

## TYCHOS SECTOR RISK REPORT

		2017	2018	2019	2020	2021 Q3
Total Private Debt	Debt to GDP	157%	156%	157%	171%	161%
	5 year % change	2%	2%	3%	12%	4%
	\$ in billions	\$30,645	\$32,115	\$33,527	\$35,822	\$37,245
Business Debt	Debt to GDP	80%	80%	82%	91%	85%
	5 year % change	14%	13%	12%	21%	11%
	\$ in billions	\$15,498	\$16,513	\$17,428	\$19,112	\$19,658
	Bond Default Rate	0.3%	0.6%	1.0%	1.9%	0.3%
Household Debt	Debt to GDP	78%	76%	75%	80%	76%
	5 year % change	-8%	-8%	-6%	3%	-2%
	\$ in billions	\$15,147	\$15,602	\$16,099	\$16,710	\$17,586
	*Delinquency Rate	3.1%	3.1%	3.2%	2.3%	1.9%

\* Business and Private Debt totals include private placement securities.

\* 90+ Day delinquency rate

## Areas of Concern

Corporate Sectors		2017	2018	2019	2020	2021 Q3
Multi-Family Residential Mortgages	Debt to GDP	7.0%	7.2%	7.6%	8.4%	7.9%
	5 year % change	28%	30%	32%	37%	24%
	\$ in billions	\$1,363	\$1,488	\$1,623	\$1,755	\$1,838
Communication Services	Debt to GDP	7.3%	7.0%	7.5%	7.8%	6.9%
	5 year % change	25%	18%	25%	23%	3%
	\$ in billions	\$1,428	\$1,445	\$1,609	\$1,633	\$1,591
	Default Rate	0.0%	0.0%	0.1%	5.2%	0.0%
Consumer Discretionary	Debt to GDP	6.2%	6.1%	7.4%	8.2%	7.1%
	5 year % change	20%	12%	31%	47%	23%
	\$ in billions	\$1,208	\$1,242	\$1,576	\$1,707	\$1,648
	Default Rate	1.4%	1.6%	0.7%	1.2%	0.0%
Healthcare	Debt to GDP	6.2%	6.5%	6.9%	7.0%	5.7%
	5 year % change	31%	40%	37%	16%	-4%
	\$ in billions	\$1,197	\$1,327	\$1,477	\$1,474	\$1,330
	Default Rate	0.1%	2.2%	2.2%	2.3%	0.0%
Information Technology	Debt to GDP	5.3%	5.0%	5.5%	6.0%	5.3%
	5 year % change	73%	53%	60%	51%	13%
	\$ in billions	\$1,028	\$1,030	\$1,175	\$1,250	\$1,227
	Default Rate	0.3%	0.0%	0.0%	0.2%	0.0%
Automotive	Debt to GDP	2.4%	2.4%	2.5%	2.6%	2.1%
	5 year % change	39%	28%	28%	34%	-1%
	\$ in billions	\$468	\$497	\$526	\$552	\$491
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%

Private Placements		2017	2018	2019	2020	2021 Q3
Private Placement Securities	to GDP	4.9%	4.9%	5.4%	6.7%	6.4%
	5 year % change	46%	34%	38%	54%	45%
	\$ in billions	\$949	\$997	\$1,158	\$1,394	\$1,487

Household Sectors		2017	2018	2019	2020	2021 Q3
Margin Debt	Debt to GDP	3.3%	2.7%	2.7%	3.7%	3.9%
	5 year % change	51%	-5%	-4%	32%	35%
	\$ in billions	\$643	\$554	\$579	\$778	\$903

▲ High Concern
 ▲ Concern
 ▲ Low Concern
 ▲ Current or recent crisis
 + No Current Concern

HY: High-Yield (BB or Lower)

n/a: Data Not Available

## Areas of Concern Continued

Private Debt Lenders		2017	2018	2019	2020	2021 Q3
Agency/GSE backed Mortgage Pools	Debt to GDP	10.9%	11.2%	11.3%	11.6%	10.7%
	5 year % change	23%	20%	20%	19%	6%
	\$ in billions	\$2,125	\$2,291	\$2,405	\$2,427	\$2,474
Federal Government (Student & other loans)	Debt to GDP	6.7%	6.8%	7.0%	8.4%	7.9%
	5 year % change	40%	15%	22%	37%	24%
	\$ in billions	\$1,305	\$1,403	\$1,497	\$1,748	\$1,830
Credit Unions	Debt to GDP	4.7%	4.9%	5.0%	5.3%	5.0%
	5 year % change	34%	35%	30%	28%	16%
	\$ in billions	\$921	\$1,004	\$1,063	\$1,115	\$1,168
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.9%	3.6%	3.9%	4.3%	4.2%
	5 year % change	118%	331%	300%	280%	280%
	\$ in billions	\$376	\$733	\$831	\$904	\$984
Margin Accounts	Debt to GDP	3.3%	2.7%	2.7%	3.7%	3.9%
	5 year % change	51%	-5%	-4%	35%	35%
	\$ in billions	\$643	\$554	\$579	\$778	\$903

Securities Market		2017	2018	2019	2020	2021 Q3
Asset-Backed Securities: CLO	Debt to GDP	2.8%	3.0%	3.2%	3.2%	2.7%
	5 year % change	61%	65%	45%	24%	-4%
	\$ in billions	\$541	\$617	\$686	\$662	\$618

• CLO - Collateralized Loan Obligations

Notional Amount Derivatives by Type		2017	2018	2019	2020	2021 Q3
End User (Non-Trading)	Debt to GDP	14.3%	11.9%	14.4%	18.0%	21.3%
	5 year % change	-49%	-58%	-36%	18%	32%
	\$ in billions	\$2,785	\$2,447	\$3,077	\$3,768	\$4,930
Derivative Activity by Contract Type		2017	2018	2019	2020	2021 Q3
Equities	Debt to GDP	15.8%	16.4%	17.8%	18.1%	20.1%
	5 year % change	30%	37%	21%	37%	38%
	\$ in billions	\$3,080	\$3,374	\$3,796	\$3,775	\$4,649

Refinance Statistics		2017	2018	2019	2020	2021 Q1
Total Combined Cash-out and Second Mortgages/HELOC Consolidation Volume	to GDP	0.5%	0.5%	0.6%	1.1%	1.5%
	5 Year % Change	21%	39%	164%	206%	188%
	\$ in billions	\$94	\$101	\$138	\$228	\$261

▲ High Concern    ▲ Concern    ▲ Low Concern    ▲ Current or recent crisis    + No Current Concern

HY: High-Yield (BB or Lower)

