

## TYCHOS SECTOR RISK REPORT

		2016	2017	2018	2019	2020 Q2
Total Private	Debt to GDP	150%	151%	150%	150%	173%
	5 year % change	-3%	0%	0%	1%	18%
	\$ in billions	\$28,033	\$29,539	\$30,947	\$32,186	\$33,697
Business Debt	Debt to GDP	72%	74%	75%	76%	90%
	5 year % change	10%	12%	12%	10%	31%
	\$ in billions	\$13,557	\$14,539	\$15,470	\$16,218	\$17,559
	Bond Default Rate	3.3%	1.9%	1.3%	1.3%	0.8%
Household Debt	Debt to GDP	77%	77%	75%	75%	83%
	5 year % change	-12%	-8%	-9%	-6%	7%
	\$ in billions	\$14,476	\$15,001	\$15,477	\$15,968	\$16,137
	*Delinquency Rate	2.4%	2.3%	2.4%	2.4%	2.1%

\* 90+ Days Delinquency Rate

## Areas of Concern

Corporate Sectors		2016	2017	2018	2019	2020 Q2
CRE	Debt to GDP	21.6%	22.1%	22.1%	22.6%	25.5%
	5 year % change	2%	9%	10%	12%	27%
	\$ in billions	\$4,055	\$4,311	\$4,557	\$4,851	\$4,980
	Default Rate	n/a	n/a	n/a	n/a	n/a
Communication Services	Debt to GDP	6.8%	7.2%	6.9%	7.4%	7.9%
	5 year % change	24%	25%	17%	24%	37%
	\$ in billions	\$1,273	\$1,406	\$1,423	\$1,590	\$1,537
	Default Rate	0.0%	2.6%	1.5%	2.8%	0.0%
Consumer Discretionary	Debt to GDP	5.9%	6.2%	6.0%	7.1%	8.5%
	5 year % change	6%	6%	6%	27%	60%
	\$ in billions	\$1,104	\$1,201	\$1,226	\$1,530	\$1,660
	Default Rate	2.7%	3.9%	2.4%	2.5%	0.5%
Health Care	Debt to GDP	6.1%	5.9%	6.0%	6.7%	7.2%
	5 year % change	44%	29%	33%	35%	32%
	\$ in billions	\$1,134	\$1,151	\$1,230	\$1,441	\$1,398
	Default Rate	0.7%	1.6%	0.8%	1.6%	0.0%
Information Technology	Debt to GDP	4.9%	5.3%	5.0%	5.4%	6.3%
	5 year % change	61%	69%	47%	55%	68%
	\$ in billions	\$915	\$1,036	\$1,021	\$1,163	\$1,239
	Default Rate	1.2%	1.8%	0.0%	0.6%	0.0%
Real Estate	Debt to GDP	3.6%	3.7%	3.5%	3.7%	4.4%
	5 year % change	10%	10%	3%	5%	24%
	\$ in billions	\$677	\$712	\$716	\$800	\$864
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%
Consumer Staples	Debt to GDP	4.0%	3.8%	3.7%	3.8%	4.4%
	5 year % change	26%	15%	6%	11%	34%
	\$ in billions	\$754	\$732	\$758	\$812	\$866
	Default Rate	1.0%	1.0%	1.1%	3.4%	1.0%
Automotive	Debt to GDP	2.2%	2.4%	2.4%	2.4%	3.0%
	5 year % change	31%	38%	26%	27%	55%
	\$ in billions	\$402	\$466	\$494	\$524	\$578
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%

▲ 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

Household Sectors		2016	2017	2018	2019	2020 Q2
Student Loans	Debt to GDP	7.5%	7.6%	7.6%	7.7%	8.6%
	5 year % change	22%	17%	12%	9%	22%
	\$ in billions	\$1,408	\$1,492	\$1,576	\$1,649	\$1,677
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	7.0%
	**Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	n/s
Auto Loans	Debt to GDP	6.2%	6.2%	6.2%	6.2%	6.9%
	5 year % change	31%	29%	20%	14%	18%
	\$ in billions	\$1,157	\$1,221	\$1,274	\$1,331	\$1,343
	*Delinquency Rate	3.8%	4.1%	4.5%	4.9%	5.0%

