survey). He finds that spending has just kept pace with inflation since the pandemic for consumers in the bottom 80 percent of the income distribution. He concluded that "the U.S. economy is being largely powered by the well-to-do."

Hoham and Yang (2025)} find that the top 20 percent of the earners (fifth quintile) are responsible for 57 percent of overall consumption on average from 2020 to the second quarter of 2025. Based on a survey of 2,462 respondents, Akana (2025) has found that lower-income respondents are more likely than higher-income respondents to report consciously attempting to reduce their spending and to report reducing their actual spending in the last three months.

[1] Henry (2014) investigated whether consumption of luxury and necessity goods has diverged across income groups over the 1984–2012 period. We extend this line of inquiry to the more recent post-pandemic period (2021–25).

[2] See, for example, "The U.S. Economy Depends More Than Ever on Rich People," *Wall Street Journal*, February 23, 2025.

As Horwich (2026) writes, “Moody’s reported that spending by the top 10 percent grew 62 percent between third quarter 2020 and third quarter 2025, much more than any other income group.”

This study sheds light on consumer spending patterns using transaction-level data from an annual US payments survey. Although prior work has drawn on aggregate sources from the US Bureau of Economic Analysis and the Federal Reserve, or on the US Bureau of Labor Statistics’s Consumer Expenditure Survey, our analysis uses the Survey and Diary of Consumer Payment Choice (SDCPC), which records each expense as a transaction over a much shorter three-day period. This structure allows a more direct view of how spending varies across households and income groups, particularly at the transaction level and across spending categories.

Section 2 describes the data. Section 3 analyzes average spending by income group during 2021–25 and the corresponding spending growth rates. Section 4 analyzes average spending on groceries and separately on necessities from 2021 to 2025. Section 5 concludes.

2 Data

Subsection 2.1 describes the data on consumer spending. Subsection 2.2 characterizes the household income quintiles according to the United States Census Bureau.

2.1 The survey and diary of consumer payment choice

The data used throughout this article are taken from the 2021–25 Survey and Diary of Consumer Payment Choice (SDCPC). The SDCPC is a representative sample of United States consumers age 18 and older taken from the University of Southern California’s Understanding America Study.

The SDCPC asks respondents to record all their transactions during three consecutive days in October. The transactions recorded in the SDCPC include purchases, bill payments, person-to-person payments, ATM withdrawals, deposits, and income receipts. On each assigned diary day, respondents report how much they paid, the means of payment that they used, and the type of merchant or person to whom the payment was made. Respondents’ three-day periods were evenly distributed throughout each day in October.[3]

The data also provide information on to whom the payments were made. Each payment in the data contains a merchant (spending) category indicating the type of spending. Survey respondents select one merchant category out of 21 merchant categories. Table A in the appendix describes the merchant categories.

[3] The yearly data and summary reports are available for downloading from atlantafed.org/research-and-data/surveys/survey-and-diary-of-consumer-payment-choice. The data and R-code for the analysis in this paper can be downloaded from github.com/ozshy/k_economy.

The raw data for each survey year (2021 to 2025) are divided into two yearly datasets: the "individuals" sample and the "transactions" sample. The two samples for each year are then merged via each unique respondent's ID. From the individuals sample we removed respondents who did not report their household income (*income_hh*). From the transactions sample we removed transactions with missing merchant category (*merch*), missing transaction dollar amount (*amnt*), and transactions with negative or zero dollar amounts (*amnt* ≤ 0). From the 2021 sample, we removed one respondent who recorded six times paying $2,000 for groceries (clearly an error). Lastly, we removed all transactions that took place before October 1 and after October 31.[4] The bottom two rows in table A (in the appendix) display the total number of transactions and the total number of respondents (consumers) for each year (2021 to 2025) after the removal of all missing observations.