n/a: Data Not Available

## Corporate Debt Summary

Debt by Industry		2017	2018	2019	2020	2021 Q3	
CRE	Debt to GDP	22.2%	22.2%	22.7%	24.5%	23.0%	
	5 year % change	10%	11%	12%	17%	8%	
	\$ in billions	\$4,316	\$4,566	\$4,855	\$5,128	\$5,328	⚠
	Default Rate	n/a	n/a	n/a	n/a	n/a	
	HY Debt to GDP	n/a	n/a	n/a	n/a	n/a	
Utilities	Debt to GDP	7.5%	7.2%	7.6%	8.2%	7.3%	
	5 year % change	-6%	-9%	-5%	3%	-4%	+
	\$ in billions	\$1,464	\$1,470	\$1,618	\$1,718	\$1,692	
	Default Rate	0.0%	0.3%	0.4%	0.3%	0.0%	
	HY Debt to GDP	0.41%	0.30%	0.31%	0.68%	0.65%	
Communication Services	Debt to GDP	7.3%	7.0%	7.5%	7.8%	6.9%	
	5 year % change	25%	18%	25%	23%	3%	⚠
	\$ in billions	\$1,428	\$1,445	\$1,609	\$1,633	\$1,591	
	Default Rate	0.0%	0.0%	0.1%	5.2%	0.0%	
	HY Debt to GDP	1.02%	0.85%	0.93%	0.89%	0.85%	
Industrials	Debt to GDP	9.4%	9.3%	9.6%	10.5%	7.6%	
	5 year % change	-12%	-6%	4%	17%	-7%	⚠
	\$ in billions	\$1,822	\$1,913	\$2,050	\$2,204	\$1,763	
	Default Rate	0.1%	0.2%	0.1%	2.7%	0.0%	
	HY Debt to GDP	0.88%	0.90%	1.10%	1.27%	1.23%	
Consumer Discretionary	Debt to GDP	6.2%	6.1%	7.4%	8.2%	7.1%	
	5 year % change	20%	12%	31%	47%	23%	⚠
	\$ in billions	\$1,208	\$1,242	\$1,576	\$1,707	\$1,648	
	Default Rate	1.4%	1.6%	0.7%	1.2%	0.0%	
	HY Debt to GDP	1.40%	1.28%	1.44%	2.05%	1.85%	
Healthcare	Debt to GDP	6.2%	6.5%	6.9%	7.0%	5.7%	
	5 year % change	31%	40%	37%	16%	-4%	⚠
	\$ in billions	\$1,197	\$1,327	\$1,477	\$1,474	\$1,330	
	Default Rate	0.1%	2.2%	2.2%	2.3%	0.0%	
	HY Debt to GDP	0.61%	0.64%	0.58%	0.55%	0.48%	
Information-Technology	Debt to GDP	5.3%	5.0%	5.5%	6.0%	5.3%	
	5 year % change	73%	53%	60%	51%	13%	⚠
	\$ in billions	\$1,028	\$1,030	\$1,175	\$1,250	\$1,227	
	Default Rate	0.3%	0.0%	0.0%	0.2%	0.0%	
	HY Debt to GDP	0.76%	0.78%	0.66%	0.62%	0.34%	
Energy	Debt to GDP	6.6%	6.1%	6.3%	6.3%	4.9%	
	5 year % change	6%	-7%	-11%	-14%	-31%	+
	\$ in billions	\$1,277	\$1,250	\$1,354	\$1,316	\$1,128	
	Default Rate	0.7%	0.4%	3.0%	3.6%	0.0%	
	HY Debt to GDP	1.21%	0.90%	0.80%	1.00%	0.91%	
Real Estate	Debt to GDP	3.5%	3.4%	3.8%	4.1%	3.7%	
	5 year % change	12%	5%	10%	15%	7%	+
	\$ in billions	\$687	\$695	\$801	\$861	\$856	
	Default Rate	0.0%	0.0%	0.0%	1.0%	0.1%	
	HY Debt to GDP	0.42%	0.40%	0.36%	0.41%	0.38%	
Consumer Staples	Debt to GDP	3.7%	3.8%	3.8%	4.1%	3.2%	
	5 year % change	16%	10%	12%	17%	-13%	+
	\$ in billions	\$728	\$772	\$820	\$853	\$742	
	Default Rate	0.4%	0.3%	2.5%	1.7%	0.0%	
	HY Debt to GDP	0.27%	0.29%	0.30%	0.46%	0.39%	
Materials	Debt to GDP	2.6%	2.5%	2.5%	2.5%	2.0%	
	5 year % change	1%	-5%	-4%	-7%	-19%	+
	\$ in billions	\$499	\$509	\$529	\$512	\$464	
	Default Rate	0.3%	0.0%	0.1%	0.2%	0.0%	
	HY Debt to GDP	0.52%	0.48%	0.47%	0.46%	0.40%	
Memo: Automotive	Debt to GDP	2.4%	2.4%	2.5%	2.6%	2.1%	
	5 year % change	39%	28%	28%	34%	-1%	⚠
	\$ in billions	\$468	\$497	\$526	\$552	\$491	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%	
	HY Debt to GDP	0.19%	0.14%	0.16%	0.70%	0.63%	
Memo: Agriculture	Debt to GDP	2.0%	2.0%	2.0%	2.1%	2.0%	
	5 year % change	10%	5%	-0%	8%	-2%	+
	\$ in billions	\$390	\$402	\$420	\$441	\$454	
	*Delinquency Rate	1.5%	1.7%	1.8%	1.9%	1.2%	
	HY Debt to GDP	n/a	n/a	n/a	n/a	n/a	
Memo: Corporate Sector High-Yield Debt	Debt to GDP	7.5%	6.8%	6.9%	8.4%	7.4%	
	5 year % change	-6%	-12%	-12%	10%	-3%	+
	\$ in billions	\$1,467	\$1,408	\$1,488	\$1,754	\$1,726	

• Corporate sector refers to non-financial corporations and does not include financial institutions

\* Delinquent Commercial Bank loans (30+ Days) as a percentage of total outstanding loans

⚠ High Concern   ⚠ Concern   ⚠ Low Concern   ⚠ Current or recent crisis   + No Current Concern

HY: High-Yield (BB or Lower)   n/a: Data Not Available

## Other Non-Financial Corporate Liabilities

Private Placements		2017	2018	2019	2020	2021 Q3
Private Placement Securities	to GDP	4.9%	4.9%	5.4%	6.7%	6.4%
	5 year % change	46%	34%	38%	54%	45%
	\$ in billions	\$949	\$997	\$1,158	\$1,394	\$1,487

- A Private Placement is a sale of stock shares or bonds to pre-selected investors and institutions rather than on the open market.

## Commercial Real Estate Debt Summary

CRE Debt		2017	2018	2019	2020	2021 Q3
Multi-Family Residential Mortgages	Debt to GDP	7.0%	7.2%	7.6%	8.4%	7.9%
	5 year % change	28%	30%	32%	37%	24%
	\$ in billions	\$1,363	\$1,488	\$1,623	\$1,755	\$1,838
Commercial Mortgages	Debt to GDP	13.9%	13.8%	13.9%	14.8%	13.8%
	5 year % change	2%	3%	4%	8%	1%
	\$ in billions	\$2,716	\$2,832	\$2,965	\$3,081	\$3,195
Farm Mortgages	Debt to GDP	1.2%	1.2%	1.3%	1.4%	1.3%
	5 year % change	14%	9%	12%	22%	8%
	\$ in billions	\$236	\$246	\$268	\$292	\$295
Total CRE Debt	Debt to GDP	22.2%	22.2%	22.7%	24.5%	23.0%
	5 year % change	10%	11%	12%	17%	8%
	\$ in billions	\$4,316	\$4,566	\$4,855	\$5,128	\$5,328
Memo: Construction and Land Development Loans	Debt to GDP	1.7%	1.7%	1.7%	1.8%	1.7%
	5 year % change	39%	37%	25%	22%	7%
	\$ in billions	\$338	\$350	\$362	\$386	\$402
Commercial Real Estate Bank Loans	Charge-Off Rates	0.0%	0.0%	0.0%	0.2%	0.0%
	Delinquency Rates	0.8%	0.7%	0.7%	1.1%	0.9%

- Multi-Family Residential Mortgages are loans secured by housing units in structures with five or more units.
- Commercial Mortgages are loans secured by non-farm non-residential properties, such as office buildings, retail stores, and industrial facilities, as well as construction and land development loans associated with commercial properties.
- Farm mortgages are loans secured by farm properties. In terms of residential real estate, a farm is on a property that generates at least \$1,000 in income from agricultural products. Farm mortgage debt is considered a liability of the non-financial corporate and non-financial non-corporate business sectors.
- Construction and Land Development - Represents loans secured by real estate with maturities of 60 months or less made to finance land development or the on-site construction of industrial, commercial, residential or farm buildings. Includes new construction, additions or alterations to existing structures and razing existing structures to make way for new structures.