\* 90+ Days Delinquency Rate

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

Private Debt Lenders		2016	2017	2018	2019	2020 Q2
Agency/GSE backed Mortgage Pools	Debt to GDP	10.3%	10.9%	11.1%	11.2%	12.4%
	5 year % change	22%	22%	19%	20%	35%
	\$ in billions	\$1,930	\$2,125	\$2,291	\$2,406	\$2,419
Federal Government (Student & other loans)	Debt to GDP	6.4%	6.6%	6.8%	7.0%	8.4%
	5 year % change	47%	38%	14%	21%	44%
	\$ in billions	\$1,195	\$1,293	\$1,391	\$1,491	\$1,645
Credit Unions	Debt to GDP	4.4%	4.6%	4.8%	4.9%	5.5%
	5 year % change	25%	31%	32%	27%	41%
	\$ in billions	\$820	\$900	\$992	\$1,047	\$1,073
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.1%	1.9%	3.6%	3.9%	4.5%
	5 year % change	-14%	117%	328%	298%	336%
	\$ in billions	\$203	\$376	\$733	\$830	\$881

Derivative Activity by Contract Type		2016	2017	2018	2019	2020 Q2
Equities	Debt to GDP	13.2%	15.8%	16.4%	17.7%	18.3%
	5 year % change	28%	30%	35%	20%	41%
	\$ in billions	\$2,475	\$3,080	\$3,374	\$3,796	\$3,574

▲ 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		2016	2017	2018	2019	2020 Q2	
CRE	Debt to GDP	21.6%	22.1%	22.1%	22.6%	25.5%	
	5 year % change	2%	9%	10%	12%	27%	
	\$ in billions	\$4,055	\$4,311	\$4,557	\$4,851	\$4,980	⚠
	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	7.1%	7.3%	7.1%	7.4%	7.9%	
	5 year % change	-5%	-6%	-9%	-4%	8%	+
	\$ in billions	\$1,331	\$1,432	\$1,454	\$1,592	\$1,538	
	Default Rate	0.4%	0.4%	0.4%	0.8%	0.3%	
	HY Debt to GDP	0.41%	0.42%	0.38%	0.26%	0.63%	
Communication Services	Debt to GDP	6.8%	7.2%	6.9%	7.4%	7.9%	
	5 year % change	24%	25%	17%	24%	37%	
	\$ in billions	\$1,273	\$1,406	\$1,423	\$1,590	\$1,537	⚠
	Default Rate	0.0%	2.6%	1.5%	2.8%	0.0%	
	HY Debt to GDP	0.84%	0.88%	0.94%	0.74%	0.85%	
Industrials	Debt to GDP	8.7%	9.0%	9.0%	9.4%	9.7%	
	5 year % change	-14%	-13%	-8%	3%	10%	+
	\$ in billions	\$1,624	\$1,765	\$1,845	\$2,025	\$1,890	
	Default Rate	2.1%	1.4%	0.7%	0.4%	2.7%	
	HY Debt to GDP	0.96%	0.84%	0.77%	0.88%	1.34%	
Consumer Discretionary	Debt to GDP	5.9%	6.2%	6.0%	7.1%	8.5%	
	5 year % change	6%	6%	6%	27%	60%	⚠
	\$ in billions	\$1,104	\$1,201	\$1,226	\$1,530	\$1,660	
	Default Rate	2.7%	3.9%	2.4%	2.5%	0.5%	
	HY Debt to GDP	1.84%	1.61%	1.34%	1.14%	2.34%	
Health Care	Debt to GDP	6.1%	5.9%	6.0%	6.7%	7.2%	
	5 year % change	44%	29%	33%	35%	32%	⚠
	\$ in billions	\$1,134	\$1,151	\$1,230	\$1,441	\$1,398	
	Default Rate	0.7%	1.6%	0.8%	1.6%	0.0%	
	HY Debt to GDP	0.46%	0.47%	0.57%	0.59%	0.61%	
Information-Technology	Debt to GDP	4.9%	5.3%	5.0%	5.4%	6.3%	
	5 year % change	61%	69%	47%	55%	68%	⚠
	\$ in billions	\$915	\$1,036	\$1,021	\$1,163	\$1,239	
	Default Rate	1.2%	1.8%	0.0%	0.6%	0.0%	
	HY Debt to GDP	0.57%	0.75%	0.75%	0.66%	0.72%	
Energy	Debt to GDP	6.9%	6.4%	5.8%	6.1%	6.7%	
	5 year % change	33%	5%	-9%	-13%	-4%	⚠
	\$ in billions	\$1,285	\$1,239	\$1,196	\$1,308	\$1,299	
	Default Rate	16.4%	3.6%	3.9%	7.5%	1.2%	
	HY Debt to GDP	1.32%	1.33%	1.14%	0.81%	0.80%	
Real Estate	Debt to GDP	3.6%	3.7%	3.5%	3.7%	4.4%	
	5 year % change	10%	10%	3%	5%	24%	⚠
	\$ in billions	\$677	\$712	\$716	\$800	\$864	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%	
	HY Debt to GDP	0.47%	0.38%	0.39%	0.34%	0.42%	
Consumer Staples	Debt to GDP	4.0%	3.8%	3.7%	3.8%	4.4%	
	5 year % change	26%	15%	6%	11%	34%	⚠
	\$ in billions	\$754	\$732	\$758	\$812	\$866	
	Default Rate	1.0%	1.0%	1.1%	3.4%	1.0%	
	HY Debt to GDP	0.34%	0.30%	0.29%	0.27%	0.50%	
Materials	Debt to GDP	2.5%	2.5%	2.4%	2.4%	2.6%	
	5 year % change	3%	3%	-5%	-6%	5%	+
	\$ in billions	\$462	\$481	\$484	\$519	\$515	
	Default Rate	4.0%	1.4%	1.5%	0.8%	0.0%	
	HY Debt to GDP	0.55%	0.58%	0.50%	0.10%	0.50%	
Memo: Automotive	Debt to GDP	2.2%	2.4%	2.4%	2.4%	3.0%	
	5 year % change	31%	38%	26%	27%	55%	⚠
	\$ in billions	\$402	\$466	\$494	\$524	\$578	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%	
	HY Debt to GDP	0.14%	0.13%	0.07%	0.07%	0.77%	
Memo: Agriculture	Debt to GDP	2.1%	2.1%	2.0%	2.0%	2.2%	
	5 year % change	9%	6%	-2%	-1%	14%	⚠
	\$ in billions	\$390	\$402	\$416	\$419	\$434	
	*Delinquency Rate	1.2%	1.5%	1.7%	1.8%	2.2%	
	HY Debt to GDP	n/a	n/a	n/a	n/a	n/a	
Memo: Corporate Sector High-Yield Debt	Debt to GDP	8.0%	7.7%	6.9%	6.9%	9.0%	
	5 year % change	-4%	-10%	-17%	-19%	8%	+
	\$ in billions	\$1,499	\$1,509	\$1,423	\$1,479	\$1,756	

