# Timelines of recession and recovery

A chartbook of what happens to key segments of the economy vital to the financial services industry before, during and after recessions





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# Economist's note

"Timelines of recession and recovery" was born out of conversations with the leadership teams of financial institutions around the country and here internally at Experian. What started off as a piecemeal approach to answering questions around the potential business-line impacts of a recession has turned into a broader collation of data points. By pulling together what happens to key segments of our economy (including employment, consumer spending, lending and delinquency) before, during, and after recessions, my hope is that banks, credit unions, fintechs and others will be able to better establish a framework for what to expect when the next downturn inevitably arrives.

The first rebuttal of this effort will no doubt be "every recession is different" and "especially, this time", but as you will see throughout the report, **trends begin to emerge in the data**, which, I believe, will prove useful in assessing the potential timing and impact to your business — both within and outside of recessionary periods. The point of this project is not to tell you what will happen, but to give you a starting point from which to anchor key assumptions. Cheers and happy reading.



Joseph Mayans | Director of U.S. Economics



# What is a recession?

Executive teams spend a significant amount of time anticipating and planning for the next recession, even as these stress events occupy a relatively short time in our economic history. Since 1980, the U.S. economy has spent roughly 155 quarters (~38 years) in expansion, and only 20 quarters (5 years) in recession. However, recessions can sometimes be generation-defining events that significantly impact the financial health of households and businesses and leave long-lasting scars on the broader economy.

While there have been recent discussions of "rolling-mini recessions" or "sector-specific recessions", these characterizations obscure what has historically been considered a recession in the United States and the specific impacts they carry. The official arbiter of U.S. recessions, the National Bureau of Economic Research (NBER), defines them as:

# "... a significant decline in economic activity that is spread across the economy and that lasts more than a few months."

Some of the key data points NBER considers when determining a recession has occurred are:

Real personal income less transfers, nonfarm payroll employment, real personal consumption expenditures, wholesale-retail sales adjusted for price changes, employment as measured by the household survey and industrial production

The duration of a recession is measured from peak to trough, which means they begin in the period (month or quarter) after the economic peak has been reached and end at the trough (low point) of the cycle — at which point the next expansion begins (Chart 1).

While NBER's criteria for measuring recessions are important for determining the impact to the broader economy, for the purposes of this resource, we will be focusing primarily on the correlated effects for consumers and the lending industry.

# CHART 1





# Organization and notes on the data

The following chartbook is designed to be a reference and review of publicly available economic data that pieces together what happens to key variables in the time periods surrounding a recession. Because the focus is for financial institutions and those industries that rely on consumers, the segments of the economy that will be assessed are the labor market, lending and delinquencies, and consumer spending.

The data (other than gross domestic product) are presented in nominal within and outside of recessionary times. terms, rather than real (inflation-adjusted), as that is the basis by which financial institutions operate. This report covers the 1981, 1990, 2001, Because of the number of data points presented, this chartbook is split into two sections. The first section provides a look at the "average" 2008 and 2020 recessions, but there are times in which a shorter horizon is assessed for certain data points given the lack of historical recession and the summary heatmaps for the last five downturns. information. All data is presented on a quarterly basis. Due to the unique This should provide a good overview and may be enough information dynamics created by the pandemic lockdowns in the 2020 recession, the for most readers. The second section of the report will dive deeper into impact charts show both the average with 2020 included and excluded. several of the areas presented in the summary. Unless otherwise noted, the overall average (which includes 2020) is what is referenced in the text.

### Much of the information is presented in the form of heatmaps that cover the two years leading up to a recession through the two years after. Heatmaps are used help show the timing of impact and are useful for determining general relationships and answering questions, such as: when do delinquencies tend to peak relative to unemployment? How long after institutions begin tightening credit does it show up in overall credit growth? Some of these relationships should prove useful both







# THE "AVERAGE" RECESSION

The following summary provides a look at how key economic variables develop surrounding the prior five recessions in 1981, 1990, 2001, 2008, and 2020. The first section of charts show the average impact and timeline of when those impacts are most acute. The heatmaps then provide a broader view of the two years leading up to each recession, the recession, and the two years after. Pink in the heatmaps represents slower growth for most data points and higher rates for unemployment, interest rates, and delinquencies. The darker the pink, the greater the impact. The most acute hits to unemployment, lending and delinquency, do not occur until after the recession has officially ended. Because of this dynamic, the impact charts show the totality of effect, not just what happens during the recession itself. And while the charts show the two years after the recession, in some cases, it can still take much longer for some segments of the economy to fully recover.

### The average recession

Since 1981, recessions have lasted an average of four quarters, during which economic growth fell to a quarterly average of -4.8% (charts 2, 3). The hit to the labor market resulted in the loss of 3.9% of jobs and caused the unemployment rate to rise by 4.3 percentage points (pp) (charts 4, 5). The impact resulted in quarterly growth of consumer spending to ease from 1.8% to 0.7% (excluding 2020), lending growth to contract by -0.1% (the year after a recession), and total delinquencies to rise by 1.6 pp (charts 6, 7, 8).

In terms of timing, the 10-year treasury and 30-year mortgage rates tend to peak roughly 5 quarters prior to the start of a recession, with the fed funds rate peaking a quarter after that — a year out from the downturn. During a recession is when credit conditions tend to be at their tightest, job losses are the most acute, and consumer spending is slowest. Delinquencies peak, on average, two quarters after the end of a recession, with unemployment peaking three quarters out. The year after a recession is when overall lending activity is at its weakest (chart 9).

## **CHART 2**

### Length of prior recessions (in quarters)



Source: National Bureau of Economic Research and author's calculation

# CHART 4

### Decrease (%) in nonfarm payrolls



6

Source: Bureau of Labor Statistics and author's calculation

### THE "AVERAGE" RECESSION

### CHART 3

### Real gross domestic product: average quarterly growth



### **CHART 5**

### Increase (pp) in unemployment rate

Source: Bureau of Labor Statistics and author's calculation

### **CHART 6**



### Total consumer spending: average quarterly growth

Source: Bureau of Economic Analysis and author's calculation

# **CHART 8**

### Increase (pp) in delinquency: all loans



Source: Federal Reserve and author's calculation

### THE "AVERAGE" RECESSION

### CHART 7

### Total loans and leases, commercial banks: average quarterly growth

### ■ Prerecession (2 years) ■ Recession ■ 1st year postrecession ■ 2nd year postrecession

Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation



### CHART 9 The "average" recession timeline

_										
			Two ye	ars pri	or to red	cession				F
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	(
				•	Feo 10-year t 30-year i peaks	d funds r reasury: mortgage	ate peak peaks e rate	S		

### THE "AVERAGE" RECESSION



# TIMELINE HEATMAP 1981 recession

1/01/16/2531011		2	2 years	prior to	recessio	on start		Peak		R	ecessio	n		]		2 year	s after	recessi	on end		
	Q4 1979	Q1 1980	Q2 1980	Q3 1980	Q4 1980	Q1 1981	Q2 1981	Q3 1981	Q4 1981	Q1 1982	Q2 1982	Q3 1982	Q4 1982	Q1 1983	Q2 1983	Q3 1983	Q4 1983	Q1 1984	Q2 1984	Q3 1984	(
Real gross domestic product (Q/Q % SAAR)	1.0	1.3	-8.0	-0.5	7.7	8.1	-2.9	4.9	-4.3	-6.1	1.8	-1.5	0.2	5.4	9.4	8.2	8.6	8.1	7.1	3.9	
Employment (Q/Q %)	0.3	0.3	-0.5	-0.4	0.8	0.4	0.3	0.2	-0.4	-0.7	-0.5	-0.8	-0.6	0.2	0.8	1.0	1.4	1.3	1.1	1.0	
Unemployment rate*	6.0	6.3	7.3	7.7	7.4	7.4	7.4	7.4	8.2	8.8	9.4	9.9	10.7	10.4	10.1	9.4	8.5	7.9	7.4	7.4	
Personal income (Q/Q%)	2.6	3.4	1.5	3.5	3.9	2.5	1.8	3.8	1.6	1.5	1.6	2.1	1.4	1.8	1.6	2.8	2.9	3.1	2.6	2.1	
Consumer spend (Q/Q%)	2.7	2.9	0.1	3.5	3.9	2.9	1.7	2.1	0.8	2.0	1.3	2.3	2.9	1.8	3.0	3.1	2.3	1.9	2.4	1.5	
New homes (thsd, SAAR)	609	536	464	630	552	512	451	382	398	369	364	421	518	580	651	595	683	676	628	616	
New autos (thsd, SAAR)	13.2	13.3	10.1	11.2	11.2	12.0	10.4	11.4	9.3	10.6	10.2	10.3	11.1	10.8	12.2	12.5	13.6	14.3	14.6	14.3	
Total loans/leases (Q/Q%)	1.9	2.2	0.4	0.5	3.1	2.1	2.3	2.4	1.5	1.5	2.6	1.7	1.1	0.8	1.2	2.4	2.8	2.9	4.0	3.2	
Consumer loans (Q/Q%)	1.6	1.2	-2.0	-1.7	-0.1	0.3	0.7	0.6	0.2	0.4	1.0	0.6	0.6	0.7	2.0	3.9	5.0	4.1	5.0	4.4	
Business loans (Q/Q%)	2.5	2.9	1.0	1.0	5.2	2.2	3.3	3.7	3.0	4.1	4.5	3.0	1.3	0.3	-0.2	2.1	2.3	3.3	5.1	3.1	
Real estate loans (Q/Q%)	3.6	3.1	1.9	1.4	2.1	1.9	2.2	2.1	1.8	2.1	2.1	1.1	0.7	1.3	1.7	2.9	3.1	3.2	3.6	3.1	
Federal funds rate*	13.6	15.0	12.7	9.8	15.9	16.6	17.8	17.6	13.6	14.2	14.5	11.0	9.3	8.7	8.8	9.5	9.4	9.7	10.6	11.4	
10-year treasury*	10.4	12.0	10.5	10.9	12.4	13.0	13.7	14.8	14.1	14.3	13.9	13.1	10.7	10.6	10.6	11.6	11.7	12.0	13.2	12.9	
30-year mortgage*	12.5	13.7	14.4	12.6	14.2	15.1	16.2	17.4	17.7	17.4	16.8	16.2	14.0	13.0	12.8	13.6	13.5	13.3	14.0	14.5	

### Weaker growth

### Higher rates\*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Census, Federal Reserve, Freddie Mac

### THE "AVERAGE" RECESSION

### Stronger growth



# TIMELINE HEATMAP 1990 recession

2	years	prior	to	reces	sion	start
			1.			

			2 years	prior to r	ecession	start		Peak	Rece	ssion			2 yea	ars after	recession	n end		
	Q4 1988	Q1 1989	Q2 1989	Q3 1989	Q4 1989	Q1 1990	Q2 1990	Q3 1990	Q4 1990	Q1 1991	Q2 1991	Q3 1991	Q4 1991	Q1 1992	Q2 1992	Q3 1992	Q4 1992	Q
Real gross domestic product (Q/Q % SAAR)	5.4	4.1	3.1	3.0	0.8	4.4	1.5	0.3	-3.6	-1.9	3.2	2.0	1.4	4.9	4.4	4.0	4.2	
Employment (Q/Q %)	0.8	0.8	0.5	0.3	0.5	0.7	0.3	-0.1	-0.4	-0.4	-0.4	0.0	0.0	0.0	0.3	0.2	0.4	
Unemployment rate*	5.3	5.2	5.2	5.2	5.4	5.3	5.3	5.7	6.1	6.6	6.8	6.9	7.1	7.4	7.6	7.6	7.4	
Personal income (Q/Q%)	2.0	2.3	1.0	1.3	1.6	2.2	1.6	1.2	0.5	0.8	1.3	1.1	1.6	2.7	1.7	1.1	1.2	
Consumer spend (Q/Q%)	2.2	1.6	1.8	1.6	1.2	2.3	1.2	1.7	0.6	0.1	1.4	1.2	0.7	2.5	1.3	1.7	1.9	
New homes (thsd, SAAR)	668	636	635	689	653	595	540	522	474	463	514	508	552	623	565	638	628	
New autos (thsd, SAAR)	15.7	15.0	15.2	15.6	13.5	15.1	14.2	14.1	13.3	12.4	12.4	12.9	12.5	12.8	13.1	13.0	13.6	
Total loans/leases (Q/Q%)	1.7	1.9	2.2	2.6	1.7	1.0	1.3	0.9	0.9	0.3	0.1	-0.8	0.1	0.0	-0.2	-0.4	0.3	
Consumer loans (Q/Q%)	1.7	1.3	1.3	1.3	1.4	1.0	-0.2	-0.6	0.6	-1.0	-0.4	-1.3	-0.8	-0.3	-1.0	-0.8	-0.5	
Business loans (Q/Q%)	1.2	1,9	1.5	1.9	0.7	-0.3	0.6	-0.1	-0.1	-0.6	-1.2	-1.2	-0.2	-1.5	-1.3	-0.7	-0.3	
Real estate loans (Q/Q%)	3.2	3.9	3.2	3.6	3.1	2.8	3.0	2.7	2.0	2.0	1.3	0.1	0.3	0.7	0.9	0.0	0.7	
Delinquency rate (all)*	4.7	4.9	5.0	5.1	4.9	5.0	5.1	5.4	6.0	6.1	6.2	6.0	5.8	5.6	5.4	5.2	4.9	
Federal funds rate*	8.5	9.4	9.7	9.1	8.6	8.3	8.2	8.2	7.7	6.4	5.9	5.6	4.8	4.0	3.8	3.3	3.0	
10-year treasury*	9.0	9.2	8.8	8.1	7.9	8.4	8.7	8.7	8.4	8.0	8.1	8.0	7.3	7.3	7.4	6.6	6.7	
30-year mortgage*	10.4	10.8	10.6	10.0	9.8	10.1	10.3	10.1	10.0	9.5	9.5	9.3	8.7	8.7	8.7	8.0	8.2	

### Weaker growth

Higher rates\*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Census, Federal Reserve, Freddie Mac