## Household Debt Summary

Household debt by type		2017	2018	2019	2020	2021 Q3	
Mortgage Debt	Debt to GDP	77.8%	76.0%	75.3%	80.0%	75.9%	
	5 year % change	-8%	-8%	-6%	3%	-2%	
	\$ in billions	\$15,147	\$15,602	\$16,099	\$16,710	\$17,586	+
	*Delinquency Rate	1.3%	1.1%	1.1%	0.6%	0.5%	
	**CB Delinquency Rate	3.6%	2.8%	2.4%	2.8%	2.3%	
Student Loans	Debt to GDP	7.6%	7.6%	7.7%	8.2%	7.6%	
	5 year % change	18%	12%	9%	8%	1%	
	\$ in billions	\$1,489	\$1,571	\$1,646	\$1,703	\$1,753	+
	*Delinquency Rate	11.0%	11.4%	11.1%	6.5%	5.3%	
	***Alt Delinquency Rate	26.7%	28.1%	28.1%	n/a	n/a	
Auto Loans	Debt to GDP	6.3%	6.2%	6.2%	6.6%	6.2%	
	5 year % change	30%	21%	14%	6%	3%	!
	\$ in billions	\$1,221	\$1,274	\$1,331	\$1,374	\$1,443	
	*Delinquency Rate	4.1%	4.5%	4.9%	4.8%	4.1%	
Credit Cards	Debt to GDP	4.3%	4.2%	4.3%	3.9%	3.5%	
	5 year % change	2%	5%	9%	-6%	-13%	+
	\$ in billions	\$834	\$870	\$927	\$819	\$804	
	*Delinquency Rate	7.6%	7.8%	8.4%	9.4%	8.8%	
Margin Debt	Debt to GDP	3.3%	2.7%	2.7%	3.7%	3.9%	
	5 year % change	51%	-5%	-4%	32%	35%	!
	\$ in billions	\$643	\$554	\$579	\$778	\$903	

\* Delinquent loans (90+ Days) as a percentage of total outstanding loans

\*\* Commercial Bank residential real estate loans secured by one-to-four family properties (30+ days delinquent) as a percentage of total outstanding loans

\*\*\* Delinquent loans (90+ Days) as a percentage of outstanding loans in repayment status

▲ High Concern   
 ▲ Concern   
 ▲ Low Concern   
 ▲ Current or recent crisis   
 + No Current Concern  
 HY: High-Yield (BB or Lower)   
 n/a: Data Not Available

## Student Loan Summary

Total Student Loans		2017	2018	2019	2020	2021 Q3
Student Loans	Debt to GDP	7.6%	7.6%	7.7%	8.2%	7.6%
	5 year % change	18%	12%	9%	8%	1%
	\$ in billions	\$1,489	\$1,571	\$1,646	\$1,703	\$1,753
	*Delinquency Rate	11.0%	11.4%	11.1%	6.5%	5.3%
	***Alt Delinquency Rate	26.7%	28.1%	28.1%	n/a	n/a
Repayment Status	Debt to GDP	3.7%	4.0%	4.0%	4.1%	n/a
	\$ in billions	\$671	\$740	\$784	\$848	n/a



Private Student Loans		2017	2018	2019	2020	2021 Q1
Private Student Loans	Debt/GDP	0.3%	0.3%	0.3%	0.3%	0.3%
	5 Year % Change	-12%	-13%	-16%	-22%	-26%
	\$ in Billions	\$63	\$65	\$64	\$56	\$57
	Delinquent Loans Bil \$	\$1	\$1	\$1	\$1	\$1
	**Delinquency Rate	1.56%	1.67%	1.32%	1.32%	2.46%
Repayment Status	Debt to GDP	0.2%	0.2%	0.2%	0.2%	0.2%
	\$ in billions	\$48	\$50	\$49	\$43	\$42
Deferment Status	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.1%
	\$ in billions	\$12	\$12	\$12	\$10	\$11
Grace Status	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%
	\$ in billions	\$2	\$2	\$2	\$1	\$1
Forbearance Status	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%
	\$ in billions	\$2	\$2	\$2	\$2	\$2



Federally Managed Student Loan Portfolio		2017	2018	2019	2020	2021 Q3
Federal Student Loans	Debt/GDP	7.0%	7.0%	7.1%	7.5%	6.9%
	5 Year % Change	20%	14%	10%	13%	2%
	\$ in Billions	\$1,367	\$1,439	\$1,510	\$1,566	\$1,591
	Delinquent Loans Bil \$	\$178	\$198	\$215	n/a	n/a
	**Delinquency Rate	28.8%	30.1%	29.9%	n/a	n/a
In-School Status	Debt to GDP	0.7%	0.7%	0.6%	0.6%	0.4%
	\$ in billions	\$139	\$138	\$132	\$125	\$101
Repayment Status	Debt to GDP	3.0%	3.2%	3.4%	0.1%	0.1%
	\$ in billions	\$587	\$661	\$719	\$15	\$17
Deferment Status	Debt to GDP	0.6%	0.6%	0.6%	0.6%	0.5%
	\$ in billions	\$120	\$129	\$132	\$117	\$111
Grace Status	Debt to GDP	0.3%	0.2%	0.2%	0.2%	0.2%
	\$ in billions	\$49	\$44	\$45	\$44	\$35
Forbearance Status	Debt to GDP	0.6%	0.6%	0.6%	4.4%	4.3%
	\$ in billions	\$122	\$119	\$130	\$927	\$1,006
Other Status	Debt to GDP	0.1%	0.1%	0.1%	0.0%	0.0%
	\$ in billions	\$10	\$10	\$10	\$9	\$9



- Federally managed student loan portfolio Includes outstanding principal and interest balance of Direct Loans and ED-held FFEL Program Loans; Total Federal Loans include Direct Loans, FFEL and Perkins Loans.

\* Delinquent loans (90+ Days) as a percentage of total outstanding loans

\*\* Delinquent loans (90+ Days) as a percentage of outstanding loans in repayment status

• Delinquency Demographics for Federal Loans have been delayed until March 31, 2022, the first quarter for which borrowers can be delinquent

High Concern 
 Concern 
 Low Concern 
 Current or recent crisis 
 No Current Concern  
 HY: High-Yield (BB or Lower)      n/a: Data Not Available

Fixed Income

Securities Market		2017	2018	2019	2020	2021 Q3	
Total Securities	Debt to GDP	207.6%	205.8%	206.3%	240.0%	223.5%	
	5 year % change	-3%	-3%	-2%	15%	7%	⚠
	\$ in billions	\$40,437	\$42,247	\$44,098	\$50,141	\$51,818	
Municipal Securities	Debt to GDP	19.9%	19.0%	18.6%	18.9%	17.4%	
	5 year % change	-17%	-17%	-16%	-12%	-17%	+
	\$ in billions	\$3,885	\$3,894	\$3,979	\$3,953	\$4,036	
Marketable Treasury Securities	Debt to GDP	74.3%	76.0%	78.0%	100.4%	94.3%	⚠
	5 year % change	9%	8%	9%	39%	27%	
	\$ in billions	\$14,469	\$15,608	\$16,673	\$20,973	\$21,873	
Mortgage Related Securities	Debt to GDP	47.8%	47.4%	47.9%	53.7%	51.3%	
	5 year % change	-12%	-9%	-5%	10%	6%	+
	\$ in billions	\$9,305	\$9,732	\$10,228	\$11,214	\$11,906	
Memo: Mortgage Related Securities: Agency MBS	Debt to GDP	35.6%	35.4%	36.1%	40.4%	39.3%	⚠
	5 year % change	2%	1%	5%	18%	12%	
	\$ in billions	\$6,924	\$7,269	\$7,711	\$8,439	\$9,106	
Memo: Mortgage Related Securities: Agency CMO	Debt to GDP	5.6%	5.4%	5.2%	6.7%	5.9%	
	5 year % change	-31%	-20%	-24%	6%	0%	+
	\$ in billions	\$1,081	\$1,103	\$1,117	\$1,395	\$1,376	
Memo: Mortgage Related Securities: Non-Agency CMBS	Debt to GDP	2.6%	2.7%	2.8%	2.9%	2.7%	
	5 year % change	-34%	-29%	-22%	-14%	-4%	+
	\$ in billions	\$509	\$543	\$596	\$596	\$634	
Memo: Mortgage Related Securities: Non-Agency RMBS	Debt to GDP	4.1%	4.0%	3.8%	3.8%	3.4%	
	5 year % change	-47%	-38%	-33%	-26%	-25%	+
	\$ in billions	\$791	\$817	\$805	\$784	\$790	
Corporate Debt Securities	Debt to GDP	43.0%	41.8%	41.5%	46.7%	43.2%	
	5 year % change	4%	-1%	-2%	11%	1%	+
	\$ in billions	\$8,375	\$8,569	\$8,868	\$9,759	\$10,010	
Federal Agency Securities	Debt to GDP	9.9%	9.0%	8.1%	8.1%	6.2%	
	5 year % change	-23%	-27%	-30%	-26%	-41%	+
	\$ in billions	\$1,935	\$1,842	\$1,726	\$1,694	\$1,447	
Money Market Securities (Commercial Paper)	Debt to GDP	5.0%	4.9%	4.9%	4.7%	4.6%	
	5 year % change	-15%	-14%	-8%	-9%	-2%	+
	\$ in billions	\$966	\$996	\$1,045	\$987	\$1,071	
Asset-Backed Securities	Debt to GDP	7.5%	7.9%	7.8%	7.4%	6.4%	
	5 year % change	-5%	3%	1%	-3%	-15%	+
	\$ in billions	\$1,458	\$1,616	\$1,663	\$1,536	\$1,476	
Memo: Asset-Backed Securities: Automobile*	Debt to GDP	1.0%	1.1%	1.1%	1.0%	0.9%	
	5 year % change	20%	14%	9%	-5%	-9%	+
	\$ in billions	\$203	\$223	\$236	\$206	\$217	
Memo: Asset-Backed Securities: Credit Card*	Debt to GDP	0.7%	0.6%	0.5%	0.3%	0.2%	
	5 year % change	-16%	-18%	-39%	-54%	-66%	+
	\$ in billions	\$129	\$124	\$101	\$68	\$55	
Memo: Asset-Backed Securities: Equipment*	Debt to GDP	0.3%	0.4%	0.4%	0.3%	0.3%	⚠
	5 year % change	12%	43%	16%	10%	16%	
	\$ in billions	\$56	\$84	\$75	\$67	\$74	
Memo: Asset-Backed Securities: Other*	Debt to GDP	0.9%	1.0%	1.1%	1.1%	1.0%	
	5 year % change	35%	36%	47%	36%	14%	⚠
	\$ in billions	\$179	\$206	\$235	\$225	\$223	
Memo: Asset-Backed Securities: Student Loans*	Debt to GDP	0.9%	0.8%	0.7%	0.7%	0.6%	
	5 year % change	-37%	-39%	-40%	-38%	-37%	+
	\$ in billions	\$177	\$171	\$159	\$144	\$147	
Memo: Asset-Backed Securities: CLO*	Debt to GDP	2.8%	3.0%	3.2%	3.2%	2.7%	
	5 year % change	61%	65%	45%	24%	-4%	⚠
	\$ in billions	\$541	\$617	\$686	\$662	\$618	
Memo: Asset-Backed Securities: CDO/SF/Other*	Debt to GDP	0.9%	0.9%	0.8%	0.8%	0.7%	
	5 year % change	-58%	-46%	-42%	-23%	-19%	+
	\$ in billions	\$173	\$191	\$173	\$166	\$167	