2.2 Household income quintiles

Table 1 displays lower and higher limits of household income quintiles for each year from 2021 to 2025.[5]

Table 1: US Household income quintile thresholds, 2021—25

Upper limit of	Y2021	Y2022	Y2023	Y2024	Y2025	CAGR
1st quintile	$28,261	$30,623	$31,942	$33,775	$35,314	4.6%
2nd quintile	$54,440	$58,741	$61,190	$64,384	$67,142	4.3%
3rd quintile	$87,037	$93,431	$97,458	$101,835	$105,912	4.0%
4th quintile	$140,307	$150,597	$155,515	$163,696	$170,129	3.9%
5th quintile	Highest	Highest	Highest	Highest	Highest	

Source: US Census Bureau, Current Population Survey
Notes: Values are pre-tax in nominal dollars. CAGR (compound annual growth rate) was computed from 2021 to 2024. Y2025 quintiles were imputed; see footnote 5.

Table 1 shows that the upper limit of the first quintile grew 4.6 percent between 2021 and 2024, whereas that of the fourth quintile grew 3.9 percent. The second and third quintiles grew 4.3 percent and 4 percent, respectively.

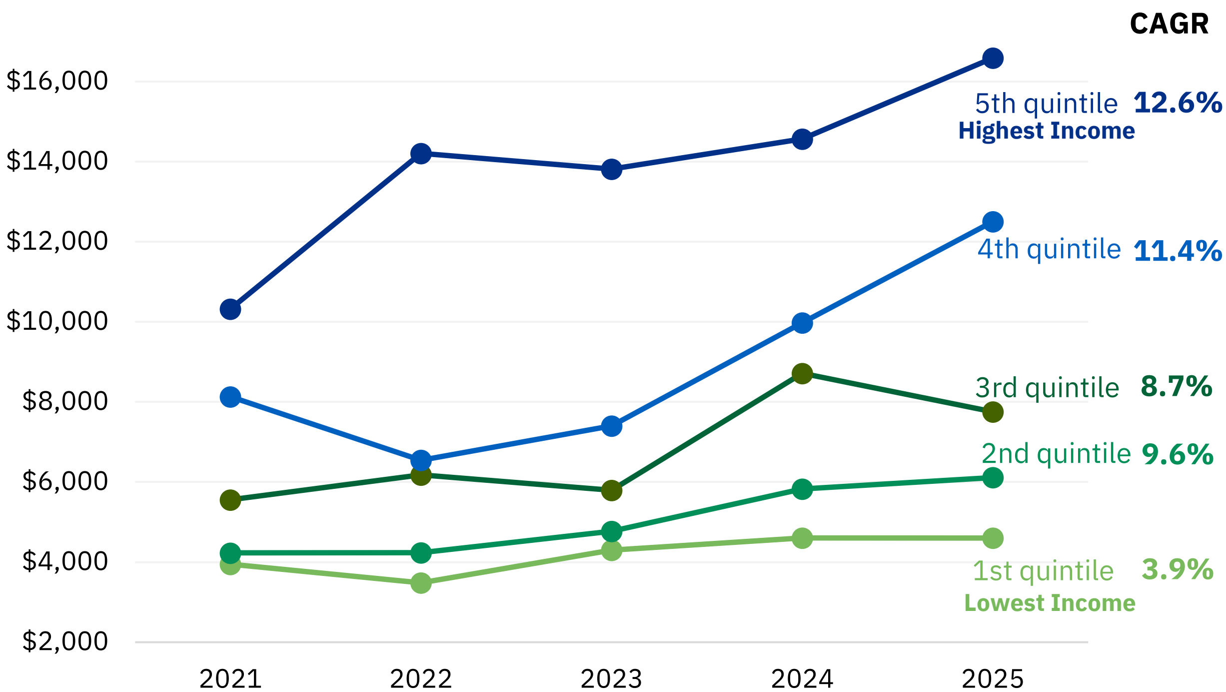
[4] Each year, the survey begins two days before October 1, thus ensuring that, starting October 1, there would be an approximately equal number of respondents who report on their transactions during their first, second, and third days of their three-day payment diary. For that same reason, the diary also terminates two days after October 31.