### THE "AVERAGE" RECESSION

### Stronger growth



# TIMELINE HEATMAP 2001 recession

			2 years	prior to	recessio	n start		Peak	F	Recessio	n			2 yea	rs after	recessio	n end		
	Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003	Q3 2003	(
Real gross domestic product (Q/Q % SAAR)	3.4	5.4	6.7	1.5	7.5	0.4	2.4	-1.3	2.5	-1.6	1.1	3.4	2.5	1.6	0.5	2.1	3.6	6.8	
Employment (Q/Q %)	0.6	0.6	0.7	0.6	0.6	0.2	0.2	0.2	-0.3	-0.3	-0.6	-0.3	-0.1	-0.1	0.0	-0.1	-0.2	0.0	
Unemployment rate*	4.3	4.2	4.1	4.0	3.9	4.0	3.9	4.2	4.4	4.8	5.5	5.7	5.8	5.7	5.9	5.9	6.1	6.1	
Personal income (Q/Q%)	0.7	1.3	2.0	2.6	1.7	1.9	1.2	1.6	0.2	2.2	-1.6	2.6	1.6	0.7	1.1	0.7	1.4	2.4	
Consumer spend (Q/Q%)	2.1	1.7	2.1	2.3	1.4	1.6	1.4	1.1	0.7	0.4	1.7	0.4	1.3	1.2	1.0	1.3	1.2	2.1	
New homes (thsd, SAAR)	910	873	869	876	830	882	932	946	892	866	925	917	957	1005	1026	978	1094	1168	
New autos (thsd, SAAR)	17.3	17.7	17.9	18.8	17.8	17.8	16.8	17.6	17.1	16.4	18.9	17.0	16.9	17.8	16.9	16.4	16.7	17.6	
Total loans/leases (Q/Q%)	1.1	1.4	2.7	3.2	3.3	2.4	1.3	1.4	0.8	-0.1	0.1	0.0	0.2	1.6	3.2	1.6	1.8	1.9	
Consumer loans (Q/Q%)	0.0	-0,4	0.8	2.8	2.5	2.5	2.1	1.6	1.1	0.4	0.8	0.8	0.9	1.6	3.1	0.0	0.4	1.4	
Business loans (Q/Q%)	0.7	2.2	2.6	2.2	3.4	2.0	1.0	1.1	-1.1	-2.0	-2.5	-1.9	-2.2	-2.0	-1.2	-1.8	-1.9	-1.6	
Real estate loans (Q/Q%)	1.4	2.3	4.4	4.7	4.4	3.1	1.2	1.5	2.2	0.8	1.8	1.7	1.8	4.0	5.9	4.3	3.2	3.8	
Delinquency rate (all)*	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.4	2.6	2.7	2.7	2.8	2.8	2.7	2.6	2.5	2.4	2.2	
Federal funds rate*	4.7	5.1	5.3	5.7	6.3	6.5	6.5	5.6	4.3	3.5	2.1	1.7	1.8	1.7	1.4	1.3	1.2	1.0	
10-year treasury*	5.5	5.9	6.1	6.5	6.2	5.9	5.6	5.0	5.3	5.0	4.8	5.1	5.1	4.3	4.0	3.9	3.6	4.2	
30-year mortgage*	7.2	7.8	7.8	8.3	8.3	8.0	7.6	7.0	7.1	7.0	6.8	7.0	6.8	6.3	6.1	5.8	5.5	6.0	

### Weaker growth

Higher rates\*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Census, Federal Reserve, Freddie Mac

### THE "AVERAGE" RECESSION

Stronger growth



# TIMELINE HEATMAP 2008 recession

2000 1 20251011		2 y	/ears pi	rior to r	ecessio	on start		Peak			Rece	ssion					2 year	s after	recessi	on end	
	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
Real gross domestic product (Q/Q % SAAR)	5.5	1.0	0.6	3.4	1.2	2.6	2.4	2.5	-1.6	2.3	-2.1	-8.5	-4.6	-0.7	1.5	4.3	2.0	3.9	3.1	2.1	-1.0
Employment (Q/Q %)	0.6	0.4	0.3	0.3	0.4	0.3	0.1	0.2	0.0	-0.3	-0.5	-1.2	-1.7	-1.4	-0.7	-0.4	-0.1	0.5	0.0	0.3	0.2
Unemployment rate*	4.7	4.6	4.6	4.4	4.5	4.5	4.7	4.8	5.0	5.3	6.0	6.9	8.3	9.3	9.6	9.9	9.8	9.6	9.5	9.5	9.0
Personal income (Q/Q%)	2.5	1.3	0.9	1.1	1.7	1.3	0.7	1.2	1.0	2.9	-1.0	-0.5	-0.9	0.9	-0.5	1.0	1.1	1.8	0.8	1.0	1.8
Consumer spend (Q/Q%)	1.6	1.4	1.4	0.8	1.5	1.1	1.2	1.4	0.7	1.3	0.3	-2.5	-0.9	-0.1	1.4	0.7	1.0	1.1	0.9	1.3	1.2
New homes(thsd, SAAR)	1117	1094	1005	981	851	841	721	662	585	509	448	386	349	369	405	374	354	336	294	301	292
New autos (thsd, SAAR)	17.4	16.9	17.0	16.9	16.8	16.5	16.2	16.3	15.4	14.6	13.4	10.6	9.6	9.9	12.0	11.0	11.0	11.7	12.0	12.4	13.0
Total loans (Q/Q%)	2.5	3.0	2.3	3.8	1.8	1.4	3.3	3.9	2.4	0.9	0.7	4.5	-1.1	-1.0	-2.8	-2.2	-1.9	4.8	-1.1	-0.6	-0.9
Consumer loans (Q/Q%)	0.0	2.0	-0.2	1.9	0.9	0.9	3.1	2.4	1.7	1.2	2.6	4.7	2.0	-2.8	-1.4	-1.1	0.0	36.9	-1.7	-1.7	-3.4
Business loans (Q/Q%)	3.4	4.1	3.8	2.3	2.8	3.4	5.5	6.3	4.2	2.7	1.7	3.6	-2.8	-4.2	-6.8	-5.7	-4.9	-2.1	-0.9	0.0	1.1
Real estate loans (Q/Q%)	2.6	3.0	2.4	6.4	1.7	0.5	1.9	3.1	1.4	0.5	-0.2	5.0	-0.2	1.1	-1.4	-0.8	-1.2	-0.8	-1.2	-0.9	-1.4
Delinquency rate (all)*	1.5	1.5	1.6	1.7	1.7	1.9	2.1	2.5	2.9	3.3	3.7	4.8	5.6	6.4	6.9	7.3	7.4	7.2	6.9	6.4	6.2
Federal funds rate*	4.5	4.9	5.2	5.2	5.3	5.3	5.1	4.5	3.2	2.1	1.9	0.5	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2
10-year treasury*	4.6	5.1	4.9	4.6	4.7	4.8	4.7	4.3	3.7	3.9	3.9	3.2	2.7	3.3	3.5	3.5	3.7	3.5	2.8	2.9	3.5
30-year mortgage*	6.2	6.6	6.6	6.2	6.2	6.4	6.6	6.2	5.9	6.1	6.3	5.8	5.1	5.0	5.2	4.9	5.0	4.9	4.4	4.4	4.8

### Weaker growth

### Higher rates\*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Census, Federal Reserve, Freddie Mac

### THE "AVERAGE" RECESSION

Stronger growth



# TIMELINE HEATMAP 2020 recession

			2 years	prior to r	ecession	start		Peak	Rece	ssion			2 yea	ars after	recessio	n end		
	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q4 2022	G
Real gross domestic product	2.8	2.8	2.9	0.7	2.2	2.7	3.6	1.8	-4.6	-29.9	35.3	3.9	6.3	7.0	2.7	7.0	-1.6	
Employment growth	0.4	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.1	-11.9	5,1	1.4	0.7	1.1	1.4	1.3	1.1	
Unemployment	4.0	3.9	3.8	3.8	3.9	3.6	3.6	3.6	3.8	13.0	8.8	6.8	6.2	5.9	5.1	4.2	3.8	
Disposable personal income	1.7	1.4	1.4	1.5	1.5	0.6	1.1	1.0	1.0	9.5	-3.3	-1.9	12.3	-6.7	0.2	0.2	-1.0	
Consumer spending	1.4	1.3	1.0	0.8	0.3	1.3	1.1	0.9	-1.2	-9.6	10.3	1.4	3.7	4.5	2.1	2.3	2.2	
New home sales	629	646	605	575	644	686	701	708	664	733	1012	921	838	747	730	760	763	
New auto sales	17.5	17.6	17.6	18.2	17.3	17.4	17.7	17.5	15.4	11.5	15.8	16.8	17.2	17.2	13.8	13.5	14.6	
Total loans and leases	0.9	1.5	1.0	1.3	1.5	1.0	1.2	1.2	1.9	5.8	-2.0	-1.6	-0.2	0.0	0.6	1.7	2.5	
Consumer loans	1.3	2.0	0.8	1.2	1.3	1.6	1.4	1.6	1.3	-4.5	-1.0	0.2	0.6	1.4	2.7	2.7	3.1	
Business loans (C&I)	0.3	2.9	1.7	2.9	2.4	0.1	1.2	0.2	2.4	22.3	-5.1	-6.0	-2.3	-2.0	-3.7	0.4	2.6	
Real estate loans	1.0	0.7	0.6	0.7	0.8	1.1	0.7	1.3	1.4	0.8	0.1	-0.6	0.0	-0.1	0.9	1.5	1.8	
Delinquency (all loans)	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.4	1.5	1.6	1.6	1.6	1.5	1.4	1.3	1.3	1.2	
Federal funds rate*	1.4	1.7	1.9	2.2	2.4	2.4	2.2	1.6	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
10-year treasury*	2.8	2.9	2.9	3.0	2.7	2.3	1.8	1.8	1.4	0.7	0.7	0.9	1.3	1.6	1.3	1.5	2.0	
30-year mortgage*	4.3	4.5	4.6	4.8	4.4	4.0	3.7	3.7	3.5	3.2	3.0	2.8	2.9	3.0	2.9	3.1	3.8	

### Weaker growth

Higher rates\*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Census, Federal Reserve, Freddie Mac

### THE "AVERAGE" RECESSION

Stronger growth



# A DEEPER DIVE INTO THE DATA Unemployment LABOR MARKET

When people lose their jobs, it reduces their ability to spend or access credit and increases their likelihood of delinquency. That's why the unemployment rate has remained front and center for the financial services industry and organizations that serve consumers. While there are other predictors of delinquency, the unemployment rate has historically served as a key indicator (chart 10).

The unemployment rate is one of the economic variables that does not peak during a recession, but after. In the last five downturns, unemployment peaked an average of 3 quarters after the recession ended. During that time, the unemployment rate rose an average of 4.3 pp, and took an average of 19 quarters (excluding the 2001 downturn as it did not recover before the next recession) to return to its pre-recession level (charts 11, 12). The greatest increase among the demographic groups was seen among 16 to 19-year-olds, Hispanics or Latinos, and men (charts 13, 14, 15). Unemployment for part-time workers tends to be less impacted by recessions than full-timers, with the one major exception being during the 2020 recession (chart 16). In terms of overall timing, initial claims, which measure when someone first files for unemployment benefits, tends to peak first, followed by continued claims, which measures when someone continues to file for benefits, and then by the overall unemployment rate.

### **CHART 10** Unemployment rate and credit card charge-off rate 14.0%



Source: Federal Reserve and Bureau of Labor Statistics

# **CHART 12**

### **Recession recovery: unemployment**



Source: Bureau of Labor Statistics and author's calculation

### A DEEPER DIVE INTO THE DATA

**CHART 11** 

### Increase (pp) in unemployment rate



Source: Bureau of Labor Statistics and author's calculation

# **CHART 13**

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### **CHART 14**



Source: Bureau of Labor Statistics and author's calculation

### **CHART 16 Unemployment for full-time workers**



Source: Bureau of Labor Statistics and author's calculation

### A DEEPER DIVE INTO THE DATA

### **CHART 15**

Source: Bureau of Labor Statistics and author's calculation

### **Unemployment for part-time workers**

ender	
2 (	



### **TIMELINE HEATMAP** 1981 recession

Unemployment	2 years prior to recession start									R	ecessio	n				2 year	s after ı	recessi	on end	
	Q4 1979	Q1 1980	Q2 1980	Q3 1980	Q4 1980	Q1 1981	Q2 1981	Q3 1981	Q4 1981	Q1 1982	Q2 1982	Q3 1982	Q4 1982	Q1 1983	Q2 1983	Q3 1983	Q4 1983	Q1 1984	Q2 1984	Q3 1984
Initial claims (in thsd)	415.6	422.9	586.6	523.8	419.6	416.2	419.6	451.3	516.5	541.3	589.6	618.5	594.9	490.8	471.5	416.8	387.5	345.4	363.5	382.8
Continued claims (in thsd)	2604.9	2846.7	3504.6	3783.2	3325.4	2976.9	2889.3	2948.2	3314.2	3577.8	3984.2	4258.4	4554.0	3854.0	3624.6	3107.6	2801.9	2476.7	2387.0	2394.5
Unemployment rate	6.0	6.3	7.3	7.7	7.4	7.4	7.4	7.4	8.2	8.8	9.4	9.9	10.7	10.4	10.1	9.4	8.5	7.9	7.4	7.4
Full-time workers	5.6	6.0	7.2	7.7	7.4	7.4	7.3	7.3	8.3	8.9	9.7	10.2	11.1	10.9	10.4	9.7	8.7	8.0	7.5	7.4
Part-time workers	7.6	7.6	7.7	7.5	7.4	7.8	7.9	8.1	8.0	8.4	8.3	8.6	8.7	8.3	8.5	7.9	7.8	7.5	7.4	7.6
Men	5.3	5.8	7.2	7.7	7.2	7.2	7.2	7.1	8.1	8.9	9.5	10.3	11.1	10.8	10.4	9.7	8.7	7.9	7.4	7.3
Women	6.8	6.9	7.4	7.6	7.6	7.7	7.7	7.8	8.4	8.8	9.3	9.5	10.1	9.9	9.6	8.9	8.3	7.8	7.6	7.6
16-19 year	16.2	16.5	17.9	18.7	18.1	19.2	19.2	19.0	20.9	22.2	22.8	23.8	24.0	23.1	23.4	22.5	20.5	19.5	18.7	18.9
20-24 year	9.5	10.1	12.0	12.3	12.0	11.8	12.3	12.0	13.0	13.9	14.5	15.1	16.1	15.9	15.0	14.0	13.0	12.0	11.3	11.5
25-54 year	4.3	4.7	5.6	6.0	5.7	5.6	5.5	5.7	6.5	7.0	7.6	8.2	8.9	8.7	8.4	7.7	7.0	6.4	6.0	6.0
55+ year	2.9	3.0	3.3	3.4	3.4	3.6	3.3	3.6	3.9	4.4	5.0	5.1	5.5	5.5	5.6	5.1	4.8	4.5	4.5	4.4
Black	12.1	12.9	14.3	14.9	15.1	14.8	15.1	15.7	16.9	17.7	18.4	19.1	20.4	20.4	20.5	19.3	17.8	16.7	15.9	15.9
Hispanic	9.0	8.9	10.2	11.0	10.3	10.7	9.9	9.9	11.2	12.0	13.5	14.5	15.3	15.5	14.4	12.8	12.0	11.1	10.8	10.5
White	5.2	5.5	6.5	6.8	6.5	6.6	6.5	6.4	7.2	7.8	8.3	8.8	9.5	9.2	8.8	8.1	7.4	6.8	6.4	6.4