• 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

## Commercial Real Estate Debt Summary

CRE Debt		2016	2017	2018	2019	2020 Q2
Multi-Family Residential Mortgages	Debt to GDP	6.6%	7.0%	7.2%	7.5%	8.6%
	5 year % change	19%	26%	28%	31%	47%
	\$ in billions	\$1,236	\$1,359	\$1,481	\$1,618	\$1,672
Commercial Mortgages	Debt to GDP	14%	14%	14%	14%	16%
	5 year % change	-5%	1%	2%	3%	18%
	\$ in billions	\$2,592	\$2,716	\$2,831	\$2,966	\$3,034
Farm Mortgages	Debt to GDP	1.2%	1.2%	1.2%	1.2%	1.4%
	5 year % change	12%	13%	8%	11%	26%
	\$ in billions	\$226	\$236	\$246	\$267	\$274
Total CRE Debt	Debt to GDP	21.6%	22.1%	22.1%	22.6%	25.5%
	5 year % change	2%	9%	10%	12%	27%
	\$ in billions	\$4,055	\$4,311	\$4,557	\$4,851	\$4,980
Memo: Construction and Land Development Loans	Debt to GDP	1.7%	1.7%	1.7%	1.7%	2.0%
	5 year % change	8%	38%	36%	24%	37%
	\$ in billions	\$313	\$338	\$350	\$362	\$381
Commercial Real Estate Bank Loans	Charge-Off Rates	0.0%	0.0%	0.0%	0.0%	0.0%
	Delinquency Rates	0.9%	0.8%	0.7%	0.7%	0.8%