[5] Sources for the household income quintiles are: 2021, 2022, 2023, and 2024 (US Census Bureau). The 2025 quintiles were not available at the time of writing this paper. Therefore, the 2025 quintile thresholds were imputed by the authors using the compound annual growth rate (CAGR) from 2021 to 2024 for each quintile threshold separately.

3 Spending patterns by household income (2021–25)

Figure 1 displays average October spending according to household income quintiles during 2021–25.

Figure 1: Average per-person October total spending, 2021–25



Source: Authors' calculations from the 2021–25 Survey and Diary of Consumer Payment Choice
Notes: Household income quintiles are defined in table 1. The respondents' three-day spending levels were adjusted to monthly October spending levels (dividing by 3 and multiplying by 31).

Figure 1 shows that average October spending trended upward over 2021–25 in all income quintiles. However, figure 1 also shows that average spending by respondents in high-income quintiles rose faster than in lower quintiles. In fact, figure 1 shows the compound annual growth rates (CAGR) of October spending increased almost monotonically from the lowest- to the highest-income quintile. The fourth and fifth quintiles grew 11.4 percent and 12.6 percent, respectively. The first and second quintiles grew 3.9 percent and 9.6 percent, respectively. The findings from figure 1 are summarized as follows:

Findings 1

Average spending by respondents in the two highest household income quintiles grew much faster relative to all other respondents. Average spending by respondents in the lowest quintile grew significantly slower relative to all other respondents.

In that sense, during 2021 to 2025, the (postpandemic) US economy was a "K-shaped economy" with respect to spending levels.

Another way of looking at the rising differences in spending levels among the income groups is to compute the spending ratios, as table 2 shows.

Table 2: Ratios of spending levels among quintiles

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	**5th/4th**	**5th/3rd**	**5th/2nd**	**5th/1st**	**4th/3rd**	**4th/2nd**	**4th/1st**	**3rd/2nd**	**3rd/1st**	**2nd/1st**
Y2021	1.3	1.9	2.4	2.6	1.5	1.9	2.1	1.3	1.4	1.1
Y2022	2.2	2.3	3.4	4.1	1.1	1.5	1.9	1.5	1.8	1.2
Y2023	1.9	2.4	2.9	3.2	1.3	1.6	1.7	1.2	1.3	1.1
Y2024	1.5	1.7	2.5	3.2	1.1	1.7	2.2	1.5	1.9	1.3
Y2025	1.3	2.1	2.7	3.6	1.6	2.0	2.7	1.3	1.7	1.3

Source: Authors' calculations from the 2021–25 Survey and Diary of Consumer Payment Choice
Notes: Household income quintiles are defined in table 1.