Higher unemployment

### A DEEPER DIVE INTO THE DATA

Lower unemployment

Timelines of Recession and Recovery | Page 18



### TIMELINE HEATMAP 1990 recession

Unemployment			2 years	s prior to	recessio	on start		Peak	Rece	ssion			2 yea	rs after i	recessio	n end		
	Q4 1988	Q1 1989	Q2 1989	Q3 1989	Q4 1989	Q1 1990	Q2 1990	Q3 1990	Q4 1990	Q1 1991	Q2 1991	Q3 1991	Q4 1991	Q1 1992	Q2 1992	Q3 1992	Q4 1992	(
Initial claims (in thsd)	291.8	305.2	322.2	337.6	352.0	354.1	360.0	382.7	443.3	476.0	446.2	425.3	441.9	437.3	418.1	421.2	361.1	
Continued claims (in thsd)	2015.5	2102.1	2104.5	2197.9	2283.8	2358.0	2400.0	2530.8	2867.5	3269.1	3462.6	3298.0	3322.6	3325.7	3327.5	3226.1	2954.1	
Unemployment rate	5.3	5.2	5.2	5.2	5.4	5.3	5.3	5.7	6.1	6.6	6.8	6.9	7.1	7.4	7.6	7.6	7.4	
Full-time workers	5.2	5.0	5.1	5.1	5.1	5.1	5.2	5.5	6.0	6.5	6.8	6.9	7.1	7.4	7.6	7.7	7.4	
Part-time workers	6.0	6.0	6.1	6.1	6.4	6.2	6.2	6.6	6.5	6.8	7.0	6.9	7.2	7.3	7.4	7.6	7.7	
Men	5.3	5.2	5.1	5.2	5.3	5.3	5.3	5.8	6.3	6.9	7.2	7.2	7.4	7.9	8.0	8.0	7.7	
Women	5.3	5.2	5.4	5.4	5.4	5.3	5.3	5.6	5.8	6.2	6.4	6.4	6.7	6.8	7.1	7.2	7.0	
16-19 year	14.6	15.1	15.1	14.7	15.3	14.7	14.6	15.9	17.0	18.1	18.4	19.0	19.4	19.9	20.5	20.6	19.6	
20-24 year	8.6	8.5	8.3	8.7	8.8	8.5	8.7	8.9	9.3	10.2	10.7	10.9	11.5	11.3	11.4	11.4	11.3	
25-54 year	4.4	4.2	4.2	4.2	4.3	4.2	4.3	4.7	5.1	5.5	5.7	5.7	5.9	6.3	6.4	6.4	6.3	
55+ year	2.9	2.9	3.1	3.0	3.2	3.3	3.0	3.2	3.5	3.8	4.0	3.9	4.1	4.4	5.0	5.0	4.7	
Black	11.1	11.6	11.3	11.3	11.7	11.0	10.6	11.7	12.3	12.2	12.7	12.2	12.9	13.9	14.5	14.2	14.2	
Hispanic	7.8	7.4	8.1	8.6	8.1	7.4	8.0	8.2	9.1	9.4	10.0	10.3	10.4	11.2	11.6	11.7	11.8	
White	4.6	4.4	4.5	4.5	4.6	4.6	4.6	4.9	5.3	5.8	6.1	6.2	6.3	6.5	6.7	6.7	6.5	

Higher unemployment

### A DEEPER DIVE INTO THE DATA

Lower unemployment

Timelines of Recession and Recovery | Page 19



## TIMELINE HEATMAP 2001 recession

### U

Unemployment		2	2 years	prior to r	ecessio	n start		Peak	R	ecessio	n			2 yea	rs after	recessio	n end		
	Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003	Q3 2003	(
Initial claims (in thsd)	301.4	293.2	284.1	285.8	280.8	301.9	328.5	367.8	396.2	412.2	445.9	408.2	406.8	396.2	403.7	412.4	427.1	402.2	
Continued claims (in thsd)	2214.7	2179.6	2095.8	2111.9	2011.4	2106.8	2218.6	2496.6	2831.0	3147.2	3591.0	3574.8	3675.5	3524.7	3505.1	3470.0	3686.2	3596.2	
Unemployment rate	4.3	4.2	4.1	4.0	3.9	4.0	3.9	4.2	4.4	4.8	5.5	5.7	5.8	5.7	5.9	5.9	6.1	6.1	
Underemployment rate	7.5	7.4	7.2	7.1	7.0	7.0	6.9	7.3	7.6	8.3	9.4	9.4	9.6	9.6	9.7	10.0	10.2	10.3	
Full-time workers	4.1	4.1	3.9	3.9	3.8	3.9	3.8	4.1	4.3	4.8	5.5	5.8	6.0	5.8	6.0	6.0	6.3	6.2	
Part-time workers	5.1	4.8	4.9	4.9	4.8	4.9	4.5	4.9	5.0	5.0	5.5	5.1	5.2	5.4	5.2	5.5	5.6	5.6	
Men	4.2	4.1	4.0	3.9	3.8	3.9	3.9	4.3	4.5	4.8	5.6	5.8	5.9	5.9	6.0	6.1	6.5	6.4	
Women	4.4	4.4	4.1	4.2	4.1	4.2	3.9	4.2	4.3	4.8	5.4	5.5	5.7	5.6	5.6	5.6	5.8	5.8	
16-19 year	13.8	13.8	13.7	13.3	12.6	13.5	13.0	13.8	13.9	15.1	16.3	16.4	16.6	16.7	16.3	17.4	18.2	17.5	
20-24 year	7.5	7.5	7.5	7.5	7.6	6.7	6.8	7.4	8.1	8.4	9.4	9.9	9.4	9.5	9.8	9.4	10.4	10.4	
25-54 year	3.2	3.2	3.1	3.1	3.0	3.1	3.0	3.3	3.5	3.9	4.5	4.7	4.9	4.7	4.9	4.9	5.1	5.1	
55+ year	2.9	2.8	2.6	2.7	2.4	2.6	2.7	2.7	2.6	3.1	3.6	3.7	4.0	3.8	3.9	4.0	4.3	4.1	
Black	7.6	8.3	8.1	7.9	7.5	7.6	7.3	8.1	8.1	8.7	9.8	10.1	10.5	9.8	10.6	10.5	11.1	11.0	
Hispanic	6.8	6.6	6.1	5.8	5.6	5.8	5.6	6.0	6.4	6.5	7.4	7.4	7.5	7.4	7.9	7.8	8.0	7.7	
White	3.8	3.7	3.5	3.5	3.4	3.5	3.5	3.7	3.9	4.2	4.9	5.0	5.1	5.1	5.1	5.1	5.4	5.4	

Higher unemployment

### A DEEPER DIVE INTO THE DATA

Lower unemployment



# **TIMELINE HEATMAP**

Unemployment		2 y	vears pr	rior to r	ecessio	on start	t	Peak			Rece	ssion					2 year	s after	recessi	on end	
	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
Initial claims (in thsd)	296.1	313.2	316.6	322.1	315.9	313.4	315.4	338.3	350.7	369.6	431.8	519.7	621.0	612.6	557.8	503.5	478.7	462.7	462.3	432.3	412.6
Continued claims (in thsd)	2506.6	2398.0	2453.1	2468.8	2536.1	2475.8	2543.6	2636.5	2856.6	3011.9	3360.2	4115.1	5273.6	6423.3	6056.5	5479.8	4792.1	4663.0	4489.2	4230.7	3850.1
Unemployment rate	4.7	4.6	4.6	4.4	4.5	4.5	4.7	4.8	5.0	5.3	6.0	6.9	8.3	9.3	9.6	9.9	9.8	9.6	9.5	9.5	9.0
Underemployment rate	8.3	8.2	8.3	8.1	8.1	8.2	8.4	8.6	9.1	9.6	10.8	12.7	15.0	16.3	16.6	17.1	16.9	16.8	16.6	16.7	16.0
Full-time workers	4.7	4.6	4.5	4.4	4.5	4.4	4.6	4.7	4.9	5.3	6.1	7.1	8.9	10.0	10.4	10.8	10.7	10.4	10.2	10.3	9.7
Part-time workers	5.0	5.2	5.2	4.9	4.8	4.8	4.8	5.2	5.2	5.2	5.7	5.8	5.8	5.9	6.3	6.0	6.5	6.5	6.4	6.1	6.4
Men	4.7	4.7	4.6	4.5	4.6	4.6	4.7	4.9	5.1	5.5	6.4	7.5	9.2	10.4	10.7	11.0	10.9	10.6	10.3	10.2	9.6
Women	4.8	4.6	4.7	4.4	4.4	4.4	4.6	4.7	4.8	5.1	5.6	6.2	7.3	8.0	8.4	8.7	8.6	8.6	8.6	8.7	8.5
16-19 year	15.5	14.8	16.0	<mark>14.9</mark>	14.9	<mark>16.0</mark>	15.7	16.1	16.8	18.1	19.5	20.3	21.7	23.4	25.0	26.9	26.0	25.9	25.7	25.8	24.7
20-24 year	8.2	8.0	8.2	8.3	7.8	7.6	8.5	8.7	9.1	9.6	10.6	11.5	13.2	14.8	15.2	15.8	15.8	15.7	15.0	15.5	15.2
25-54 year	3.9	3.8	3.8	3.5	3.7	3.6	3.8	3.9	4.0	4.4	5.0	5.9	7.4	8.3	8.7	8.9	8.8	8.6	8.5	8.5	8.0
55+ year	2.9	3.0	3.0	3.0	3.2	3.1	3.2	3.1	3.3	3.2	4.0	4.8	5.8	6.7	6.8	7.0	7.0	7.0	7.1	7.1	6.6
Black	9.3	9.0	9.1	8.4	8.1	8.4	7.9	8.7	8.9	9.2	10.6	11.7	13.4	14.9	15.0	15.9	16.5	15.8	15.8	15.8	15.7
Hispanic	5.4	5.2	5.3	5.0	5.2	5.6	5.8	6.0	6.5	7.2	7.8	9.0	11.0	11.9	12.7	12.7	12.8	12.3	12.2	12.7	11.9
White	4.1	4.1	4.0	3.9	4.0	4.0	4.2	4.2	4.4	4.7	5.3	6.3	7.6	8.4	8.8	9.1	8.9	8.8	8.6	8.7	8.1
Asian	3.3	3.4	2.8	2.8	3.0	3.1	3.2	3.7	3.3	3.8	4.1	4.6	6.5	7.2	7.7	7.7	8.1	7.3	7.3	7.3	6.9

Higher unemployment

### A DEEPER DIVE INTO THE DATA

Lower unemployment

Timelines of Recession and Recovery | Page 21



## TIMELINE HEATMAP 2020 recession

Unemployment Q1 2018 Q2 2018			2 years	s prior to	recessio	on start	1	Peak	Rece	ession	]		2 yea	ars after	recessi	on end		
	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q
Initial claims (in thsd)	227.2	221.8	207.5	221.2	222.0	219.1	205.4	223.5	867.6	2729.3	1042.5	794.5	756.6	488.0	352.2	248.7	226.7	
Continued claims (in thsd)	1964.8	1763.8	1602.1	1681.5	1851.9	1688.8	1543.8	1709.5	2457.9	18498.0	14124.3	6514.5	4488.5	3562.8	2682.3	2054.0	1722.5	
Unemployment rate	4.0	3.9	3.8	3.8	3.9	3.6	3.6	3.6	3.8	13.0	8.8	6.8	6.2	5.9	5.1	4.2	3.8	
Underemployment rate	8.0	7.8	7.5	7.6	7.5	7.3	7.0	6.9	7.6	20.7	14.5	11.9	11.0	10.1	8.8	7.7	7.1	
Full-time workers	3.9	3.8	3.7	3.7	3.8	3.5	3.5	3.5	3.7	11.7	8.6	6.8	6.3	6.0	5.2	4.2	3.7	
Part-time workers	4.5	4.2	4.4	4.6	4.2	4.2	4.2	3.9	4.5	19.6	10.0	6.6	6.0	5.4	4.8	4.3	4.2	
Men	4.0	4.1	3.8	3.9	3.9	3.7	3.7	3.6	3.8	12.0	8.5	6.9	6.3	6.1	5.3	4.2	3.9	
Women	4.0	3.8	3.8	3.8	3.8	3.6	3.6	3.6	3.8	14.1	9.1	6.6	6.1	5.7	4.9	4.2	3.8	
16-19 year	13.8	12.8	12.7	12.4	13.1	12.8	12.5	12.3	12.6	28.4	17.3	14.5	13.8	10.9	11.0	11.2	10.4	
20-24 year	6.9	7.0	6.8	7.1	7.3	6.4	6.6	6.5	7.2	22.6	14.8	11.0	9.9	9.9	8.7	7.2	7.4	
25-54 year	3.4	3.3	3.1	3.2	3.2	3.0	3.0	3.1	3.2	11.3	7.9	6.1	5.6	5.4	4.7	3.8	3.3	
55+ year	3.1	2.9	3.0	2.9	2.8	2.7	2.6	2.6	2.8	11.6	7.7	5.8	5.0	4.9	3.9	3.2	2.9	
Black	7.0	6.2	6.3	6.4	6.8	6.2	5.5	5.7	6.4	16.3	13.1	10.4	9.5	9.4	8.2	7.1	6.6	
Hispanic	4.9	4.7	4.6	4.5	4.5	4.1	4.2	4.2	4.9	17.0	11.3	8.9	8.2	7.3	6.2	5.2	4.5	
White	3.5	3.5	3.4	3.4	3.3	3.2	3.3	3.2	3.3	12.1	7.9	6.0	5.6	5.2	4.5	3.7	3.3	
Asian	3.0	2.7	3.3	3.0	3.1	2.2	2.8	2.6	3.3	14.3	10.6	6.7	5.9	5.7	4.7	3.8	3.1	

Higher unemployment

### A DEEPER DIVE INTO THE DATA

Lower unemployment



# A DEEPER DIVE INTO THE DATA LABOR MARKET

Similar to the unemployment rate, the level of nonfarm employment is a vital determinate for the health of the labor market and economy. Industry employment, especially, can provide a view into how state- or regional-level economies may perform during downturns as some areas have high levels of industry concentration.