- 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		2016	2017	2018	2019	2020 Q2	
<b>Mortgage Debt</b>	Debt to GDP	51.5%	50.7%	49.4%	48.8%	54.4%	
	5 year % change	-18%	-14%	-12%	-9%	5%	
	\$ in billions	\$9,657	\$9,914	\$10,185	\$10,455	\$10,618	+
	*Delinquency Rate	1.6%	1.3%	1.1%	1.1%	0.8%	
	**CB Delinquency Rate	4.2%	3.6%	2.8%	2.4%	2.5%	
<b>Student Loans</b>	Debt to GDP	7.5%	7.6%	7.6%	7.7%	8.6%	
	5 year % change	22%	17%	12%	9%	22%	
	\$ in billions	\$1,408	\$1,492	\$1,576	\$1,649	\$1,677	⚠
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	7.0%	
	***Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	n/s	
<b>Auto Loans</b>	Debt to GDP	6.2%	6.2%	6.2%	6.2%	6.9%	
	5 year % change	31%	29%	20%	14%	18%	⚠
	\$ in billions	\$1,157	\$1,221	\$1,274	\$1,331	\$1,343	
	Default Rate	3.8%	4.1%	4.5%	4.9%	5.0%	
<b>Credit Cards</b>	Debt to GDP	4.2%	4.3%	4.2%	4.3%	4.2%	
	5 year % change	-8%	2%	4%	8%	8%	
	\$ in billions	\$779	\$834	\$870	\$927	\$817	+
	Default Rate	7.1%	7.6%	7.8%	8.4%	9.8%	
<b>Margin Debt</b>	Debt to GDP	2.8%	3.3%	2.7%	2.7%	3.0%	
	5 year % change	46%	50%	-6%	-4%	-0%	+
	\$ in billions	\$529	\$643	\$554	\$579	\$585	

\* 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		2016	2017	2018	2019	2020 Q2
Student Loans	Debt/GDP	7.5%	7.6%	7.6%	7.7%	8.6%
	5 Year % Change	22%	17%	12%	9%	22%
	\$ in Billions	\$1,408	\$1,492	\$1,576	\$1,649	\$1,677
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	7.0%
	**Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	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		2016	2017	2018	2019	2020 Q1
Private Student Loans	Debt/GDP	0.3%	0.3%	0.3%	0.3%	0.3%
	5 Year % Change	-9%	-12%	-13%	-16%	-14%
	\$ in Billions	\$64	\$63	\$65	\$64	\$65
	Delinquent Loans Bil \$	\$1	\$1	\$1	\$1	\$1
	**Delinquency Rate	2.08%	1.56%	1.67%	1.32%	1.10%
Repayment Status	Debt to GDP	0.3%	0.2%	0.2%	0.2%	0.2%
	\$ in billions	\$49	\$48	\$50	\$49	\$47
Deferment Status	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.1%
	\$ in billions	\$12	\$12	\$12	\$12	\$13
Grace Status	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%
	\$ in billions	\$1	\$2	\$2	\$2	\$2
Forbearance Status	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%
	\$ in billions	\$1	\$2	\$2	\$2	\$3



Federal Student Loans		2016	2017	2018	2019	2020 Q2
Federal Student Loans	Debt/GDP	6.9%	7.0%	7.0%	7.0%	7.9%
	5 Year % Change	27%	20%	13%	9%	23%
	\$ in Billions	\$1,292	\$1,367	\$1,439	\$1,510	\$1,543
	Delinquent Loans Bil \$	\$152	\$178	\$198	\$215	\$200
	**Delinquency Rate	27.5%	28.8%	30.1%	29.9%	28.6%
In-School Status	Debt to GDP	0.8%	0.7%	0.7%	0.6%	0.7%
	\$ in billions	\$143	\$139	\$138	\$132	\$135
Repayment Status	Debt to GDP	2.8%	3.0%	3.2%	3.4%	3.6%
	\$ in billions	\$524	\$587	\$661	\$719	\$700
Deferment Status	Debt to GDP	0.6%	0.6%	0.6%	0.6%	0.7%
	\$ in billions	\$115	\$120	\$129	\$132	\$138
Grace Status	Debt to GDP	0.3%	0.2%	0.2%	0.2%	0.1%
	\$ in billions	\$51	\$49	\$44	\$45	\$23
Forbearance Status	Debt to GDP	0.6%	0.6%	0.6%	0.6%	1.0%
	\$ in billions	\$106	\$122	\$119	\$130	\$195
Other Status	Debt to GDP	0.0%	0.1%	0.0%	0.0%	0.1%
	\$ in billions	\$9	\$10	\$10	\$10	\$11