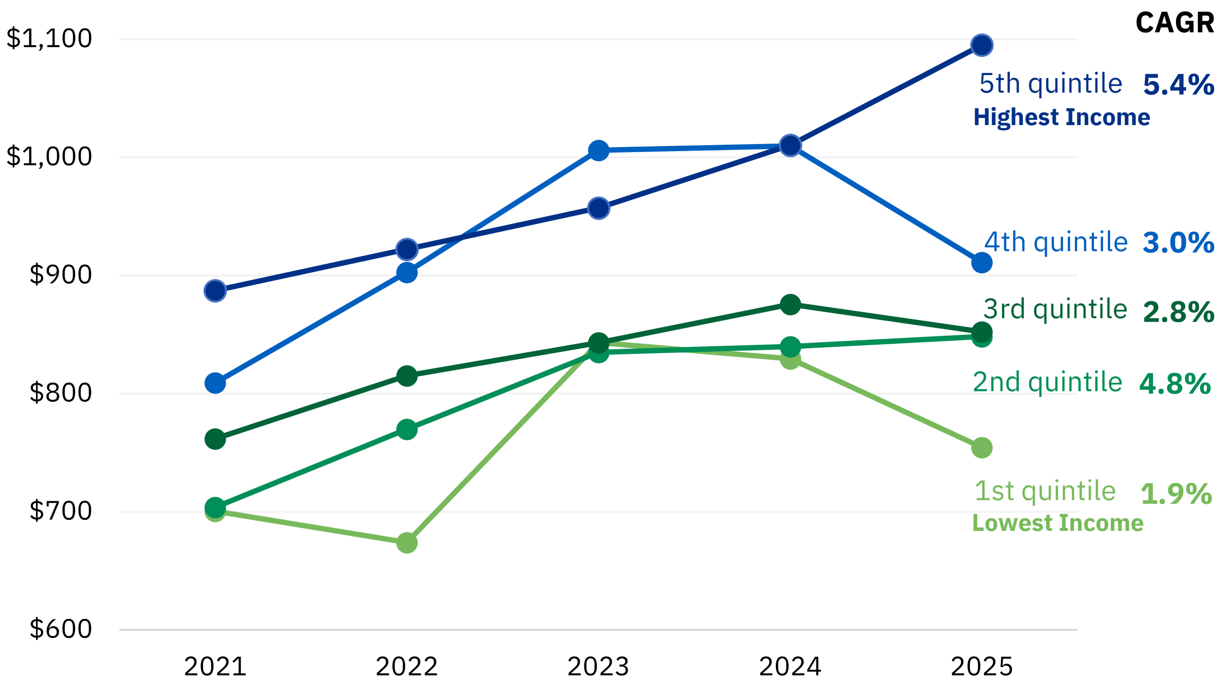
Column (a) in table 2 shows that the ratio of average spending of the fifth to the fourth quintile went up and then down to the 1.3 level. In contrast, columns (c) and (d) show that the ratio of average spending of the fifth to the second quintile and the fifth to the first quintile increased over the years (although not monotonically).

Columns (e) and (f) show that the average spending ratios of the fourth to the third quintile and the fourth to the second quintile have not changed much. However, column (g) reveals the ratio of the fourth to the first increased (not monotonically) from 2.1 to 2.7. Columns (i) and (j) show that the average spending ratios of the third to the first quintile and the second to the first quintile have also increased (although not monotonically).

4 Spending patterns by income and spending categories (2021–25)

Figure 1 displays average October spending in all the 21 spending categories listed in table A (in the appendix). In contrast, figure 2 focuses on grocery spending only.

Figure 2: Average per-person October total spending on groceries: 2021–25



Source: Authors' calculations from the 2021–25 Survey and Diary of Consumer Payment Choice
Notes: Household income quintiles are defined in table 1. The respondents' three-day spending levels were adjusted to monthly October spending levels (dividing by 3 and multiplying by 31).

As shown in table A (in the appendix), the number of grocery purchases exceeds the number of purchases in any other spending category. In addition, groceries are viewed as the most important necessity of any consumer. Figure 2 implies the following findings:

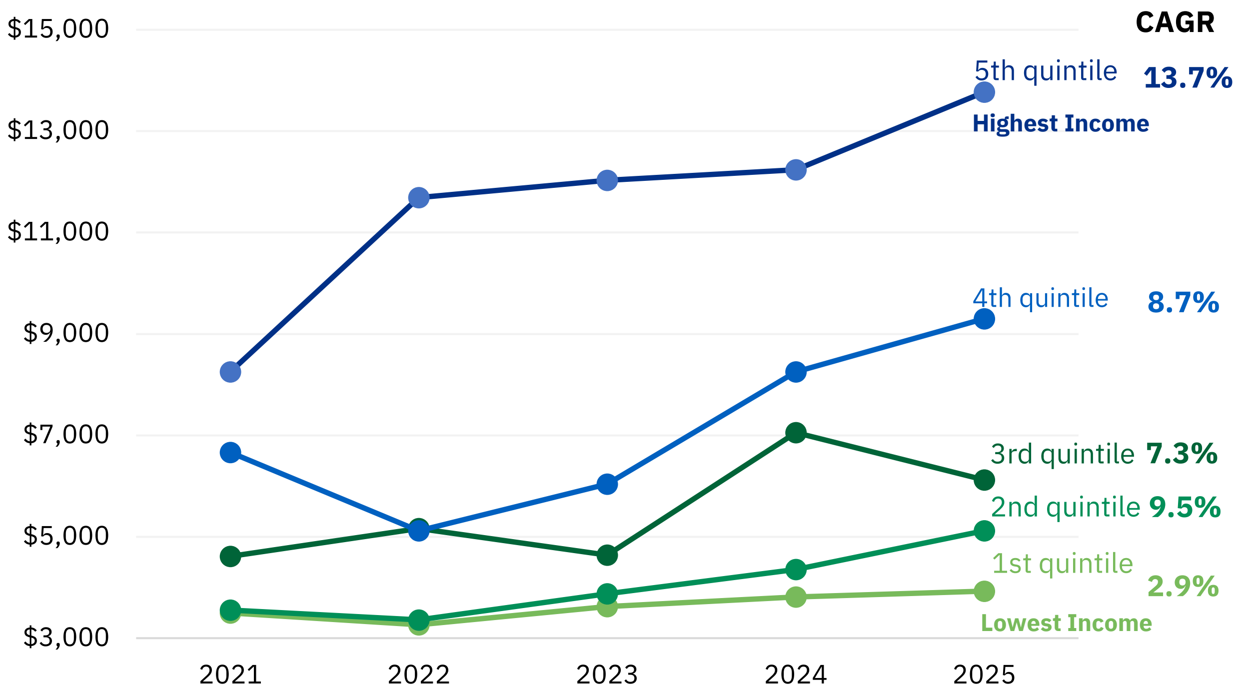
Findings 2

(a) *Average grocery spending by respondents in the fifth quintile grew the fastest (5.4 percent). Average spending in the lowest quintile grew at the slowest rate (1.9 percent).*

(b) *Average grocery spending by respondents in the second income quintile grew faster than by respondents in the third and fourth quintiles (4.8 percent versus 2.8 percent and 3 percent, respectively).*

Figure 3 depicts average spending by income quintile on 10 spending categories that we classify as necessities.

Figure 3: Average per-person October total spending on necessities, 2021–25



Source: Authors' calculations from the 2021–25 Survey and Diary of Consumer Payment Choice
Notes: Household income quintiles are defined in table 1. The respondents' three-day spending levels were adjusted to monthly October spending levels (dividing by 3 and multiplying by 31).

The 10 spending types that we call "necessities" include groceries, gas, utilities, communication, rent, mortgage, insurance, healthcare, taxes, education, and transport. Table A (appendix) provides detailed descriptions of these spending categories. Figure 3 implies the following findings:

Findings 3.

(a) *Average spending on necessities by respondents in the fifth quintile grew the fastest (13.7 percent). Average spending in the lowest quintile grew at the slowest rate (2.9 percent).*

(b) *Average spending on necessities by respondents in the second income quintile grew faster than by respondents in the third and fourth quintiles (9.5 percent versus 7.3 percent and 8.7 percent, respectively).*

5 Concluding remarks

This paper confirms earlier reports about the divergence in consumer spending among the different income groups. The novelty of this research is the reliance on unique data collected directly from respondents who participated in a diary payments survey. These data contain information on actual purchases by spending type that were reported in the respondents' diary report.

Focusing on the postpandemic years (2021 to 2025), we find that average spending by consumers in the fifth and fourth household income quintile grew at much faster rates than average spending by consumers in lower income quintiles (see figure 1). The same results hold for grocery spending (see figure 2) and spending on 10 items that we classify as necessities (see figure 3). Spending in all categories and also separately on groceries and on necessities by consumers in the first (bottom) household income quintile grew much slower than spending by other consumers indicating that consumption inequality widened even for essential goods during 2021–25.

Taken together, these findings are broadly consistent with previous reports of divergent postpandemic spending across income groups, lending further weight to the existing evidence base. By anchoring the analysis in transaction-level diary data rather than aggregate sources, we offer a more direct measurement of this divergence—and we show that spending across income groups does not take the canonical K-shape, but rather a bifurcated form in which spending grew across all income groups but at sharply different rates.

6 Appendix: Spending categories

Table A displays the number of payments, number of respondents (consumers), and the average payment amount according to 21 spending categories.