• MBS - Mortgage Backed Securities  
 • CMO - Collateralized Mortgage Obligation  
 • CMBS - Commercial Mortgage Backed Securities  
 • RMBS - Residential Mortgage Backed Securities  
 • CDO - Collateralized Debt Obligation  
 • CLO - Collateralized Loan Obligation  
 • SF - Structured Finance  
 \*2021 Q1 Data

⚠ High Concern   ⚠ Concern   ⚠ Low Concern   ⚠ Current or recent crisis   + No Current Concern

HY: High-Yield (BB or Lower)   n/a: Data Not Available



Private Debt by Lender/Holder

Private Debt Lenders		2017	2018	2019	2020	2021 Q3	
US Chartered Depository Institutions	Debt to GDP	45.2%	44.9%	44.6%	46.7%	41.7%	+
	5 year % change	4%	6%	4%	6%	-7%	+
	\$ in billions	\$8,808	\$9,214	\$9,526	\$9,753	\$9,661	
Non-Financial Corporations, Debt Securities	Debt to GDP	36.6%	35.6%	36.2%	41.1%	38.3%	!
	5 year % change	17%	10%	9%	18%	8%	!
	\$ in billions	\$7,126	\$7,310	\$7,741	\$8,594	\$8,888	
Government Sponsored Enterprises	Debt to GDP	26.7%	26.0%	25.8%	29.4%	29.0%	+
	5 year % change	-10%	-10%	-7%	9%	10%	+
	\$ in billions	\$5,197	\$5,337	\$5,507	\$6,133	\$6,725	
Agency/GSE backed Mortgage Pools	Debt to GDP	10.9%	11.2%	11.3%	11.6%	10.7%	!
	5 year % change	23%	20%	20%	19%	6%	!
	\$ in billions	\$2,125	\$2,291	\$2,405	\$2,427	\$2,474	
Federal Government (Student & other loans)	Debt to GDP	6.7%	6.8%	7.0%	8.4%	7.9%	!
	5 year % change	40%	15%	22%	37%	24%	!
	\$ in billions	\$1,305	\$1,403	\$1,497	\$1,748	\$1,830	
Credit Unions	Debt to GDP	4.7%	4.9%	5.0%	5.3%	5.0%	!
	5 year % change	34%	35%	30%	28%	16%	!
	\$ in billions	\$921	\$1,004	\$1,063	\$1,115	\$1,168	
Issuers of Asset-Backed Securities	Debt to GDP	4.8%	4.5%	4.5%	4.8%	4.4%	+
	5 year % change	-49%	-38%	-31%	-21%	-18%	+
	\$ in billions	\$929	\$930	\$971	\$994	\$1,025	
Finance Companies	Debt to GDP	4.8%	4.5%	4.3%	4.4%	4.1%	+
	5 year % change	-27%	-29%	-31%	-17%	-18%	+
	\$ in billions	\$929	\$931	\$924	\$922	\$946	
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.9%	3.6%	3.9%	4.3%	4.2%	!
	5 year % change	118%	331%	300%	280%	280%	!
	\$ in billions	\$376	\$733	\$831	\$904	\$984	
Margin Accounts	Debt to GDP	3.3%	2.7%	2.7%	3.7%	3.9%	!
	5 year % change	51%	-5%	-4%	35%	35%	!
	\$ in billions	\$643	\$554	\$579	\$778	\$903	

• Non-Financial Corporations, Debt Securities include private placement securities.

Financial Sector Debt

Financial Sector		2017	2018	2019	2020	2021 Q3	
Domestic Financial Sector	Debt to GDP	78.6%	76.1%	74.5%	80.4%	75.3%	+
	5 year % change	-10%	-11%	-11%	0%	-6%	+
	\$ in billions	\$15,315	\$15,612	\$15,931	\$16,799	\$17,465	
Debt Securities	Debt to GDP	68.2%	66.2%	65.4%	71.2%	66.8%	+
	5 year % change	-13%	-12%	-10%	3%	-3%	+
	\$ in billions	\$13,276	\$13,585	\$13,977	\$14,874	\$15,492	
Memo: Bond Default Rate		0.6%	0.2%	0.2%	0.2%	0.2%	
Memo: Debt Securities: Open Market Paper	Debt to GDP	2.0%	2.1%	1.9%	1.9%	1.9%	+
	5 year % change	-47%	-35%	-31%	-21%	-23%	+
	\$ in billions	\$397	\$431	\$398	\$391	\$436	
Memo: Debt Securities: Agency Securities	Debt to GDP	45.4%	44.3%	44.0%	48.2%	45.4%	+
	5 year % change	-2%	-4%	-3%	8%	1%	+
	\$ in billions	\$8,843	\$9,090	\$9,408	\$10,066	\$10,516	
Memo: Debt Securities: Corporate and Foreign Bonds	Debt to GDP	20.7%	19.8%	19.5%	21.1%	19.6%	+
	5 year % change	-25%	-23%	-21%	-5%	-10%	+
	\$ in billions	\$4,036	\$4,064	\$4,170	\$4,417	\$4,540	
Loans	Debt to GDP	10.5%	9.9%	9.2%	9.2%	8.5%	+
	5 year % change	7%	-6%	-17%	-15%	-22%	+
	\$ in billions	\$2,038	\$2,027	\$1,955	\$1,925	\$1,972	
Memo: Loans: Depository Institution Loans	Debt to GDP	1.6%	1.5%	1.4%	1.8%	1.8%	!
	5 year % change	17%	9%	-5%	14%	14%	!
	\$ in billions	\$301	\$311	\$305	\$381	\$425	
Memo: Loans: Other Loans and Advances	Debt to GDP	7.7%	7.3%	6.7%	6.3%	5.8%	+
	5 year % change	6%	-7%	-19%	-21%	-29%	+
	\$ in billions	\$1,495	\$1,490	\$1,425	\$1,317	\$1,337	
Memo: Loans: Equity REIT Mortgages	Debt to GDP	1.2%	1.1%	1.1%	1.1%	0.9%	+
	5 year % change	4%	-13%	-20%	-16%	-27%	+
	\$ in billions	\$242	\$226	\$224	\$227	\$210	