In the prior five recessions, the labor market lost an average of 3.9% of all nonfarm jobs (charts 17, 18), with the largest impact falling on the goods-producing industries of manufacturing, mining and logging, and construction, which declined on average by -11.5%, -14.5%, and -11.8%, respectively (chart 19). The industries that have fared the best are education and health services (+0.5%) — the only industry that tend to grow during recessions — government (-0.6%) and financial activities (-1.9%). Overall, job losses take an average of 14 quarters to recover, with some industries failing to recover at all (charts 20, 21).

While the goods-producing sectors have historically borne the brunt of recession job losses, longer run shifts are also to blame. As the United States has moved to a service-based economy, the composition of jobs has shifted in tandem. Employment in goods-producing industries sits 13% lower than it did in 1980, while government employment has risen by 40%, and jobs in the service sector have more than doubled over the same time period (chart 22).

### Total nonfarm jobs and industry employment

# CHART 17





Source: Bureau of Labor Statistics and author's calculation

# **CHART 18**

### Total nonfarm payrolls: average quarterly growth



Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation

### A DEEPER DIVE INTO THE DATA

### **CHART 19**

	Larger decline than national average	National aver	age Smalle	r decline than nationa average	Gro	owth		
age excl COVID-19)	Peak impact % change	1981 recession	1990 recession	2001 recession	2008 recession	2020 recession	Avg % change	Avg (ex
	Total nonfarm payrolls	-3.0	-1.2	-1.9	-6.1	-11.8	-4.8	
8.1%	Leisure and hospitality	-0.2	-0.7	-0.6	-4.4	-39.5	-9.1	
	Financial activities	0.8	-1.6	0.9		-2.3	-1.9	
	Professional and business services	0.4	-1.9	-5.2	-8.8	-9.4	-5.0	
	Education and health services	2.3	2.6	3.0	3.7	-8.9	0.5	
	Construction	-7.8	-12.5	-2.4	-27.6	-8.5	-11.8	
	Manufacturing	~10.9	-5.1	-16.1	-16.7	-8.7	-11.5	
	Trade, transportation and utilities	-1.7	-2.5	-3.9	-8.1	-9.2	-5.1	
0.1%0.8%	Information	-5.0	-2.2	-15.2	-12.1	-9.0	-8.7	
5%	Government	-1.2	-0.2	2.0	1.3	-5.0	-0.6	
	Mining and logging	-20.0	-13.9	-6.2	-9.8	-22.4	-14.5	
age excl	Other services	2.1	-1.2	2.2	-3.2	-19.0	-3.8	

2020

Source: Bureau of Labor Statistics and author's calculations



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### **CHART 20**



**Recession to recovery: nonfarm payrolls** 

Source: Bureau of Labor Statistics and author's calculation

# CHART 22

### Nonfarm payrolls: services versus goods versus government



Source: Bureau of Labor Statistics and author's calculation

# CHART 21

### **Quarters from prerecession peak to recovery**

	1981 recession	1990 recession	2001 recession	2008 recession	2020 recession	Avg qtrs to recovery	/ (e
Total nonfarm payrolls	9	10	16	26	10	14	
Leisure and hospitality	3	6	7	17	TBD		
Financial activities	0	10	0	35	7	10	
Professional and business services	D	7	17	20	7	10	
Education and health services	0	O	O	0	11	2	
Construction	10	19	12	47	8	19	
Manufacturing	DNR	DNR	DNR	DNR	8		
Trade, transportation and utilities	8	14	22	29	7	16	
Information	8	14	DNR	DNR	7		
Government	11	2	O	0	TBD		
Mining and logging	DNR	DNR	16	12	TBD	1	
Other services	0	9	0	24	TBD		
Si Did not recover (DNR)	ower than national average or to be determined (TBD)	National av	verage	Faster than national average	No recove (Continued	ry needed d to grow)	

Source: Bureau of Labor Statistics and author's calculations

2022





# TIMELINE HEATMAP **1981 recession**

### Employment growth:

2 year	s prior	to rece	ssion st	tart		Peak		R	ecessio	n				2 year	s after	recessi	on end	
Q1 1980	Q2 1980	Q3 1980	Q4 1980	Q1 1981	Q2 1981	Q3 1981	Q4 1981	Q1 1982	Q2 1982	Q3 1982	Q4 1982	Q1 1983	Q2 1983	Q3 1983	Q4 1983	Q1 1984	Q2 1984	Q3 1984
0.3	-0.5	-0.4	0.8	0.4	0.3	0.2	-0.4	-0.7	-0.5	-0.8	-0.6	0.2	0.8	1.0	1.4	1.3	1.1	1.0
0.6	-0.4	0.1	0.6	0.8	0.7	0.3	-0.2	-0.1	0.3	0.2	0.0	0.7	1.1	1.6	1.4	1.6	1.2	1.2
1.1	0.7	0.7	0.9	0.8	0.6	0.4	0.1	0.2	0.2	0.2	0.2	0.6	0.9	1.2	1.0	1.0	0.9	1.0
1.0	0.3	0.6	1.1	0.9	0.7	0.7	0.4	0.1	-0.1	0.0	0.0	0.5	1.3	1.5	1.2	1.3	1.4	1.1
1.3	0.9	1.0	1.2	1.1	0.8	0.8	0.9	0.5	0.2	0.3	0.4	0.7	1.4	1.6	1.2	1.3	1.5	1.2
-0.6	-3.5	-1.3	0.8	-0.8	-0.4	-1.8	-1.6	-2.5	-0.8	-2.2	-0.9	0.8	-0.1	3.2	2.8	3.7	2.1	2.0
-0.5	-2.6	-1.9	1.1	0.3	0.7	0.0	-1.9	-2.4	-2.2	-2.3	-2.4	-0.3	1.0	1.6	1.9	1.5	1.1	0.6
0.3	-0.7	-0.2	0.4	0.6	0.5	0.2	-0.4	-0.4	-0.1	-0.3	-0.5	0.2	0.8	1.2	1.3	1.6	1.1	1.2
0.0	-1.1	-1.5	1.3	0.6	0.5	0.3	-0.6	-1.0	-1.0	-1.2	-1.1	-0.4	0.7	-7.6	10.5	1.4	1.0	0.7
0.5	1.5	-0.6	0.0	-0.3	-0.8	-0.6	-0.2	-0.3	-0.1	-0.6	0.4	0.2	0.0	0.1	-0.2	0.2	0.5	0.7
1.5	2.3	0.2	3.4	3.4	-5.6	13.5	1.8	-0.4	-3.4	-6.1	-5.7	-5.3	-2.6	0.4	1.4	0.6	0.8	0.8
1.3	0.8	1.0	1.2	1.1	0.8	0.8	0.8	0.5	0.2	0.3	0.3	0.7	1.4	1.6	1.2	1.3	1.5	1.2

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Employment growth:		2 year	's prior	to rece	ssion s	tart		Peak		R	ecessio	on				2 year	's after	recessi	on end	
Quarter-over-quarter % change	Q4 1979	Q1 1980	Q2 1980	Q3 1980	Q4 1980	Q1 1981	Q2 1981	Q3 1981	Q4 1981	Q1 1982	Q2 1982	Q3 1982	Q4 1982	Q1 1983	Q2 1983	Q3 1983	Q4 1983	Q1 1984	Q2 1984	Q3 1984
Total	0.3	0.3	-0.5	-0.4	0.8	0.4	0.3	0.2	-0.4	-0.7	-0.5	-0.8	-0.6	0.2	0.8	1.0	1.4	1.3	1.1	1.0
Leisure and hospitality	1.0	0.6	-0.4	0.1	0.6	0.8	0.7	0.3	-0.2	-0.1	0.3	0.2	0.0	0.7	1.1	1.6	1.4	1.6	1.2	1.2
Financial activities	0.9	1.1	0.7	0.7	0.9	0.8	0.6	0.4	0.1	0.2	0.2	0.2	0.2	0.6	0.9	1.2	1.0	1.0	0.9	1.0
Professional and business services	0.8	1.0	0.3	0.6	1.1	0.9	0.7	0.7	0.4	0.1	-0.1	0.0	0.0	0.5	1.3	1.5	1.2	1.3	1.4	1.1
Education and health services	1.1	1.3	0.9	1.0	1.2	1.1	0.8	0.8	0.9	0.5	0.2	0.3	0.4	0.7	1.4	1.6	1.2	1.3	1.5	1.2
Construction	-0.1	-0.6	-3.5	-1.3	0.8	-0.8	-0.4	-1.8	-1.6	-2.5	-0.8	-2.2	-0.9	0.8	-0.1	3.2	2.8	3.7	2.1	2.0
Manufacturing	-0.7	-0.5	-2.6	-1.9	1.1	0.3	0.7	0.0	-1.9	-2.4	-2.2	-2.3	-2.4	-0.3	1.0	1.6	1.9	1.5	1.1	0.6
Trade, transportation and utilities	0.8	0.3	-0.7	-0.2	0.4	0.6	0.5	0.2	-0.4	-0.4	-0.1	-0.3	-0.5	0.2	0.8	1.2	1.3	1.6	1.1	1.2
Information	0.2	0.0	-1.1	-1.5	1.3	0.6	0.5	0.3	-0.6	-1.0	-1.0	-1.2	-1.1	-0.4	0.7	-7.6	10.5	1.4	1.0	0.7
Government	0.0	0.5	1.5	-0.6	0.0	-0.3	-0.8	-0.6	-0.2	-0.3	-0.1	-0.6	0.4	0.2	0.0	0.1	-0.2	0.2	0.5	0.7
Mining and logging	1.5	1.5	2.3	0.2	3.4	3.4	-5.6	13.5	1.8	-0.4	-3.4	-6.1	-5.7	-5.3	-2.6	0.4	1.4	0.6	0.8	0.8
Other services	1.1	1.3	0.8	1.0	1.2	1.1	0.8	0.8	0.8	0.5	0.2	0.3	0.3	0.7	1.4	1.6	1.2	1.3	1.5	1.2

Weaker growth





## TIMELINE HEATMAP **1990 recession**

### Employment growth:

Quarter-over-quarter % change

Total
Leisure and hospitality
Financial activities
Professional and business services
Education and health services
Construction
Manufacturing
Trade, transportation and utilities
Information
Government
Mining and logging
Other services

	2 years	prior to ı	recessio	n start			Peak	Rece	ssion			2 yea	rs after	recessio	n end		
Q4 1988	Q1 1989	Q2 1989	Q3 1989	Q4 1989	Q1 1990	Q2 1990	Q3 1990	Q4 1990	Q1 1991	Q2 1991	Q3 1991	Q4 1991	Q1 1992	Q2 1992	Q3 1992	Q4 1992	(
0.8	0.8	0.5	0.3	0.5	0.7	0.3	-0.1	-0.4	-0.4	-0.4	0.0	0.0	0.0	0.3	0.2	0.4	
2.2	1.8	-0.8	-1.0	3.1	1.0	-0.4	0.3	-0.1	-0.1	-0.5	0.0	0.5	0.7	0.5	0.8	0.9	
0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2	-0.3	-0.1	-0.5	-0.4	-0.2	-0.1	0.3	0.3	0.6	
1.3	1.4	0.9	0.6	0.9	1.5	0.4	0.0	-0.8	-0.5	-0.6	0.3	0.4	0.5	1.1	0.8	1.2	
0.8	1.0	1.8	1.7	0.0	0.3	1.2	1.3	1.1	1.4	1.0	1.0	1.0	0.8	0.6	0.8	0.7	
0.0	0.1	0.4	0.5	0.3	1.3	-1.5	-1.7	-2.7	-3.2	-2.4	-1.5	-1.6	-0.6	-0.8	-0.4	0.7	
0.5	0.3	-0.1	-0.4	-0.4	-0.2	-0.3	-0.9	-1.1	-1.4	-0.9	-0.3	-0.3	-0.8	0.0	-0.3	-0.2	
0.4	0.8	0.6	0.3	-0.1	0.7	0.0	-0.2	-0.2	-0.7	-0.8	-0.1	-0.2	-0.2	0.0	-0.2	0.1	
0.9	0.3	0.6	-2.3	2.2	1.4	0.5	0.2	-0.1	0.0	-0.3	-0.4	-0.5	-0.7	-0.1	-0.1	0.5	
0.9	0.5	0.4	0.5	0.5	0.8	1.7	-0.1	-0.2	0.1	0.2	0.3	0.3	0.4	0.3	0.5	0.0	
-1.3	-0.8	-0.3	-0.1	1.5	0.6	0.9	-0.4	-0.6	-0.3	-1.4	-2.0	-2.5	-1.8	-1.3	-2.0	-0.4	
1.5	1.3	1.2	0.9	1.1	1.3	0.6	0.1	0.2	-0.2	-0.4	-0.2	-0.1	-0.5	0.2	0.5	0.8	

Weaker growth





# TIMELINE HEATMAP 2001 recession

### Employment growth:

Quarter-over-quarter % change

Total
Leisure and hospitality
Financial activities
Professional and business services
Education and health services
Construction
Manufacturing
Trade, transportation and utilities
Information
Government
Mining and logging
Other services