Table A: Consumer spending type by merchant category

Spending category	2021		2022		2023		2024		2025	
	Obs.	Avg.	Obs.	Avg.	Obs.	Avg.	Obs.	Avg.	Obs.	Avg.
1. Grocery store (N)	2,823	$47	3,486	$48	3,890	$51	4,925	$49	5,145	$49
2. Gas station (N)	1,358	$38	1,562	$40	1,655	$34	1,966	$33	1,997	$31
3. Restaurant/bar	1,010	$47	1,197	$46	1,244	$47	1,552	$48	1,651	$48
4. Fast food/coffee shop	2,069	$19	2,382	$17	2,811	$21	3,643	$19	3,767	$17
5. General merchandise store	2,473	$89	2,848	$102	3,324	$83	4,136	$76	4,357	$91
6. General service	516	$131	554	$162	618	$108	806	$124	830	$116
7. Art/entertainment	419	$106	468	$65	541	$79	723	$68	835	$65
8. Non-government utility (N)	639	$125	633	$136	752	$135	931	$132	1,093	$170
9. Taxi/airplane/delivery	80	$85	121	$173	167	$129	244	$89	280	$141
10. Phone/internet/cable (N)	789	$112	728	$102	805	$91	1,244	$85	1,245	$86
11. Contractor/plumb/elec	57	$818	63	$1,027	80	$677	112	$1,154	101	$3,056
12. Professional service	148	$225	129	$135	153	$208	250	$320	239	$296
13. Hotel/motel/campsite	51	$349	48	$361	82	$251	103	$318	100	$322
14. Rent (N)	189	$603	168	$818	188	$955	257	$888	362	$900
15. Mortgage/insur/loans (N)	1,353	$649	1,537	$618	1,672	$597	2,288	$710	2,413	$767
16. Person-to-person	679	$169	711	$150	741	$114	982	$215	1,045	$165
17. Charitable/religious	272	$171	336	$91	381	$87	507	$88	516	$105
18. Hospital/doctor/dentist (N)	327	$201	366	$158	369	$141	473	$153	608	$133
19. Government taxes (N)	140	$582	139	$1,129	201	$840	218	$939	228	$708
20. School/college/childcare (N)	118	$278	158	$242	138	$183	177	$218	171	$252
21. Public transport/tolls (N)	230	$13	249	$12	379	$14	551	$18	585	$11
All spending categories	15,740	$614	17,883	$632	20,191	$657	26,088	$802	27,568	$857
No. respondents (consumers)	3,602		3,957		3,966		4,790		5,185	

Source: The 2021–25 Survey and Diary of Consumer Payment Choice
Notes: “obs” are the number of payments (transactions) made in this spending category. “avg” is the average dollar ($) payment value. (N) means spending that is classified as a “necessity.”

Table A shows that groceries constitute the largest volume of payments in each year. General merchandise purchases rank second in payments volume. In terms of dollar value, the contractor/plumber/electrician, rent, and mortgage/insurance/loans categories are the highest-spending payment amounts.

References

Akana, Tom. 2025. Evidence of diverging spending behavior by income. Consumer Finance Institute. Federal Reserve Bank of Philadelphia. philadelphiafed.org/consumer-finance/evidence-of-diverging-spending-behavior-by-income

Henry, LaVaughn. 2014. Income inequality and income-class consumption patterns. Economic Commentary. Federal Reserve Bank of Cleveland. DOI: doi.org/10.26509/frbc-ec-201418

Hoham, Benjamin, and Fang Yang. 2025. Consumption concentration may be up, adding slightly to economic fragility. dallasfed.org/research/economics/2025/1125-yang-consume

Horwich, Jeff. 2026. Have U.S. consumers gone "K-shaped"? A review of the data. Federal Reserve Bank of Minneapolis. minneapolisfed.org/article/2026/have-us-consumers-gone-k-shaped-a-review-of-the-data

Zandi, Mark. 2025. An online post with an update on spending by income group. x.com/Markzandi/status/1967914286438576289