• REIT: Real Estate Investment Trust

! High Concern    ! Concern    ! Low Concern    ! Current or recent crisis    + No Current Concern

HY: High-Yield (BB or Lower)    n/a: Data Not Available



## Repurchase Agreements (Primary Dealer) By Security Type

Repurchase Agreements		2017	2018	2019	2020	2021 Q3	
Total	Debt to GDP	11.4%	10.6%	11.9%	12.5%	10.3%	
	5 year % change	-33%	-33%	-13%	3%	-13%	+
	\$ in billions	\$2,223	\$2,191	\$2,552	\$2,607	\$2,381	
Asset Backed Securities	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.0%	
	5 year % change	n/a	n/a	n/a	-62%	-67%	+
	\$ in billions	\$20	\$18	\$18	\$14	\$10	
Corporate Bonds	Debt to GDP	0.4%	0.3%	0.3%	0.3%	0.3%	
	5 year % change	n/a	-21%	-32%	-15%	-6%	+
	\$ in billions	\$70	\$67	\$62	\$69	\$72	
Equities	Debt to GDP	0.3%	0.3%	0.3%	0.3%	0.4%	
	5 year % change	n/a	-19%	-41%	-42%	54%	⚠
	\$ in billions	\$54	\$61	\$56	\$53	\$97	
Federal Agency	Debt to GDP	0.2%	0.1%	0.1%	0.1%	0.1%	
	5 year % change	n/a	-80%	-76%	-66%	-58%	+
	\$ in billions	\$30	\$28	\$25	\$24	\$19	
Mortgage Backed Securities	Debt to GDP	1.9%	1.9%	2.2%	2.4%	1.5%	
	5 year % change	n/a	-50%	-24%	9%	-22%	+
	\$ in billions	\$380	\$396	\$464	\$499	\$348	
Other	Debt to GDP	0.3%	0.2%	0.2%	0.2%	0.1%	
	5 year % change	n/a	-64%	-65%	-61%	-63%	+
	\$ in billions	\$49	\$43	\$43	\$38	\$32	
Treasury Securities	Debt to GDP	7.5%	7.0%	8.1%	8.4%	7.0%	
	5 year % change	n/a	-23%	1%	15%	-9%	⚠
	\$ in billions	\$1,472	\$1,434	\$1,729	\$1,748	\$1,627	
Treasury Inflation-Protected Securities	Debt to GDP	0.8%	0.7%	0.7%	0.8%	0.8%	
	5 year % change	n/a	-30%	-24%	-11%	-10%	+
	\$ in billions	\$161	\$141	\$156	\$164	\$176	
Reverse Repurchase Agreements		2017	2018	2019	2020	2021 Q3	
Total	Debt to GDP	9.1%	8.2%	9.1%	9.3%	7.7%	
	5 year % change	-32%	-31%	-13%	-3%	-21%	+
	\$ in billions	\$1,773	\$1,689	\$1,955	\$1,946	\$1,779	
Asset Backed Securities	Debt to GDP	0.1%	0.1%	0.0%	0.0%	0.0%	
	5 year % change	n/a	n/a	n/a	-71%	-77%	+
	\$ in billions	\$12	\$10	\$9	\$7	\$5	
Corporate Bonds	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.1%	
	5 year % change	n/a	-38%	-48%	-43%	-23%	+
	\$ in billions	\$16	\$15	\$14	\$15	\$17	
Equities	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%	
	5 year % change	n/a	n/a	-92%	-85%	n/a	+
	\$ in billions	\$0	\$0	\$0	\$0	\$0	
Federal Agency	Debt to GDP	0.1%	0.1%	0.0%	0.0%	0.0%	
	5 year % change	n/a	-88%	-83%	-78%	-73%	+
	\$ in billions	\$10	\$9	\$9	\$7	\$6	
Mortgage Backed Securities	Debt to GDP	1.1%	1.1%	1.1%	1.1%	0.7%	
	5 year % change	n/a	-61%	-43%	-30%	-43%	+
	\$ in billions	\$210	\$216	\$242	\$227	\$161	
Other	Debt to GDP	0.2%	0.1%	0.1%	0.1%	0.1%	
	5 year % change	n/a	-67%	-66%	-68%	-74%	+
	\$ in billions	\$29	\$23	\$24	\$20	\$14	
Treasury Securities	Debt to GDP	6.8%	6.2%	7.0%	7.2%	6.1%	
	5 year % change	n/a	-19%	0%	10%	-14%	+
	\$ in billions	\$1,329	\$1,270	\$1,498	\$1,507	\$1,408	
Treasury Inflation-Protected Securities	Debt to GDP	0.9%	0.7%	0.7%	0.8%	0.7%	
	5 year % change	n/a	-10%	-11%	-7%	-17%	+
	\$ in billions	\$170	\$147	\$160	\$163	\$169	

• Amounts are average daily outstanding balances

⚠ High Concern    Concern    ⚠ Low Concern    ⚠ Current or recent crisis    + No Current Concern

HY: High-Yield (BB or Lower)    n/a: Data Not Available

## Portfolio Loans &amp; Investment (Total Economy) - U.S. into Foreign Countries

Long Term Debt Security Investment		2017	2018	2019	2020	2021 Q2	
United States Holdings of Long Term Foreign Debt Securities	to GDP	14.4%	13.9%	14.7%	16.1%	15.2%	
	5 year % change	1%	-1%	3%	26%	16%	⚠
	\$ in billions	\$2,822	\$2,873	\$3,144	\$3,373	\$3,448	
Cayman Islands	to GDP	2.0%	2.0%	2.3%	2.5%	n/a	
	5 year % change	51%	41%	51%	56%	n/a	⚠
	\$ in billions	\$398	\$421	\$502	\$531	n/a	
United Kingdom	to GDP	1.7%	1.8%	1.9%	2.2%	n/a	
	5 year % change	-10%	1%	10%	33%	n/a	⚠
	\$ in billions	\$328	\$370	\$412	\$453	n/a	
Canada	to GDP	1.9%	1.8%	1.8%	2.0%	n/a	
	5 year % change	-19%	-19%	-16%	11%	n/a	+
	\$ in billions	\$372	\$374	\$387	\$410	n/a	
Long Term Equity Investment		2017	2018	2019	2020	2021 Q2	
United States Holdings of Long Term Corporate Stocks	to GDP	46.3%	38.2%	44.0%	50.1%	51.6%	
	5 year % change	40%	-1%	15%	35%	42%	⚠
	\$ in billions	\$9,046	\$7,870	\$9,436	\$10,490	\$11,718	
Cayman Islands	to GDP	6.6%	6.0%	6.7%	9.2%	n/a	
	5 year % change	91%	46%	42%	85%	n/a	⚠
	\$ in billions	\$1,294	\$1,236	\$1,443	\$1,935	n/a	
Japan	to GDP	4.6%	3.7%	4.3%	4.9%	n/a	
	5 year % change	74%	3%	29%	28%	n/a	⚠
	\$ in billions	\$902	\$766	\$931	\$1,015	n/a	
United Kingdom	to GDP	5.6%	4.4%	4.7%	4.4%	n/a	
	5 year % change	20%	-23%	-9%	-12%	n/a	+
	\$ in billions	\$1,087	\$911	\$1,013	\$912	n/a	
Loans		2017	2018	2019	2020	2021 Q2	
United States Holdings of Foreign Loans	to GDP	2.7%	2.8%	2.9%	3.2%	3.5%	
	5 year % change	101%	72%	50%	35%	25%	⚠
	\$ in billions	\$511	\$544	\$596	\$690	\$799	
United States Holdings of Foreign Loans: Bank Loans	to GDP	2.5%	2.5%	2.7%	2.9%	3.3%	
	5 year % change	111%	76%	53%	36%	26%	⚠
	\$ in billions	\$475	\$487	\$546	\$632	\$744	
United States Holdings of Foreign Loans: Other Loans	to GDP	0.2%	0.3%	0.3%	0.3%	0.2%	
	5 year % change	22%	42%	19%	26%	21%	⚠
	\$ in billions	\$36	\$56	\$51	\$58	\$55	

- Total Economy includes Financial, Non-Financial and General Government sectors
- Loans include short term and long term

⚠ High Concern   ⚠ Concern   ⚠ Low Concern   ⚠ Current or recent crisis   + No Current Concern

HY: High-Yield (BB or Lower)

n/a: Data Not Available

Portfolio Investment (Total Economy) - Foreign Countries into the U.S.