	2 ye	ears prio	or to rec	ession s	tart		Peak	F	Recessio	n			2 yea	rs after	recessio	on end		
Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003	Q3 2003	
0.6	0.6	0.7	0.6	0.6	0.2	0.2	0.2	-0.3	-0.3	-0.6	-0.3	-0.1	-0.1	0.0	-0.1	-0.2	0.0	
0.8	0.5	0.9	0.5	0.9	0.7	0.1	0.5	0.6	0.2	-0.8	-0.1	-0.5	0.2	1.3	0.3	-0.3	0.6	
0.4	0.4	0.0	0.0	-0.1	0.2	0.6	0.5	0.4	0.1	0.3	0.0	0.0	0.2	0.6	0.4	0.6	0.2	
1.3	1.2	1.5	1.2	0.9	0.7	0.5	-0.1	-1.3	-1.1	-1.7	-0.7	0.0	-0.4	-0.2	0.0	0.0	0.5	
0.6	0.4	0.6	0.4	0.5	0.7	0.8	1.0	1.0	1.1	0.9	0.9	0.9	0.9	0.5	0.7	0.7	0.3	
1.9	1.2	1.3	1.3	0.2	0.3	0.1	0.5	0.0	-0.2	-0.5	-0.4	-1.0	0.0	0.1	-0.4	0.5	0.8	
-0.4	-0.2	-0.1	0.1	0.0	-0.1	-0.5	-1.0	-2.1	-2.5	-2.5	-2.0	-1.1	-1.0	-1.3	-1.3	-1.6	-1.2	
0.7	0.6	0.6	0.5	0.3	0.1	0.2	-0.2	-0.7	-0.5	-0.8	-0.6	-0.1	-0.2	-0.2	-0.3	-0.3	-0.1	
1.8	2.0	1.8	1.6	1.4	0.5	1.4	0.7	-1.4	-1.8	-1.7	-1.8	-1.6	-1.5	-1.3	-2.5	-1.4	-0.9	
0.6	0.6	0.6	0.7	1,5	-0.6	-0.2	0.6	0.8	0.8	0.5	0.4	0.5	0.3	0.1	0.2	-0.1	-0.1	
-2.3	-0.6	-0.1	-0.1	0.8	0.9	0.3	0.4	0.4	-0.2	-1.3	-0.9	-1.9	-1.2	0.0	-0.5	-0.8	0.2	
0.5	0.5	0.6	0.5	0.1	0.3	0.4	0.2	0.7	0.9	0.7	0.7	0.2	0.1	0.5	0.0	-0.1	0.1	

Weaker growth





# TIMELINE HEATMAP 2008 recession

### Employment growth:

Quarter-over-quarter % change

Total
Leisure and hospitality
Financial activities
Professional and business services
Education and health services
Construction
Manufacturing
Trade, transportation and utilities
Information
Government
Mining and logging
Other services

	2 ye	ears pr	ior to r	ecessi	on star	t	Peak			Rece	ssion					2 years	s after	recessi	on end	
Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
0.6	0.4	0.3	0.3	0.4	0.3	0.1	0.2	0.0	-0.3	-0.5	-1.2	-1.7	-1.4	-0.7	-0.4	-0.1	0.5	0.0	0.3	0.2
0.9	0.6	0.6	0.8	0.8	0.3	0.3	0.7	0.1	-0.3	-0.5	-0.9	-0.9	-0.8	-0.2	-0.6	-0.3	0.6	0.6	0.4	0.4
0.7	0.5	0.1	0.2	0.0	-0.2	-0.3	-0.6	-0.3	-0.3	-0.6	-1.2	-1.6	-1.6	-0.8	-0.4	-0.4	-0.3	-0.3	0.1	0.0
1.0	0.9	0.7	0.4	0.8	0.4	0.2	0.3	-0.1	-0.6	-1.0	-1.9	-2.7	-2.2	-0.7	0.4	0.3	0.8	0.7	1.1	1.0
0.8	0.5	0.5	0.8	0.7	0.8	0.8	0.7	0.7	0.8	0.8	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.3	0.5	0.3
1.9	0.8	0.1	-0.5	0.1	0.0	-0.9	-1.2	-1.1	-2.3	-2.3	-3.9	-5.7	-5.4	-3.8	-2.9	-2.6	-0.2	-0.3	-0.3	-0.8
0.1	0.0	-0.4	-0.8	-0.4	-0.5	-0.7	-0.6	-0.5	-1.0	-1.5	-2.6	-4.8	-4.1	-2.1	-1.0	-0.5	0.6	0.3	0.2	0.6
0.3	0.1	0.2	0.4	0.5	0.3	0.1	0.2	-0.1	-0.8	-0.9	-1.6	-1.9	-1.5	-0.8	-0.8	-0.1	0.2	0.2	0.4	0.4
0.0	-0.4	-0.3	-0.1	0.1	0.2	-0.2	-0.2	-0.1	-0.5	-1.1	-1.4	-1.8	-2.3	-1.4	-0.6	-0.8	-0.9	-0.3	-0.4	-0.5
0.1	0.2	0.5	0.3	0.2	0.3	0.2	0.5	0.4	0.3	0.3	0.0	0.1	0.2	-0.5	0.0	-0.1	1.2	-1.6	-0.6	-0.3
2.5	3.0	1.5	1.3	1.3	1.5	0.8	0.9	2.1	1.5	2.1	-0.1	-3.9	-6.7	-3.7	-1.2	2.0	2.9	3.0	2.6	1.3
0.5	0.1	0.1	0.4	0.3	0.4	0.0	0.2	0.5	0.0	-0.3	-0.7	-1.3	-0.7	-0.2	-0.6	-0.1	0.0	0.0	0.4	-0.3

Weaker growth

### A DEEPER DIVE INTO THE DATA

Stronger growth

Timelines of Recession and Recovery | Page 29



## TIMELINE HEATMAP 2020 recession

Employment growth:		2 year	s prior to	o recessi	ion start			Peak	Reco	ession			2 ye	ars after	recessi	on end		
Quarter-over-quarter % change	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q4 2022	Q4
Total	0.4	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.1	-11.9	5.1	1.4	0.7	1.1	1.4	1.3	1.1	
Leisure and hospitality	0.4	0.2	0.4	0.3	0.8	0.0	0.4	1.0	-0.5	-39.2	24.4	4.0	0.1	5.1	5.5	3.7	2.7	
Financial activities	0.4	0.5	0.5	0.4	0.4	0.6	0.5	0.4	0.5	-2.8	0.5	0.7	0.2	0.3	0.7	0.9	0.7	
Professional and business services	0.6	0.7	0.5	0.3	0.2	0.6	0.4	0.1	-0.1	-9.3	3.4	2.4	1.9	0.9	1.7	2.1	1.6	
Education and health services	0.6	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.4	-9.3	3.9	1.1	0.5	0.7	0.4	0.6	0.5	
Construction	1.3	1.4	1.2	0.6	0.3	1.0	0.7	0.1	0.4	-8.9	4.7	1.4	0.3	0.7	0.5	1.6	1.2	
Manufacturing	0.6	0.6	0.5	0.4	0.4	-0.1	0.0	-0.2	-0.2	-8.5	3.2	0.9	0.6	0.2	1.1	1.2	1.0	
Trade, transportation and utilities	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.1	-9.2	5.4	2.0	1.0	0.6	0.9	1.3	1.4	
Information	0.2	0.6	0.0	0.4	-0.2	0.4	0.4	0.5	0.7	-9.6	1.1	1.9	2.1	2.0	2,8	2.0	1.5	
Government	0.1	0.2	0.0	0.1	0.3	0.2	0.1	0.5	0.6	-5.5	1.1	-0.5	0.5	0.6	0.5	-0.1	0.1	
Mining and logging	2.2	2.7	1.4	0.6	0.3	-0.9	-1.9	-2.1	-3.3	-12.6	-5.9	-1.2	-1.3	1.6	1.0	1.8	1.8	
Other services	0.2	0.4	0.0	0.2	0.3	0.5	0.2	0.1	0.0	-19.1	10.5	1.0	-0.1	1.3	2.1	1.4	0.9	
	- L <sup>20</sup>																	

Weaker growth





# A DEEPER DIVE INTO THE DATA

# LENDING ACTIVITY

# estate loans

In times of stress, financial institutions begin to tighten lending standards while consumers and businesses take more precautionary measures to protect their finances. This two-sided relationship results in fewer loans being made and an overall softening of lending activity around periods of recession (charts 23, 24). Because of the key role that credit serves in the economy, weaker lending activity can also drive a slowdown and elongate a recession — such as what occurred after the Great Recession of 2008.

In the prior five recessions, quarterly credit growth slowed from 1.9% in the two years lead up to the recession to -0.1% in the year following a recession (chart 25, 26). Lending activity tends to slow the most for consumer loans during recessions, while it slows the most for business loans and real estate loans in the year after (charts 27, 28, 29, 30).

### Credit growth for consumer loans, business loans, and real

### **CHART 23**

Credit tightening and demand



Source: Federal Reserve Senior Loan Officer opinion survey

# **CHART 25**

### Average quarterly growth across loan types surrounding periods of recession Total loans and leases, commercial banks: average quarterly growth 4.0% 4.0% 2.8% 3.0% 3.0% 2.4% 2.2% 2.1% 1.9% 1.9% 2.0% 2.0% 1.5% .5% 1.4% 1.4% 1.2% 1.0% 1.0% 1.0% 0.7% 0.4% 0.0% 0.0% -0.1% -0.1% -1.0% -1.0% -2.0% -2.0% -2.1% -3.0% -3.0% 1981 recession 1990 recession 2001 recession 2008 recession 2020 recession Average excl Average C&I (Business) loans Total loans and leases Consumer loans Real estate loans 2020 Prerecession (2 years) Recession 1st year postrecession 2nd year postrecession Prerecession (2 years) 2nd year postrecession Recession 1st year postrecession



Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation

### A DEEPER DIVE INTO THE DATA

### **CHART 24**

### Total loans and leases and real GDP: 12-month % change

Source: Federal Reserve H.8 (data retrieved June 2023) and Bureau of Economic Analysis

# **CHART 26**

Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation

Timelines of Recession and Recovery | Page 32



### 2023





### **CHART 27**

### Consumer loans, commercial banks: average quarterly growth



Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation

# **CHART 29**

### Real estate, commercial banks: average quarterly growth



Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation

### A DEEPER DIVE INTO THE DATA

### **CHART 28**

### Commercial and industrial loans, commercial banks: average quarterly growth

Source: Federal Reserve H.8 (data retrieved June 2023) and author's calculation

## **CHART 30**

### Recessionary change in lending (prerecession peak to 2 years after recession ends)

Source: Federal Reserve Board of Governors – H.8, and author's calculation











# **TIMELINE HEATMAP** 1981 recession

Loan	arowth:
Loan	9.000

Quarter-over-quarter % change

Total loans and leases

Consumer loans

Revolving

Nonrevolving

Business loans (C&I)

Real estate loans

Fed funds rate\*

10-year treasury\*

30-year fixed rate mortgage\*

	2 year	s prior	to rece	ssion s	tart		Peak		R	ecessio	n				2 year	s after i	recessi	on end	
Q4 1979	Q1 1980	Q2 1980	Q3 1980	Q4 1980	Q1 1981	Q2 1981	Q3 1981	Q4 1981	Q1 1982	Q2 1982	Q3 1982	Q4 1982	Q1 1983	Q2 1983	Q3 1983	Q4 1983	Q1 1984	Q2 1984	Q3 1984
1.9	2.2	0.4	0.5	3.1	2.1	2.3	2.4	1.5	1.5	2.6	1.7	1.1	0.8	1.2	2.4	2.8	2.9	4.0	3.2
1.6	1.2	-2.0	-1.7	-0.1	0.3	0.7	0.6	0.2	0.4	1.0	0.6	0.6	0.7	2.0	3.9	5.0	4.1	5.0	4.4
4.7	0.8	-0.2	0.7	0.6	2.3	3.6	2.8	2.1	1.1	2.3	3.0	1.6	1.8	3.3	4.9	6.1	5.2	7.4	6.3
2.8	1.9	-1.1	-0.6	0.9	1.1	1.4	1.3	1.1	1.4	0.9	0.3	0.9	1.5	1.7	2.8	3.5	4.5	4.3	4.1
2.5	2.9	1.0	1.0	5.2	2.2	3.3	3.7	3.0	4.1	4.5	3.0	1.3	0.3	-0.2	2.1	2.3	3.3	5.1	3.1
3.6	3.1	1.9	1.4	2.1	1.9	2.2	2.1	1.8	2.1	2.1	1.1	0.7	1.3	1.7	2.9	3.1	3.2	3.6	3.1
13.6	15.0	12.7	9.8	15.9	16.6	17.8	17.6	13.6	14.2	14.5	11.0	9.3	8.7	8.8	9.5	9.4	9.7	10.6	11.4
10.4	12.0	10.5	10.9	12.4	13.0	13.7	14.8	14.1	14.3	13.9	13.1	10.7	10.6	10.6	11.6	11.7	12.0	13.2	12.9
12.5	13.7	14.4	12.6	14.2	15.1	16.2	17.4	17.7	17.4	16.8	16.2	14.0	13.0	12.8	13.6	13.5	13.3	14.0	14.5

Weaker growth

Higher rates/tightness\*

Source: Federal Reserve

### A DEEPER DIVE INTO THE DATA

Stronger growth

Lower rates/tightness\*

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# TIMELINE HEATMAP 1990 recession

Loan growth:			2 years	prior to	recessio	on start		Peak	Rece	ssion			2 yea	rs after	recessio	n end		
Quarter-over-quarter % change	Q4 1988	Q1 1989	Q2 1989	Q3 1989	Q4 1989	Q1 1990	Q2 1990	Q3 1990	Q4 1990	Q1 1991	Q2 1991	Q3 1991	Q4 1991	Q1 1992	Q2 1992	Q3 1992	Q4 1992	G
Total loans and leases	1.7	1.9	2.2	2.6	1.6	1.0	1.3	0.9	0.9	0.3	0.1	-0.8	0.1	0.0	-0.2	-0.4	0.3	
Consumer loans	1.7	1.3	1.3	1.3	1.4	1.0	-0.2	-0.6	0.6	-1.0	-0.4	-1.3	-0.8	-0.3	-1.0	-0.8	-0.5	
Large banks	1.7	1.1	1.2	1.3	1.4	0.8	-0.3	-0.5	0.5	-1.2	-0.4	-1.4	-0.8	-0.4	-1.1	-0.9	-0.5	
Small banks	1.9	3.4	3.3	0.9	1.8	3.8	0.8	-1.3	1.2	2.4	0.4	0.4	-0.4	1.7	0.0	0.8	-0.6	
Revolving	3.8	3.1	3.8	3.2	3.2	3.8	3.2	4.2	2.5	1.9	3.3	2.2	2.5	1.4	1.1	1.1	1.6	
Nonrevolving	0.4	3.5	1.4	0.6	0.8	0.0	-0.8	-0.2	-0.5	-1.5	-1.4	-1.9	-1.9	-0.5	-0.9	-0.2	-0.2	
Business loans (C&I)	1.2	1.9	1.5	1.9	0.7	-0.3	0.6	-0.1	-0.1	-0.6	-1.2	-1.2	-0.2	-1.5	-1.3	-0.7	-0.3	
Large banks	0.1	1.0	1.2	1.5	0.3	0.0	0.4	-0.1	-1.0	-1.6	-2.3	-2.5	-2.2	-3.1	-2.2	-1.6	-0.6	
Small banks	2.2	1.0	0.8	1.0	0.8	0.0	0.3	-0.3	-0.4	-2.0	-2.3	-2.4	-1.9	-2.0	-1.1	-0.1	-0.3	
Real estate loans	3.2	3.9	3.2	3.6	3.1	2.8	3.0	2.7	2.0	2.0	1.3	0.1	0.3	0.7	0.9	0.0	0.7	
Large banks	2.7	2.9	3.3	3.5	2.8	2.7	2.7	2.3	1.4	1.4	1.1	-0.1	-0.1	0.6	0.7	-0.1	0.9	
Small banks	3.8	3.5	2.2	3.1	2.6	1.8	2.3	2.0	2.4	2.5	0.8	0.5	1.6	0.9	1.5	0.5	1.7	
Willingness consumer installment*	21.1	15.8	16.7	7.4	6.9	1.9	7.4	10.2	-1.7	-14.8	1.8	0.0	10.5	9.3	18.2	21,1	16.4	
Tightness business (C&I)*							54.4	46.7	54.2	38.6	20.0	18.6	16.7	10.0	3.5	-3.4	5.2	
Fed funds rate*	8.5	9.4	9.7	9.1	8.6	8.3	8.2	8.2	7.7	6.4	5.9	5.6	4.8	4.0	3.8	3.3	3.0	
10-year treasury*	9.0	9.2	8.8	8.1	7.9	8.4	8.7	8.7	8.4	8.0	8.1	8.0	7.3	7.3	7.4	6.6	6.7	
30-year fixed rate mortgage*	10.4	10.8	10.6	10.0	9.8	10.1	10.3	10.1	10.0	9.5	9.5	9.3	8.7	8.7	8.7	8.0	8.2	

Weaker growth

Higher rates/tightness\*

Source: Federal Reserve and Freddie Mac

### A DEEPER DIVE INTO THE DATA

Stronger growth

Lower rates/tightness\*



# **TIMELINE HEATMAP** 2001 recession

Loan growth:		2	years p	rior to r	ecessio	n start		Peak	F	Recessio	n	с.		2 year	rs after	recessio	on end	
Quarter-over-quarter % change	Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003	Q3 2003
Total loans and leases	1.1	1.4	2.7	3.2	3.3	2.4	1.3	1.4	0.8	-0.1	0.1	0.0	0.2	1.6	3.2	1.6	1.8	1.9
Consumer loans	0.0	-0.4	0.8	2.8	2.5	2.5	2.1	1.6	1.1	0.4	0.8	0.8	0.9	1.6	3.1	0.0	0.4	1.4
Large banks	-0.8	-0.6	0.4	3.0	1.9	2.7	1.9	1.9	1.0	0.1	0.7	1.1	0.3	0.9	3.5	0.0	0.0	0.6
Small banks	6.3	0.7	3.9	1.7	7.2	1.6	3.5	-1.0	2.1	2.0	2.1	-1.8	5.5	5.6	0.2	0.1	3.4	6.4
Revolving	0.7	2.4	1.0	1.4	2.3	3.6	3.0	3.1	2.0	-0.3	0.5	0.8	1.7	1.5	1.3	1.1	0.7	0.4
Nonrevolving	2.7	2.2	1.8	1.8	2.6	4.1	3.1	2.4	2.1	2.4	3.8	2.1	1.9	1.6	0.8	1.6	2.2	1.7
Business loans (C&I)	0.7	2.2	2.7	2.3	3.4	2.0	1.0	1.1	-1.1	-2.0	-2.5	-1.9	-2.2	-2.0	-1.2	-1.8	-1.9	-1.6
Large banks	2.3	3.3	2.7	3.0	2.9	1.9	0.5	0.7	-1.5	-2.2	-3.0	-2.4	-3.1	-2.5	-1.0	-1.3	-1.4	-0.2
Small banks	3.2	3.6	3.8	4.1	4.9	2.9	2.2	1.4	0.8	-0.2	-0.8	-0.4	-1.2	0.7	0.3	-0.3	0.2	0.7
Real estate loans	1.4	2.3	4.4	4.7	4.4	3.1	1.2	1.5	2.2	0.8	1.8	1.7	1.8	4.0	5.9	4.3	3.2	3.8
Large banks	0.6	2.1	4.8	4.8	4.4	2.7	0.5	0.8	2.2	0.2	0.6	0.4	1.2	3.8	7.3	4.8	3.6	4.5
Small banks	3.5	3.1	3.7	4.5	4.5	4.1	2.8	3.0	2.3	2.0	4.3	4.3	2.8	4.2	3.3	3.5	2.7	2.5
Willingness consumer installment *	14.5	7.5	7.8	3.8	-3.7	1.9	1.8	-5.6	0.0	0.0	-7.1	-5.7	0.0	5.6	5.6	5.3	3.7	14.5
Tightness credit card *	13.3	4.8	4.9	4.8	2.6	-2.6	8.3	11.8	20.0	11.4	20.0	18.2	8.6	14.7	15.2	16.2	9.7	0.0
Tightness business (C&I) *	10.0	5.4	9.1	10.9	24.6	33.9	43.9	59.6	50.9	40.4	50.9	45.5	25.0	21.4	20.0	22.0	8.9	3.4
Fed funds rate <sup>*</sup>	4.7	5.1	5.3	5.7	6.3	6.5	6.5	5.6	4.3	3.5	2.1	1.7	1.8	1.7	1.4	1.3	1.2	1.0
10-year treasury *	5.5	5.9	6.1	6.5	6.2	5.9	5.6	5.0	5.3	5.0	4.8	5.1	5.1	4.3	4.0	3.9	3.6	4.2
30-year fixed rate mortgage*	7.2	7.8	7.8	8.3	8.3	8.0	7.6	7.0	7.1	7.0	6.8	7.0	6.8	6.3	6.1	5.8	5.5	6.0

Weaker growth

Source: Federal Reserve and Freddie Mac

Higher rates/tightness\*

### A DEEPER DIVE INTO THE DATA

Stronger growth

Lower rates/tightness\*



## **TIMELINE HEATMAP** 2008 recession

### 2 years prior to recession start Peak Loan growth: Quarter-over-quarter % change Q1 2006 Q2 2006 Q3 2006 Q4 2006 Q1 2007 Q2 2007 Q3 2007 Q4 2007 3.0 Total loans and leases 1.8 3.3 2.5 2.3 3.8 1.4 3.9 2.0 -0.2 3.1 **Consumer loans** 0.0 1.9 0.9 0.9 2.4 0.1 -0.4 Large banks 2.8 0.5 0.6 1.7 2.8 1.8 -3.5 Small banks -0.6 3.3 1.1 3.9 11.4 0.2 3.3 Revolving 0.7 7.1 1.6 1.7 1.7 2.0 2.7 1.4 0.6 0.9 1.4 1.6 Nonrevolving 2.3 0.9 0.8 1.2 2.8 Business loans (C&I) 4.1 3.8 5.5 3.4 2.3 3.4 6.3 Large banks 3.4 3.4 2.1 2.6 3.1 5.4 5.6 2.1 1.3 3.5 2.9 3.2 Small banks 5.0 2.9 -0.4 4.7 Real estate loans 2.6 3.0 2.4 0.5 1.9 3.1 1.7 6.4 2.2 2.8 Large banks 2.3 8.5 1.6 2.9 1.8 1.9 2.6 -2.3 2.1 Small banks 3.5 3.2 3.1 1.3 3.1 Willingness consumer installment 11.5 14.5 7.7 1.9 7.8 1.8 0.0 -6.0 loans\* Tightness credit card\* -2.9 -3.0 0.0 -11.1 3.1 -2.6 -3.1 3.2 Tightness business (C&I)\* -10.7 -12.3 -8.9 0.0 -3.8 7.5 19.2 0.0 Fed funds rate<sup>\*</sup> 5.2 4.5 5.2 5.3 5.1 4.5 4.9 5.3 10-year treasury\* 4.6 4.9 4.6 4.7 4.8 4.7 4.3 5.1 6.2 30-year fixed rate mortgage\* 6.2 6.2 6.4 6.6 6.2 6.6 6.6

Weaker growth

Source: Federal Reserve and Freddie Mac

\*\*Removed from impact calculations due to break in the data

### Higher rates/tightness\*

### A DEEPER DIVE INTO THE DATA

		Rece	ssion					2 years	s after	recessi	on end	
Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
2.4	0.9	0.7	4.5	-1.1	-1.0	-2.8	-2.2	-1.9	4.8**	-1.1	-0.6	-0.9
1.7	1.2	2.6	4.7	2.0	-2.8	-1.4	-1.1	0.0	36.9**	-1.7	-1.7	-3.4
2.1	1.1	2.8	5.6	1.5	-3.6	-1.7	-1.2	0.1	39.8**	-2.1	-2.1	-4.4
-0.6	2.1	1.9	-0.7	4.9	1.9	-0.3	-0.7	-0.8	30.0**	1.4	0.3	2.8
2.0	0.6	-0.3	-0.6	-1.3	-2.7	-1.7	-2.8	-2.6	-2.0	-2.0	-2.2	-1.6
1.0	1.2	0.4	-0.2	-0.1	-0.2	-0.4	0.0	0.2	0.3	0.9	4.1	6.3
4.2	2.7	1.7	3.6	-2.8	-4.2	-6.8	-5.7	-4.9	-2.1	-0.9	0.0	1.1
2.9	2.3	1.5	2.4	-3.5	-4.4	-7.8	-6.6	-5.1	-2.2	-0.8	-0.1	1.3
3.7	2.4	1.9	2.8	-2.2	-2.0	-2.4	-1.9	-2.5	-0.7	-0.2	-0.3	0.3
1.4	0.5	-0.2	5.0	-0.2	1.1	-1.4	-0.8	-1.2	-0.8	-1.2	-0.9	-1.4
1.0	-0.3	-1.3	7.3	-1.3	1.8	-1.6	-0.7	-0.9	-0.8	-1.2	-0.7	-1.4
1.8	1.8	1.6	1.1	1.8	-0.1	-0.8	-0.9	-1.8	-0.7	-1.3	-1.1	-1.4
-15.1	-22.6	-34.0	-47.2	-16.0	-5.9	-6.0	-1.9	9.6	14.0	22.6	20.0	20.4
9.8	32.4	66.7	58.8	58.8	58.1	35.3	15.8	2.8	9.1	-7.9	-10.0	-10.0
32.1	55.4	57.7	83.6	64.2	39.6	31.5	14.0	-5.5	-7.1	-8.8	-10.5	-10.5
3.2	2.1	1.9	0.5	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2
3.7	3.9	3.9	3.2	2.7	3.3	3.5	3.5	3.7	3.5	2.8	2.9	3.5
5.9	6.1	6.3	5.8	5.1	5.0	5.2	4.9	5.0	4.9	4.4	4.4	4.8

Stronger growth

Lower rates/tightness\*

Timelines of Recession and Recovery | Page 37



# **TIMELINE HEATMAP** 2020 recession

Loan growth:			2 years	prior to	recessio	on start		Peak	Rece	ssion	2 years after recession end							
Quarter-over-quarter % change	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q
Total loans and leases	0.9	1.5	1.0	1.3	1.5	1.0	1.2	1.2	1.9	5.8	-2.0	-1.6	-0.2	0.0	0.6	1.7	2.5	
Consumer loans	1.3	2.0	0.8	1.2	1.3	1.6	1.4	1.6	1.3	-4.5	-1.0	0.2	0.6	1.4	2.7	2.7	3.1	
Large banks	0.9	0.6	0.4	1.1	1.4	1.5	1.1	1.8	1.4	-4.9	-1.2	0.3	0.4	0.9	2.4	2.7	3.1	
Small banks	2.8	7.3	1.9	1.3	0.8	1.9	2.3	0.8	0.7	-3.0	-0.4	0.1	1.2	2.9	3.6	2.7	3.3	
Revolving	1.4	0.0	1.3	1.2	1.0	0.9	1.0	0.2	0.7	-8.0	-2.2	-0.9	-0.2	0.7	2.2	3.0	3.5	
Nonrevolving	1.3	1.1	1.1	1.3	1.3	1.1	1.3	1.3	1.0	0.3	1.3	0.9	1.3	1.5	1.3	1.2	1.3	
Business loans (C&I)	0.3	2.9	1.7	2.9	2.4	0.1	1.2	0.2	2.4	22.3	-5.1	-6.0	-2.3	-2.0	-3.7	0.4	2.6	
Large banks	0.3	1.7	1.7	3.2	2.4	-0.3	1.6	-0.3	2.6	16.8	-8.3	-6.3	-2.4	-2.4	-2.6	1.3	3.6	
Small banks	1.0	7.5	2.8	2.4	0.9	1.9	2.2	1.1	0.7	34.1	6.3	-3.4	-1.7	-1.0	-8.1	-3.8	-0.8	
Real estate loans	1.0	0.7	0.6	0.7	0.8	1.1	0.7	1.3	1.4	0.8	0.1	-0.6	0.0	-0.1	0.9	1.5	1.8	
Large banks	0.2	-0.2	-0.2	-0.1	0.2	0.3	0.0	0.9	0.5	0.1	-0.2	-1.6	-0.9	-1.7	0.0	0.8	0.8	
Small banks	2.1	1.8	1.8	1.6	1.7	1.9	1.6	1.8	2.4	1.7	0.4	0.4	1.1	1.6	1.8	2.2	2.6	
Willingness consumer installment loans *	9.5	9.2	9.7	14.0	1.6	4.9	5.0	1.7	5.0	-20.0	-41.0	3.4	7.9	24.6	24.2	15.5	18.0	
Tightness credit card *	1.9	9.4	12.0	-2.2	6.4	15.2	8.5	10.4	13.6	38.5	71.7	26.7	-12.8	-27.1	-37.3	-31.1	-17.0	
Tightness business (C&I) *	-10.0	-11.3	-15.9	-15.9	2.8	-4.2	-2.8	5.4	0.0	41.5	71.2	37.7	5.5	-15.1	-32.4	-18.2	-14.5	
Fed funds rate <sup>*</sup>	1.4	1.7	1.9	2.2	2.4	2.4	2.2	1.6	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
10-year treasury *	2.8	2.9	2.9	3.0	2.7	2.3	1.8	1.8	1.4	0.7	0.7	0.9	1.3	1.6	1.3	1.5	2.0	
30-year fixed rate mortgage*	4.3	4.5	4.6	4.8	4.4	4.0	3.7	3.7	3.5	3.2	3.0	2.8	2.9	3.0	2.9	.3.1	3.8	

Weaker growth

Source: Federal Reserve and Freddie Mac

Higher rates/tightness\*

### A DEEPER DIVE INTO THE DATA

Stronger growth

Lower rates/tightness\*



# A DEEPER DIVE INTO THE DATA

# DELINQUENCY

# estate loans

Delinquency serves as a key metric in tracking the health of households and businesses and is one area that can show the actual effects of financial hardship for consumers. Expected higher levels of delinquency and default can also cause lenders to tighten credit standards and reduce their overall exposure to more sensitive segments of the market.