Long Term Treasury Bond Investment		2017	2018	2019	2020	2021 Q2	
Foreign Holdings of United State's Long Term Treasury Securities Bonds	to GDP	28.3%	26.9%	28.7%	28.9%	28.9%	+
	5 year % change	1%	-11%	-5%	-7%	-4%	+
	\$ in billions	\$5,508	\$5,523	\$6,128	\$6,043	\$6,572	
Japan	to GDP	5.1%	4.8%	5.1%	5.7%	5.3%	+
	5 year % change	-19%	-26%	-23%	-15%	-8%	+
	\$ in billions	\$998	\$979	\$1,093	\$1,185	\$1,214	
China	to GDP	6.1%	5.4%	5.0%	4.9%	4.7%	+
	5 year % change	-18%	-27%	-33%	-30%	-30%	+
	\$ in billions	\$1,181	\$1,117	\$1,067	\$1,033	\$1,059	
United Kingdom	to GDP	1.1%	1.2%	1.6%	1.8%	2.1%	!
	5 year % change	83%	80%	94%	107%	91%	!
	\$ in billions	\$211	\$246	\$334	\$372	\$467	
Long Term Agency Bond Investment		2017	2018	2019	2020	2021 Q2	
Foreign Holdings of United State's Long Term Agency Bonds	to GDP	5.1%	5.2%	5.5%	5.7%	5.5%	!
	5 year % change	-24%	-13%	9%	16%	8%	!
	\$ in billions	\$995	\$1,077	\$1,185	\$1,184	\$1,253	
Japan	to GDP	1.2%	1.3%	1.4%	1.5%	1.4%	!
	5 year % change	-25%	-13%	32%	63%	29%	!
	\$ in billions	\$241	\$272	\$305	\$308	\$311	
Taiwan	to GDP	1.2%	1.3%	1.2%	1.3%	1.1%	!
	5 year % change	35%	66%	53%	25%	-1%	!
	\$ in billions	\$234	\$261	\$262	\$262	\$250	
China	to GDP	0.9%	0.9%	1.1%	1.0%	1.0%	+
	5 year % change	-42%	-16%	-11%	-15%	-9%	+
	\$ in billions	\$171	\$189	\$232	\$212	\$218	
Long Term Corporate & Other Bond Investment		2017	2018	2019	2020	2021 Q2	
Foreign Holdings of United State's Long Term Corporate & Other Bonds	to GDP	20.7%	18.3%	19.5%	22.1%	20.5%	!
	5 year % change	24%	8%	14%	27%	8%	!
	\$ in billions	\$4,040	\$3,758	\$4,161	\$4,608	\$4,661	
Luxembourg	to GDP	3.2%	3.0%	3.3%	3.8%	3.4%	!
	5 year % change	48%	20%	20%	32%	15%	!
	\$ in billions	\$629	\$624	\$699	\$784	\$771	
Belgium	to GDP	3.1%	2.6%	2.8%	3.0%	2.8%	!
	5 year % change	50%	35%	51%	50%	20%	!
	\$ in billions	\$595	\$530	\$598	\$624	\$630	
Cayman Islands	to GDP	2.5%	2.4%	2.5%	2.9%	2.7%	!
	5 year % change	2%	10%	16%	43%	21%	!
	\$ in billions	\$482	\$488	\$537	\$600	\$622	
Long Term Equity Investment		2017	2018	2019	2020	2021 Q2	
Foreign Holdings of United State's Long Term Corporate Stocks	to GDP	40.8%	36.9%	42.2%	55.1%	59.3%	!
	5 year % change	66%	31%	21%	45%	78%	!
	\$ in billions	\$7,958	\$7,573	\$9,026	\$11,517	\$13,484	
United Kingdom	to GDP	4.9%	4.7%	4.8%	6.0%	6.8%	!
	5 year % change	74%	47%	19%	27%	70%	!
	\$ in billions	\$955	\$955	\$1,019	\$1,245	\$1,538	
Cayman Islands	to GDP	5.2%	4.5%	4.9%	6.3%	6.5%	!
	5 year % change	66%	26%	10%	29%	52%	!
	\$ in billions	\$1,018	\$932	\$1,045	\$1,325	\$1,482	
Canada	to GDP	4.7%	4.0%	4.8%	6.0%	6.5%	!
	5 year % change	76%	19%	11%	32%	75%	!
	\$ in billions	\$912	\$816	\$1,028	\$1,255	\$1,481	

• Total Economy includes Financial, Non-Financial and General Government sectors

! High Concern    ! Concern    ! Low Concern    ! Current or recent crisis    + No Current Concern

HY: High-Yield (BB or Lower)

n/a: Data Not Available

## Derivative Activity

Notional Amounts by Type		2017	2018	2019	2020	2021 Q3	
Dealer (Trading)	Debt to GDP	847.1%	826.4%	769.4%	751.4%	757.7%	+
	5 year % change	-33%	-37%	-35%	-20%	-15%	+
	\$ in billions	\$165,002	\$169,636	\$164,441	\$156,997	\$175,696	
End User (Non-Trading)	Debt to GDP	14.3%	11.9%	14.4%	18.0%	21.3%	!
	5 year % change	-49%	-58%	-36%	18%	32%	!
	\$ in billions	\$2,785	\$2,447	\$3,077	\$3,768	\$4,930	
Credit Derivatives	Debt to GDP	21.5%	20.8%	18.5%	14.5%	16.6%	+
	5 year % change	-74%	-69%	-66%	-62%	-52%	+
	\$ in billions	\$4,186	\$4,270	\$3,945	\$3,034	\$3,854	
Total Notional	Debt to GDP	882.8%	859.1%	802.3%	784.0%	795.6%	+
	5 year % change	-35%	-39%	-36%	-21%	-16%	+
	\$ in billions	\$171,973	\$176,353	\$171,462	\$163,799	\$184,480	
Derivative Activity by Contract Type		2017	2018	2019	2020	2021 Q3	
Interest Rate	Debt to GDP	669.5%	624.4%	585.1%	555.2%	568.3%	+
	5 year % change	-39%	-46%	-41%	-27%	-20%	+
	\$ in billions	\$130,417	\$128,166	\$125,056	\$116,000	\$131,769	
Foreign Exchange	Debt to GDP	168.9%	191.1%	173.9%	189.5%	183.3%	+
	5 year % change	-0%	13%	-8%	7%	2%	+
	\$ in billions	\$32,903	\$39,221	\$37,170	\$39,596	\$42,504	
Equities	Debt to GDP	15.8%	16.4%	17.8%	18.1%	20.1%	!
	5 year % change	30%	37%	21%	37%	38%	!
	\$ in billions	\$3,080	\$3,374	\$3,796	\$3,775	\$4,649	
Commodities	Debt to GDP	7.0%	6.4%	7.0%	6.7%	7.3%	+
	5 year % change	-18%	-11%	1%	10%	5%	+
	\$ in billions	\$1,373	\$1,315	\$1,495	\$1,395	\$1,703	
Credit Derivatives	Debt to GDP	21.5%	20.8%	18.5%	14.5%	16.6%	+
	5 year % change	-74%	-69%	-66%	-62%	-52%	+
	\$ in billions	\$4,186	\$4,270	\$3,945	\$3,034	\$3,854	
Total Notional	Debt to GDP	882.8%	859.1%	802.3%	784.0%	795.6%	+
	5 year % change	-35%	-39%	-36%	-21%	-16%	+
	\$ in billions	\$171,973	\$176,353	\$171,462	\$163,799	\$184,480	
Derivative Activity by Product		2017	2018	2019	2020	2021 Q3	
Futures & Forwards	Debt to GDP	176.6%	176.1%	162.8%	154.8%	152.3%	+
	5 year % change	-31%	-26%	-34%	-21%	-23%	+
	\$ in billions	\$34,407	\$36,144	\$34,787	\$32,350	\$35,311	
Total Options	Debt to GDP	199.4%	185.2%	169.0%	153.1%	147.6%	+
	5 year % change	7%	-3%	-8%	-10%	-10%	+
	\$ in billions	\$38,841	\$38,009	\$36,117	\$31,991	\$34,233	
Total Swaps	Debt to GDP	485.3%	477.0%	452.1%	461.5%	479.1%	+
	5 year % change	-42%	-47%	-41%	-22%	-13%	+
	\$ in billions	\$94,524	\$97,923	\$96,614	\$96,423	\$111,081	
Credit Derivatives	Debt to GDP	21.5%	20.8%	18.5%	14.5%	16.6%	+
	5 year % change	-74%	-69%	-66%	-62%	-52%	+
	\$ in billions	\$4,186	\$4,270	\$3,945	\$3,034	\$3,854	
Total Notional	Debt to GDP	882.8%	859.1%	802.3%	784.0%	795.6%	+
	5 year % change	-35%	-39%	-36%	-21%	-16%	+
	\$ in billions	\$171,973	\$176,353	\$171,462	\$163,799	\$184,480	