In the last four recessions, 30+ DPD delinquency on all loans increased by an average 1.6 pp (chart 31). The largest percentage point increase was seen in real estate (2.3 pp), followed by business (1.4 pp) and consumer loans (0.5 pp) (charts 32, 33, 34, 35). In terms of timing, overall delinquencies tend to peak two quarters after the end of a recession; however, consumer loans exhibited their peak, on average, during the recession.

### 30+ DPD and charge-offs for consumer, business and real

### **CHART 31** Recession recovery: delinquency on all loans



Source: Federal Reserve and author's calculations

### **CHART 32** Increase (pp) in delinquency: all loans



### A DEEPER DIVE INTO THE DATA

### **CHART 33**

**Recession recovery: delinquency on consumer** 

### Increase (pp) in delinquency: consumer loans



Source: Federal Reserve and author's calculations



### **CHART 34 Recession recovery: delinquency on business**



### Increase (pp) in delinquency: business loans



### A DEEPER DIVE INTO THE DATA

# **CHART 35**

**Recession recovery: delinquency on real estate loans** 

### Increase (pp) in delinquency: real estate loans

Source: Federal Reserve and author's calculations

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# TIMELINE HEATMAP 1990 recession

### Delinquency rate

		2 yea	rs prior t	o recess	ion start			Peak	Rece	ssion	]		2 yea	rs after r	ecession	end		
Q4	1988	Q1 1989	Q2 1989	Q3 1989	Q4 1989	Q1 1990	Q2 1990	Q3 1990	Q4 1990	Q1 1991	Q2 1991	Q3 1991	Q4 1991	Q1 1992	Q2 1992	Q3 1992	Q4 1992	C
	4.7	4.9	5.0	5.1	4.9	5.0	5.1	5.4	6.0	6.1	6.2	6.0	5.8	5.6	5.4	5.2	4.9	
	3.3	3.4	3.5	3.6	3.6	3.6	3.6	3.8	4.0	4.1	4.2	4.2	4.1	4.0	3.8	3.7	3.6	
, in the second s	5.0	5.3	5.2	5.2	5.2	5.2	5.4	5.5	6.3	6.3	6.4	6.2	6.0	5.8	5.5	5.3	4.8	
	4.5	4.7	4.8	5.0	5.1	5.4	5.7	6.1	7.1	7.3	7.4	7.2	7.1	6.6	6.5	6.2	5.8	
	1.0	0.9	1.0	1.1	1.5	1.6	1.6	1.3	1.3	1.5	1.7	1.8	1.5	1.5	1.2	1.4	1.2	
	1.5	1.6	1.6	1.5	1.6	1.6	1.7	1.8	2.0	2.2	2.3	2.4	2.3	2.4	2.3	2.1	2.1	
	0.9	0.9	0.9	0.9	1.4	1.4	1.4	1.3	1.3	1.5	1.9	2.0	1.8	2.0	1.3	1.4	1.0	
	0.3	0.5	0.5	0.5	0.5	0.7	0.7	0.8	1.0	0.9	1.0	1.0	1.2	1.0	1.0	1.2	1.1	
	5.3	5.2	5.2	5.2	5.4	5.3	5.3	5.7	6.1	6.6	6.8	6.9	7.1	7.4	7.6	7.6	7.4	
1	1.6	11.6	11.7	11.8	11.7	11.6	11.6	11.6	11.6	11.6	11.4	11.3	11.1	10.9	10.7	10.5	10.5	

2	2 years <sub>l</sub>	prior to r	ecessio	n start			Peak	F	Recessio	n	2 years after recession end							
Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003	Q3 2003	C
2.2	2.2	2.1	2,1	2.1	2.2	2.3	2.4	2.6	2.7	2.7	2.8	2.8	2.7	2.6	2.5	2.4	2.2	
3.6	3.6	3.5	3.5	3.5	3.6	3.6	3.6	3.7	3.7	3.6	3.6	3.5	3.5	3.5	3.4	3.3	3.1	
2.0	2.1	2.0	2.1	2.2	2.3	2.5	2.7	2.9	3.3	3.5	3.7	3.9	3.9	3.9	3.7	3.6	3.3	
1.9	2.0	1.8	1.8	1.8	1.9	2.0	2.1	2.2	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.8	1.7	
0.6	0.6	0.6	0.6	0.6	0.6	0.8	0.8	0.9	1.0	1.1	1.2	1.1	1.1	0.9	0.9	0.9	0.8	
2.1	2.3	2.2	2.2	2.1	2.2	2.7	2.3	2.6	2.8	3.1	3.6	3.1	3.1	2.8	2.8	3.0	2.8	
0.5	0.6	0.6	0.6	0.7	0.7	0.9	1.1	1.2	1.4	1.8	1.7	1.9	2.2	1.3	1.7	1.4	1.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	
4.3	4.2	4.1	4.0	3.9	4.0	3.9	4.2	4.4	4.8	5.5	5.7	5.8	5.7	5.9	5.9	6.1	6.1	
11.4	11.5	11.5	11.5	11.7	11.8	12.0	12.1	12.4	12.3	12.7	12.4	12.3	12.4	12.3	12.3	12.3	12.1	

Source: Federal Reserve and Bureau of Labor Statistics

Higher rates

All loans Consumer loans Business loans (C&I) Real estate loans All loans charge off rate Consumer loans charge off Business loans (C&I) charge off Real Estate Loans charge off Unemployment Household debt service ratio

### 2001 recession

### **Delinquency rate**

All loans Consumer loans Business loans (C&I) Real estate loans All loans charge off rate Consumer loans charge off Business loans (C&I) charge off Real Estate Loans charge off Unemployment Household debt service ratio

### A DEEPER DIVE INTO THE DATA

Lower rates

Timelines of Recession and Recovery | Page 42







# TIMELINE HEATMAP 2008 r

2008 recession								1														
2000 1 20251011		2 years	s prior	to rece	ssion st	tart		Peak			Rece	ssion					2 year	s after	recess	ion end		
Delinquency rate	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	ſ
All loans	1.5	1.5	1.6	1.7	1.7	1.9	2.1	2.5	2.9	3.3	3.7	4.8	5.6	6.4	6.9	7.3	7.4	7.2	6.9	6.4	6.2	
Consumer loans	2.8	2.9	3.0	2.9	2.9	3.0	3.2	3.4	3.5	3.6	3.7	4.3	4.7	4.9	4.7	4.6	4.7	4.3	4.0	3.6	3.4	
Business loans (C&I)	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.3	1.5	1.8	1.8	2.6	3.2	3.8	4.4	4.3	4.0	3.6	3.3	3.0	2.5	ĺ
Real estate loans	1.4	1.4	1.5	1.7	1.8	2.0	2.4	2.9	3.5	4.2	4.9	6.0	7.3	8.1	8.9	9.5	10.2	9.9	9.6	9.2	9.0	
All loans charge off rate	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.8	1.0	1.3	1.6	1.9	2.1	2.7	2.9	2.9	3.0	2.9	2.5	2.2	2.0	
Consumer loans charge off	1.8	1.9	2.2	2.1	2.3	2.3	2.5	2.8	3.0	3.3	3.7	4.3	4.8	5.6	5.9	5.8	6.6	6.6	5.5	4.9	4.4	
Business loans (C&I) charge off	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.7	0.7	0.8	1.0	1.3	1.9	2.4	2.6	2.3	2.1	1.9	1.7	1.3	1.2	
Real Estate Loans charge off	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.7	1.1	1.5	1.7	1.6	2.3	2.4	2.8	2.4	2.2	2.1	2.0	1.7	
Unemployment	4.7	4.6	4.6	4.4	4.5	4.5	4.7	4.8	5.0	5.3	6.0	6.9	8.3	9.3	9.6	9.9	9.8	9.6	9.5	9.5	9.0	
Household debt service ratio	12.6	12.7	12.8	12.9	12.9	12.9	13.1	13.2	13.1	12.8	12.8	12.8	12.7	12.4	12.2	11.9	11.6	11.3	11.1	10.9	10.8	

### 2020 recession

### **Delinquency rate**

All loans Consumer loans Business loans (C&I) Real estate loans All loans charge off rate Consumer loans charge off Business loans (C&I) charge off Real Estate Loans charge off Unemployment Household debt service ratio

	2 year	rs prior to	o recessi	on start			Peak	Rec	ession	2 years after recession end							
Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2
1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.4	1.5	1.6	1.6	1.6	1.5	1.4	1.3	1.3	1.2	
2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.5	2.0	1.8	1.9	1.7	1.5	1.5	1.5	1.7	
1.1	1.1	1.0	0.9	1.2	1.1	1.1	1.1	1.1	1.3	1.3	1.2	1.2	1.1	1.0	1.1	1.1	
2.2	2.0	1.9	1.8	1.8	1.7	1.6	1.5	1.6	1.8	1.9	1.9	1.8	1.7	1.6	1.5	1.4	
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	
2.2	2.2	2.3	2.3	2.2	2.3	2.4	2.3	2.3	2.3	2.0	1.5	1.5	1.2	1.0	0.9	1.0	
0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.6	0.6	0.5	0.4	0.3	0.2	0.2	0.1	0,1	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	
4.0	3.9	3.8	3.8	3.9	3.6	3.6	3.6	3.8	13.0	8.8	6.8	6.2	5.9	5.1	4.2	3.8	
9.9	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.7	8.8	9.1	9.3	8.3	9.0	9.1	9.3	9.5	

Source: Federal Reserve and Bureau of Labor Statistics

Higher rates

### A DEEPER DIVE INTO THE DATA







# A DEEPER DIVE INTO THE DATA

# CONSUMER SPENDING

### Goods versus services

Consumer spending is the primary driver of the US economy, making up more than two-thirds of gross domestic product (charts 36, 37) and is vital for the financial services industry. In good times, consumers are able to take out loans to travel, furnish and buy a new home, and generally maintain their spending habits. However, as stress in the economy increases and job losses mount, consumers pull back on expenditures, putting downward pressure on lending and overall economic activity. This dynamic can become exacerbated by tighter credit conditions, which limits access to credit and the ability to smooth consumption during hardship.

Across recessionary periods since 1981 (excluding 2020), average quarterly consumer spending growth slowed from 1.8% in the lead up to recession to 0.7% during the recession (chart 38, 39). This impact fell more acutely on goods spending, which fell to 0% growth during a recession and took longer to recover than spending in the service sector (39, 40, 41, 42).

### **CHART 36**





Source: Bureau of Economic Analysis and author's calculation

# **CHART 38**



Source: Bureau of Economic Analysis and author's calculation

### A DEEPER DIVE INTO THE DATA

Source: Bureau of Economic Analysis and author's calculation

## **CHART 39**

Source: Bureau of Economic Analysis and author's calculation

Timelines of Recession and Recovery | Page 45



### **CHART 40**



### Consumer spending on goods: average quarterly growth

Source: Bureau of Economic Analysis and author's calculation

# **CHART 42**



Source: Bureau of Economic Analysis and author's calculation

### A DEEPER DIVE INTO THE DATA

### **CHART 41**

### Consumer spending on services: average quarterly growth

Source: Bureau of Economic Analysis and author's calculation

### **Recession recovery: services spending**

## TIMELINE HEATMAP 1981 recession

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				3.	••••	

1/01/16/2551011													-	1		_				
Spending growth:		2 ye	ars prid	or to re	cession	start		Peak	b	R	ecessio	on				2 year	s after	recessi	on end	
Quarter-over-quarter % change	Q4 1979	Q1 1980	Q2 1980	Q3 1980	Q4 1980	Q1 1981	Q2 1981	Q3 1981	Q4 1981	Q1 1982	Q2 1982	Q3 1982	Q4 1982	Q1 1983	Q2 1983	Q3 1983	Q4 1983	Q1 1984	Q2 1984	Q3 1984
Total spending	2.7	2.9	0.1	3.5	3.9	2.9	1.7	2.1	0.8	2.0	1.3	2.3	2.9	1.8	3.0	3.1	2.3	1.9	2.4	1.5
Goods	2.0	3.1	-1.8	3.1	3.2	3.9	0.4	2.0	-1.0	1.6	0.2	1.6	2.1	0.5	4.0	2.9	2.5	2.2	2.5	0.3
New motor vehicles	-3.0	1.5	-24.8	17.9	2.2	14.6	-11.7	13.3	-17.0	18.2	-0.8	0.3	13.0	-2.0	20.3	3.6	9.2	4.8	1.7	-3.6
Furniture	-1.1	0.2	-4.5	2.6	7.4	0.7	1.1	-2.5	-4.2	-1.8	2.5	-0.2	3.7	3.9	3.2	4.9	3.9	3.9	2.8	2.1
Major household appliances	0.2	-0.1	-2.0	1.7	3.1	0.9	-0.5	0.6	-0.7	-2.9	1.1	0.8	1.8	4.7	4.1	4.1	2.4	2.7	2.7	1.9
Clothing and footwear	1.4	0.7	0.4	3.3	3.2	3.4	1.4	2.0	-0.1	1.3	-1.0	2.0	1.4	1.4	4.0	2.1	3.3	1.7	2.8	-0.7
Jewelry	1.0	9.4	-6.5	2.6	9.4	-0.9	3.0	0.6	-4.0	-1.9	3.1	-2.7	1.8	5.2	4.4	1.4	3.8	3.8	3.9	2.5
Services	3.3	2.7	1.8	3.8	4.4	2.1	2.7	2.2	2.3	2.4	2.1	2.8	3.4	2.8	2.2	3.3	2.1	1.7	2.3	2.5
Travel	8.0	4.5	0.7	3.5	4.9	2.8	2.7	-2.4	0.1	-0.1	3.0	2.0	-0.2	-0.2	5.4	6.7	5.1	5.3	2.4	-1.7
Restaurants	4.9	1.5	0.4	2.3	3.5	4.3	1.0	0.4	0.8	1.6	3.3	2.7	2.2	2.8	1.1	2.2	0.8	3.0	1.1	2.6
Telecommunication services	1.0	3.2	-1.4	4.4	2.6	2.8	2.9	3.1	4.9	1.6	4.4	3.1	3.3	2.8	2.3	-0.5	1.3	6.3	0.6	-1.1
Motor vehicle maintenance	3.3	-0.6	-2.1	4.0	2.5	4.1	-2.0	5.2	-0.3	-1.6	1.6	2.9	3.1	3.4	3.0	4.0	4.4	3.6	2.4	3.8
Physicians services	3.6	3.4	2.1	5.9	6.5	3.2	3.6	4.3	2.0	1.0	1.8	2.9	3.1	3.5	2.7	3.0	3.1	2.8	2.2	2.4
Dental services	1.0	3.3	2.0	5.0	7.3	2.7	5.2	3.2	-0.6	2.0	2.4	2.0	1.4	1.8	2.4	3.0	2.4	1.9	1.9	2.1