! High Concern  
 ! Concern  
 ! Low Concern  
 ! Current or recent crisis  
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## Derivative Net Credit Risk

Credit Risk by Contract Type		2017	2018	2019	2020	2021 Q3
Total Gross Positive Fair Values (GPFV)	to GDP	9.4%	8.5%	9.0%	12.7%	9.1%
	\$ in billions	\$1,833	\$1,738	\$1,925	\$2,654	\$2,103
Interest Rate - GPFV	to GDP	6.0%	4.9%	6.1%	8.6%	5.7%
	\$ in billions	\$1,173	\$1,007	\$1,296	\$1,792	\$1,313
Foreign Exchange - GPFV	to GDP	2.3%	2.5%	2.0%	2.9%	2.1%
	\$ in billions	\$441	\$511	\$423	\$601	\$476
Equity - GPFV	to GDP	0.5%	0.6%	0.6%	0.9%	0.8%
	\$ in billions	\$108	\$132	\$120	\$185	\$173
Commodities - GPFV	to GDP	0.3%	0.2%	0.2%	0.2%	0.4%
	\$ in billions	\$53	\$44	\$38	\$47	\$102
Credit - GPFV	to GDP	0.3%	0.2%	0.2%	0.2%	0.2%
	\$ in billions	\$59	\$43	\$47	\$31	\$38
Credit Risk by Contract Type		2017	2018	2019	2020	2021 Q3
Total Gross Negative Fair Values (GNFV)	to GDP	9.2%	8.2%	8.8%	12.5%	8.7%
	\$ in billions	\$1,783	\$1,675	\$1,887	\$2,607	\$2,026
Interest Rate - GNFV	to GDP	5.8%	4.7%	5.8%	8.2%	5.4%
	\$ in billions	\$1,124	\$960	\$1,246	\$1,721	\$1,250
Foreign Exchange - GNFV	to GDP	2.2%	2.4%	2.0%	2.9%	2.0%
	\$ in billions	\$430	\$500	\$431	\$612	\$465
Equity - GNFV	to GDP	0.6%	0.6%	0.6%	0.9%	0.8%
	\$ in billions	\$115	\$126	\$121	\$192	\$184
Commodities - GNFV	to GDP	0.3%	0.2%	0.2%	0.2%	0.4%
	\$ in billions	\$54	\$46	\$39	\$47	\$87
Credit - GNFV	to GDP	0.3%	0.2%	0.2%	0.2%	0.2%
	\$ in billions	\$60	\$43	\$48	\$34	\$41
Credit Risk - All Derivatives		2017	2018	2019	2020	2021 Q3
Total Netting Benefit	to GDP	13.2%	7.7%	6.8%	7.3%	10.3%
	\$ in billions	\$2,463	\$1,495	\$1,397	\$1,558	\$2,147
Net Current Credit Exposure (NCCE)	Debt to GDP	1.7%	1.7%	1.7%	2.4%	2.0%
	5 year % change	-27%	-6%	-32%	12%	-24%
	\$ in billions	\$337	\$341	\$368	\$507	\$453
Net Current Credit Exposure by Counterparty		2017	2018	2019	2020	2021 Q3
Banks & Securities Firms	to GDP	0.7%	0.7%	0.8%	1.0%	0.7%
	\$ in billions	\$141	\$142	\$163	\$202	\$156
Hedge Funds	to GDP	0.1%	0.1%	0.0%	0.1%	0.1%
	\$ in billions	\$10	\$17	\$9	\$11	\$11
Sovereign Governments	to GDP	0.1%	0.2%	0.2%	0.2%	0.1%
	\$ in billions	\$27	\$34	\$34	\$42	\$31
Corporate and All Other Counterparties	to GDP	0.8%	0.7%	0.8%	1.2%	1.1%
	\$ in billions	\$159	\$147	\$162	\$253	\$255



- The credit risk in a derivative contract is a function of a number of variables, such as whether counterparties exchange notional principal, the volatility of the underlying market factors (interest rate, currency, commodity, equity, or corporate reference entity), the maturity and liquidity of the contract, and the creditworthiness of the counterparty.
- Gross Positive Fair Value - The total of all contracts with positive value to the bank. GPFV is the initial measurement of credit exposure of banks and savings institutions.
- Gross Negative Fair Value - The total of all contracts with negative value to the bank. GNFV represents the level of exposure the banks pose to their counterparties.
- Net Current Credit Exposure = GPFV less the dollar amount of netting benefits with a specific counterparty.

▲ High Concern

▲ Concern ▲ Low Concern

▲ Current or recent crisis

● No Current Concern

HY: High-Yield (BB or Lower)

n/a: Data Not Available

## Largest Individual Lenders

Lending Institutions		2017	2018	2019	2020	2021 Q3	
JP Morgan	Loans to GDP	4.9%	4.9%	4.8%	5.0%	4.7%	+
	5 year % change	9%	13%	12%	10%	0%	
	\$ in billions	\$954	\$1,003	\$1,024	\$1,053	\$1,094	
	Charge-off Rate	0.6%	0.5%	0.6%	0.5%	n/a	
	Criticized Assets (% of Total Loans)	1.6%	1.2%	1.5%	4.0%	3.8%	
Citigroup	Loans to GDP	3.4%	3.3%	3.3%	3.2%	2.9%	+
	5 year % change	-15%	-16%	-11%	-5%	-16%	
	\$ in billions	\$668	\$685	\$700	\$677	\$666	
	Charge-off Rate	1.1%	1.1%	1.1%	1.1%	n/a	
	Criticized Assets (% of Total Loans)	n/a	n/a	4.4%	10.4%	7.2%	
Wells Fargo	Loans to GDP	4.9%	4.6%	4.5%	4.3%	3.7%	+
	5 year % change	-1%	-5%	-9%	-16%	-28%	
	\$ in billions	\$961	\$953	\$965	\$890	\$863	
	Charge-off Rate	0.3%	0.3%	0.3%	0.3%	0.2%	
	Criticized Assets (% of Total Loans)	2.3%	2.2%	2.1%	3.7%	3.6%	
Bank of America	Loans to GDP	4.8%	4.6%	4.6%	4.4%	4.0%	+
	5 year % change	-14%	-16%	-8%	-10%	-17%	
	\$ in billions	\$937	\$947	\$983	\$928	\$928	
	Charge-off Rate	0.5%	0.4%	0.4%	0.4%	0.3%	
	Criticized Assets (% of Total Loans)	1.5%	1.2%	1.2%	3.9%	2.6%	
Fannie Mae	Loans to GDP	16.3%	15.8%	15.6%	17.5%	16.9%	+
	5 year % change	-10%	-12%	-9%	6%	4%	
	\$ in billions	\$3,174	\$3,242	\$3,334	\$3,659	\$3,906	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	
Freddie Mac	Loans to GDP	9.4%	9.2%	9.3%	11.3%	11.7%	⚠
	5 year % change	-8%	-8%	-3%	19%	25%	
	\$ in billions	\$1,838	\$1,887	\$1,987	\$2,352	\$2,717	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	