Weaker growth

### A DEEPER DIVE INTO THE DATA



# TIMELINE HEATMAP 1990 recession

Spending growth:			2 years	s prior to	recessi	on start		Peak	Rece	recessio	ion end							
Quarter-over-quarter % change	Q4 1988	Q1 1989	Q2 1989	Q3 1989	Q4 1989	Q1 1990	Q2 1990	Q3 1990	Q4 1990	Q1 1991	Q2 1991	Q3 1991	Q4 1991	Q1 1992	Q2 1992	Q3 1992	Q4 1992	C
Total spending	2.2	1.6	1.8	1.6	1.2	2.3	1.2	1.7	0.6	0.1	1.4	1.2	0.7	2.5	1.3	1.7	1.9	
Goods	2.3	1.2	2.3	1.5	0.1	3.2	-0.7	1.2	0.2	-0.9	0.8	0.8	-0.7	2.4	0.9	1.6	1.6	
New motor vehicles	4.2	0.4	-0.8	7.3	-13.8	14.0	-7.3	-2.6	-6.7	-11.2	0.9	4.7	-0.8	7.0	1.1	2.6	2.9	
Furniture	5.4	3.8	1.3	0.9	0.0	1.5	-4.5	-2.1	-2.2	0.6	2.7	-0.8	-0.3	1.7	0.7	1.8	1.2	
Major household appliances	2.2	0.6	1.3	-1.3	1.1	-0.7	-1.5	-2.1	-1.5	-1.0	2.0	-2.0	-2.5	4.5	0.0	1.1	1.5	
Clothing and footwear	3.6	0.2	1.8	1.0	1.5	0.7	0.0	0.1	-1.1	1.3	2.1	0.5	-1.4	3.6	1.5	2.2	1.6	
Jewelry	3.0	-0.4	0.4	0.6	1.0	3.0	-0.3	0.7	-1.7	0.5	3.1	-3.2	-1.7	4.9	0.6	2.6	1.0	
Services	2.0	1.9	1.5	1.6	2.0	1.7	2.5	2.0	0.8	0.8	1.8	1.4	1.5	2.6	1.6	1.8	2.1	
Travel	1.4	3.6	1.2	0.8	1.6	3.9	0.2	-0.2	1.4	-4.1	3.5	1.8	2.2	2.4	-1.3	3.6	0.8	
Restaurants	2.7	0.4	0.6	2.1	1.4	3.5	2.1	1.8	-1.3	0.6	2.8	0.4	-0.1	2.9	-2.3	1.0	4.7	
Telecommunication services	1.3	1.3	2.2	1.7	2.1	-0.1	1.5	1.3	-1.1	0.6	3.2	3.3	1.9	3.0	3.1	2.6	0.4	
Motor vehicle maintenance	2.4	1.4	0.8	0.3	0.2	1.2	1.3	-0.7	-1.4	-4.1	-1.5	-0.1	0.3	3.6	2.1	1.8	1.0	
Physicians services	2.0	2.0	1.1	2.1	2.5	2.8	3.1	2.6	2.2	1.4	1.1	1.8	2.1	3.5	2.6	1.5	0.9	
Dental services	1.4	2.0	1.9	1.7	2.1	1.9	1.5	1.4	0.8	0.6	1.3	2.4	2.1	3.4	2.4	2.7	1.6	

Weaker growth

### A DEEPER DIVE INTO THE DATA



# **TIMELINE HEATMAP** 2001 recession

Spending growth:		2	2 years p	orior to r	ecessio	n start		Peak	F	ecessio	n	2 years after recession end									
Quarter-over-quarter % change	Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003	Q3 2003	(		
Total spending	2.1	1.7	2.1	2.3	1.4	1.6	1.4	1.1	0.7	0.4	1.7	0.4	1.3	1.2	1.0	1.3	1.2	2.1			
Goods	3.1	1.7	2.1	2.3	1.0	1.3	1.0	0.2	0.4	0.2	2.5	-0.6	1.0	1.2	0.4	1.1	0.8	3.3			
New motor vehicles	5.0	1.0	2.0	6.0	-4.3	1.3	-4.8	7.5	-0.9	-1.6	30.1	-11.1	-6.8	11.3	-3.1	-3.4	5.9	3.5			
Furniture	1.7	3.6	2.7	3.6	2.6	1.1	-1.5	1.3	0.3	0.8	2.6	2.4	0.4	-1.6	1.1	-1.7	3.8	2.5			
Major household appliances	2.8	3.4	1.0	2.8	1.9	0.4	2.4	0.8	0.1	2.0	3.5	1.7	0.9	-1.3	0.9	-1.7	2.7	5.1			
Clothing and footwear	1.5	0.3	0.4	1.0	1.5	0.9	0.8	-1.5	-0.8	-1.1	0.7	0.7	-0.2	-1.1	2.3	-1.4	1.6	2.7			
Jewelry	2.2	2.4	3.8	-1.3	2.2	1.5	-0.8	-1.1	-3.3	-1.4	1.7	3.2	0.3	-1.3	2.9	-0.6	2.5	4.1			
Services	1.6	1.7	2.1	2.4	1.7	1.8	1.7	1.6	0.8	0.5	1.2	1.0	1.4	1.2	1.4	1.3	1.5	1.4			
Travel	0.7	3.6	2.2	3.5	4.4	2.0	0.5	-3.6	-4.7	-9.1	-7.7	6.4	2.3	0.1	1.4	2.3	-0.3	7.8			
Restaurants	1.3	0.8	3.1	2.2	1.1	1.0	0.3	2.0	0.0	0.5	0.7	1.7	0.9	0.7	0.4	1.1	2.6	2.1			
Telecommunication services	3.0	2.6	1.4	1.7	2.4	1.1	0.6	0.4	1.9	1.0	-1.0	-0.1	-0.3	0.8	-0.7	0.3	-0.5	-0.2			
Motor vehicle maintenance	1.6	1.4	1.3	1.7	1.6	1.7	1.4	1.4	1.0	0.9	0.4	0.1	0.6	0.6	1.3	1.6	1.2	1.2			
Physicians services	1.1	1.8	2.0	2.3	2.0	1.8	1.8	2.9	1.7	1.7	2.6	1.3	2.2	2.3	2.1	1.0	2.8	2.3			
Dental services	1.5	1.8	2.1	2.3	2.2	2.1	2.1	2.3	2.0	2.3	2.5	2.8	2.2	1.3	0.7	-0.4	0.7	1.3			

Weaker growth

Source: Bureau of Economic Analysis

### A DEEPER DIVE INTO THE DATA



## TIMELINE HEATMAP 2008 recession

ZUUD TECESSION								<u></u>							1						
Spending growth:		2 y	ears p	rior to	recess	ion sta	rt	Peak			Rece	ssion					2 years	s after	recess	ion end	
Quarter-over-quarter % change	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
Total spending	1.6	1.4	1.4	0.8	1.5	1.1	1.2	1.4	0.7	1.3	0.3	-2.5	-0.9	-0.1	1.4	0.7	1.0	1.1	0.9	1.3	1.2
Goods	2.0	0.9	1.5	-0.3	1.4	1.3	0.8	1.4	-0.6	1.1	-0.5	-7.4	-1.7	0.5	3.0	0.3	0.9	0.8	0.7	2.5	2.1
New motor vehicles	5.8	-0.9	2.9	-2.1	3.1	-2.3	-2.3	1.4	-7.6	-7.8	-7.4	-19.3	1.3	3.3	23.9	-12.0	-1.3	8.3	2.5	8.2	3.1
Furniture	1.2	-0.6	1.6	-0.4	1.1	-0.4	-0.7	-1.2	-3.7	-2.3	-5.5	-6.0	-2.6	-2.4	-0.3	0.2	1.8	0.1	-0.3	0.2	1.2
Major household appliances	3.3	-2.0	0.9	-1.0	0.9	-0.8	0.0	-0.4	0.6	0.2	-2.3	-5.0	-1.1	-3.0	-0.2	-0.2	1.7	3.6	-2.5	0.6	0.6
Clothing and footwear	0.2	0.3	0.7	1.0	0.7	-0.9	-0.2	0.1	-1.0	1.6	-1.8	-4.2	-0.4	-1.1	1.1	0.4	2.3	0.8	0.1	2.2	1.4
Jewelry	3.6	-0.2	1.3	1.1	0.8	2.0	1.1	0.9	-1.4	-1.3	-1.6	-10.0	-1.9	2.3	1.1	0.9	0.3	-0.6	0.4	3.6	3.4
Services	1.4	1.7	1.3	1.4	1.6	1.0	1.4	1.4	1.4	1.3	0.7	0.0	-0.5	-0.4	0.6	0.8	1.0	1.2	1.0	0.7	0.8
Travel	1.9	1.9	0.2	1.9	2.4	0.7	1.1	3.7	1.4	1.7	-0.2	-4.4	-4.3	-2.3	2.7	2.3	0.7	2.8	1.5	0.6	3.7
Restaurants	2.4	0.0	1.3	2.3	0.1	1.3	1.4	1.7	-0.8	1.2	0.3	0.0	-0.9	-0.7	-0.5	0.4	1.5	1.4	1.0	0.8	1.3
Telecommunication services	2.6	1.7	-0.7	0.7	1.4	0.7	0.5	0.6	0.3	1.7	0.6	-2.4	-1.3	-1.8	-0.4	0.3	0.8	0.1	1.0	-0.5	1.6
Motor vehicle maintenance	-0.3	0.0	0.5	1.2	1.3	0.9	0.3	-0.5	-0.6	-1.0	-0.6	-1.3	-2.0	-2.6	0.8	1.0	2.3	-1.6	-0.6	3.5	-0.2
Physicians services	0.7	1.6	1.3	0.4	2.5	0.1	1.2	1.4	1.5	1.4	1.3	0.9	0.2	1.4	0.4	-0.2	1.3	0.4	2.7	-0.5	1.8
Dental services	0.8	1.4	1.1	1.5	1.6	1.2	1.8	1.7	1.2	0.8	0.9	0.4	0.5	-1.4	-0.6	0.8	0.7	1.1	1.6	0.4	-0.5

Weaker growth

Source: Bureau of Economic Analysis

### A DEEPER DIVE INTO THE DATA



## **TIMELINE HEATMAP** 2020 recession

Spending growth:			2 years	orior to r	ecessior	n start		Peak	Rec	ession	2 years after recession end											
Quarter-over-quarter % change	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q4 2022	Q2				
Total spending	1.4	1.3	1.0	0.8	0.3	1.3	1.1	0.9	-1.2	-9.6	10.3	1.4	3.7	4.5	2.1	2.3	2.2					
Goods	0.9	1.0	0.6	0.6	-0.3	1.8	1.1	0.7	-0.2	-4.1	12.7	0.2	7.3	5.0	-0.2	2.8	3.0					
New motor vehicles	-3.9	-0.3	1.0	2.2	-6.8	3.5	3.6	1.6	-11.4	-3.9	25.5	6.9	8.0	5.9	-18.6	6.5	15.8					
Furniture	3.4	3.1	1.0	-0.3	0.2	3.7	3.0	2.1	2.5	3.0	22.4	-1.0	10.4	1.6	-1.5	0.8	3.4					
Major household appliances	0.2	2.2	0.7	-1.4	-1.0	1.4	2.7	-0.1	-0.6	3.2	13.3	-2.8	10.5	3.8	-1.3	-1.3	4.5					
Clothing and footwear	0.9	1.3	0.2	0.3	0.1	0.6	0.9	-0.1	-9.1	-21.1	36.0	0.9	10.0	8.3	0.6	0.4	1.6					
Jewelry	1.5	2.2	-2.1	-1.3	-0.8	1.8	3.0	-1.8	-7.4	-24.0	59.0	0.7	13.9	10.3	2.5	3.4	1.8					
Services	1.6	1.4	1.2	0.9	0.6	1.0	1.1	1.0	-1.7	-12.1	9.0	2.0	1.9	4.2	3.4	2.0	1.7					
Travel	2.5	2.9	0.2	4.2	1.8	0.6	0.4	2.7	-17.8	-77.6	96.8	14.4	14.9	52.4	28.5	8.9	1.2					
Restaurants	1.5	1.8	2.3	-0.5	1.0	2.6	1.8	0.5	-7.0	-23.7	30.3	-1.2	6.7	14.0	4.4	0.7	1.3					
Telecommunication services	0.9	1.9	2.3	-0.9	0.5	-0.7	0.5	0.0	-0.6	-1.5	1.0	2.4	2.0	1.8	1.5	1.2	2.8					
Motor vehicle maintenance	2.4	-3.2	-1.1	0.5	0.9	4.6	2.2	0.9	-2.3	-14.2	9.8	-2.6	-0.5	6.1	6.5	1.2	1.2					
Physicians services	2.6	-0.1	0.7	0.9	0.5	2.4	1.7	1.8	-0.9	-19.2	17.7	3.0	1.0	2.5	1.6	1.3	0.4					
Dental services	1.3	-0.8	3.6	-0.1	0.2	3.3	0.1	2.1	-6.2	-34.9	38.4	2.8	1.3	7.7	-0.8	2.3	3.8					

Weaker growth

Source: Bureau of Economic Analysis

### A DEEPER DIVE INTO THE DATA





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