• Criticized Assets are assets rated special mention, substandard, doubtful, or loss as defined by the agencies' uniform loan classification standards. Includes performing and non-performing criticized assets

⚠ High Concern  
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Real Estate

Total Debt		2017	2018	2019	2020	2021 Q3
Total Residential Mortgage Debt (1-4 Family)	Debt to GDP	54.4%	53.1%	52.3%	55.8%	52.9%
	5 Year % Change	-12%	-10%	-8%	1%	-3%
	\$ in billions	\$10,596	\$10,897	\$11,187	\$11,653	\$12,271
	Delinquency Rate	1.3%	1.1%	1.1%	0.6%	0.5%
	Forbearance Share	n/a	n/a	n/a	5.5%	3.0%
Memo: Household Residential Mortgage Debt (1-4 Family)	Debt to GDP	51.0%	49.7%	49.0%	52.3%	49.6%
	5 Year % Change	-13%	-11%	-8%	0%	-3%
	\$ in billions	\$9,929	\$10,204	\$10,481	\$10,920	\$11,497
Memo: Non Financial Corporate Business Residential Mortgage Debt (1-4 Family)	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.1%
	5 Year % Change	39%	41%	23%	9%	1%
	\$ in billions	\$16	\$17	\$17	\$17	\$19
Memo: Non Financial Non Corporate Business Residential Mortgage Debt (1-4 Family)	Debt to GDP	3.3%	3.3%	3.2%	3.4%	3.3%
	5 Year % Change	8%	8%	5%	9%	2%
	\$ in billions	\$651	\$676	\$689	\$716	\$755
Home Equity Loans Outstanding	Debt to GDP	2.9%	2.6%	2.4%	2.1%	1.7%
	5 Year % Change	-38%	-38%	-39%	-40%	-47%
	\$ in billions	\$570	\$533	\$501	\$442	\$403
Total Commercial Real Estate Debt	Debt to GDP	22.2%	22.2%	22.7%	24.5%	23.0%
	5 Year % Change	10%	11%	12%	17%	8%
	\$ in billions	\$4,316	\$4,566	\$4,855	\$5,128	\$5,328

• Forbearance share is equal to loans outstanding in forbearance divided by total outstanding loans

Monthly Residential Housing Summary		Apr-2021	May-2021	Jun-2021	Jul-2021	Aug-2021	Sep-2021
New Home Sales	Volume	796,000	733,000	683,000	704,000	693,000	742,000
	Annual Change	36.8%	4.1%	-18.6%	-27.6%	-29.1%	-23.6%
Existing Home Sales	Volume	5,850,000	5,780,000	5,870,000	6,000,000	5,880,000	6,290,000
	Annual Change	n/a	n/a	n/a	n/a	n/a	n/a
Housing Starts	Volume	1,514,000	1,594,000	1,657,000	1,562,000	1,573,000	1,550,000
	Annual Change	61.4%	52.4%	30.2%	4.3%	14.3%	7.0%
Home Price Index (Case-Shiller 20 City Composite)	Index (2000=100)	257.40	262.13	266.77	270.73	273.87	276.51
	Annual Change	15.2%	17.3%	19.2%	20.0%	19.7%	19.1%

Refinance Statistics		2017	2018	2019	2020	2021 Q1
Home Equity Cash-out Volume	to GDP	0.4%	0.4%	0.5%	0.7%	0.8%
	5 Year % Change	98%	140%	254%	209%	227%
	\$ in billions	\$71	\$87	\$108	\$153	\$175
Second Mortgages/HELOC Consolidation Volume	to GDP	0.1%	0.1%	0.1%	0.4%	0.3%
	5 Year % Change	-45%	-60%	37%	198%	210%
	\$ in billions	\$23	\$15	\$30	\$75	\$87
Total Combined Cash-out and Second Mortgages/HELOC Consolidation Volume	to GDP	0.5%	0.5%	0.6%	1.1%	1.5%
	5 Year % Change	21%	39%	164%	206%	188%
	\$ in billions	\$94	\$101	\$138	\$228	\$261

- Refinance statistics are for Prime Conventional Loans only.
- Cash-out volume indicates the dollar volume of equity cashed-out through the refinancing of prime, first-lien conventional mortgages. It is calculated using Freddie Mac's estimate of prime, conventional mortgage originations volume, the refi share of originations, and the values in Column 1 of this sheet. We do not estimate how much equity is taken out through the refinancing of FHA or VA loans or through refinance loans originated in the subprime market.
- Second Mortgages/HELOC indicates the total increase in the principal balances of refinanced first-lien mortgages due to the consolidation of existing second mortgages or home-equity lines of credit into the first lien, and loan origination costs that are rolled into the principal balances. It is calculated using Freddie Mac's estimate of prime, conventional mortgage originations volume, the refi share of originations, and of the average increase in the principal balance from refinanced loans that were not due to new equity extraction.

▲ High Concern  
 ▲ Concern  
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## Additional Data

Public Debt		2017	2018	2019	2020	2021 Q3
Federal Government Debt	Debt to GDP	105.2%	107.1%	108.6%	132.8%	122.6%
	5 year % change	4%	4%	5%	28%	18%
	\$ in billions	\$20,493	\$21,974	\$23,201	\$27,748	\$28,429
Memo: Federal Debt: Held by Public	Debt to GDP	76.1%	78.4%	80.3%	103.5%	96.1%
	5 year % change	7%	7%	8%	38%	27%
	\$ in billions	\$14,815	\$16,102	\$17,170	\$21,632	\$22,283
Memo: Federal Debt: Intragovernmental Holdings	Debt to GDP	29.2%	28.6%	28.2%	29.3%	26.5%
	5 year % change	-2%	-4%	-3%	2%	-8%
	\$ in billions	\$5,678	\$5,872	\$6,031	\$6,115	\$6,146
State and Local Government Debt	Debt to GDP	16.2%	15.2%	14.6%	15.4%	14.1%
	5 year % change	-18%	-20%	-18%	-11%	-16%
	\$ in billions	\$3,156	\$3,117	\$3,116	\$3,208	\$3,275



Supplementary Data		2017	2018	2019	2020	2021 Q3
Nominal GDP	\$ in billions	\$19,480	\$20,527	\$21,373	\$20,894	\$23,187
	Annual % Change	4.2%	5.4%	4.1%	-2.2%	9.7%
Real GDP	Chained 2012 \$ in Billions	\$18,079	\$18,607	\$19,033	\$18,385	\$19,161
	Annual % Change	2.3%	2.9%	2.3%	-3.4%	3.7%
Consumer Price Index (Inflation)	CPI (2010=100)	112.41	115.16	117.24	118.69	125.48
	Inflation Rate	2.1%	2.5%	1.8%	1.2%	5.3%
Unemployment	Person (Thousands)	6,278	6,029	5,503	10,404	7,336
	Unemployment Rate	3.9%	3.7%	3.4%	6.5%	4.6%
Current Account Balance*	\$ in billions	(\$440)	(\$491)	(\$498)	(\$550)	(\$715)
	to GDP	-2.3%	-2.4%	-2.3%	-2.7%	-3.2%




\* 2021 Q2 Data

High Concern
 Concern
 Low Concern
 Current or recent crisis
 No Current Concern











HY: High-Yield (BB or Lower)




n/a: Data Not Available

## Explanatory Notes

Color Code	Total Private Debt Cell Description
	5 Year % Change > 20%
	5 Year % Change > 13% < 20%
	Residual Risk Period

\* Due to the size of total private debt, five-year percentage growth constitutes greater concern as compared to the individual sector data

Color Code	Sector Data Cell Description
	5 Year % Change > 40%
	5 Year % Change > 40%
	Debt to GDP < 1.5% (immaterial)
	5 Year % Change > 20% < 40%
	5 Year % Change > 20% < 40%
	Debt to GDP < 1.5% (immaterial)
	5 Year % Change > 13% < 20%
	5 Year % Change > 13% < 20%
	Debt to GDP < 1.5% (immaterial)
	Residual Risk Period

 High Concern  
  Concern  
  Low Concern  
  Current or recent crisis  
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