\* Delinquent loans (90+ Days) 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

Fixed Income

Securities Market		2016	2017	2018	2019	2020 Q2	
Total Securities	Debt to GDP	212.0%	209.9%	208.0%	209.3%	253.2%	
	5 year % change	-4%	-4%	-4%	-2%	20%	⚠️
	\$ in billions	\$39,739	\$41,026	\$42,864	\$44,858	\$49,424	
Municipal Securities	Debt to GDP	20.7%	19.9%	18.6%	18.0%	19.9%	
	5 year % change	-18%	-18%	-19%	-17%	-5%	+
	\$ in billions	\$3,884	\$3,898	\$3,841	\$3,861	\$3,886	
Marketable Treasury Securities	Debt to GDP	74.2%	74.0%	75.7%	77.8%	101.9%	⚠️
	5 year % change	16%	9%	7%	9%	41%	⚠️
	\$ in billions	\$13,908	\$14,469	\$15,608	\$16,673	\$19,899	
Mortgage Related Securities	Debt to GDP	48.1%	47.6%	47.2%	48.1%	55.3%	⚠️
	5 year % change	-18%	-13%	-9%	-5%	13%	⚠️
	\$ in billions	\$9,023	\$9,305	\$9,732	\$10,308	\$10,788	
Memo: Mortgage Related Securities: Agency MBS	Debt to GDP	34.8%	35.4%	35.3%	36.0%	40.8%	⚠️
	5 year % change	-2%	1%	0%	5%	23%	⚠️
	\$ in billions	\$6,530	\$6,924	\$7,269	\$7,711	\$7,971	
Memo: Mortgage Related Securities: Agency CMO	Debt to GDP	5.9%	5.5%	5.4%	5.2%	6.9%	+
	5 year % change	-34%	-31%	-21%	-25%	6%	+
	\$ in billions	\$1,109	\$1,081	\$1,103	\$1,117	\$1,344	
Memo: Mortgage Related Securities: Non-Agency CMBS	Debt to GDP	2.8%	2.6%	2.6%	2.8%	3.1%	+
	5 year % change	-36%	-34%	-29%	-22%	-11%	+
	\$ in billions	\$531	\$509	\$543	\$596	\$603	
Memo: Mortgage Related Securities: Non-Agency RMBS	Debt to GDP	4.6%	4.0%	4.0%	4.1%	4.5%	+
	5 year % change	-51%	-47%	-38%	-27%	-16%	+
	\$ in billions	\$853	\$791	\$817	\$883	\$871	
Corporate Debt Securities	Debt to GDP	46.3%	46.0%	44.8%	44.6%	53.3%	⚠️
	5 year % change	5%	3%	-2%	-3%	18%	⚠️
	\$ in billions	\$8,676	\$8,996	\$9,230	\$9,567	\$10,410	
Federal Agency Securities	Debt to GDP	10.5%	9.9%	8.9%	8.1%	9.4%	+
	5 year % change	-30%	-23%	-27%	-30%	-14%	+
	\$ in billions	\$1,972	\$1,935	\$1,842	\$1,726	\$1,834	
Money Market Securities (Commercial Paper)	Debt to GDP	4.7%	4.9%	4.8%	4.9%	5.2%	+
	5 year % change	-24%	-16%	-15%	-8%	-0%	+
	\$ in billions	\$885	\$966	\$996	\$1,045	\$1,007	
Asset-Backed Securities	Debt to GDP	7.4%	7.5%	7.8%	7.8%	8.2%	+
	5 year % change	-15%	-6%	2%	2%	9%	+
	\$ in billions	\$1,392	\$1,458	\$1,616	\$1,678	\$1,600	
Memo: Asset-Backed Securities: Automobile	Debt to GDP	1.0%	1.0%	1.1%	1.1%	1.2%	⚠️
	5 year % change	39%	19%	13%	8%	14%	⚠️
	\$ in billions	\$194	\$203	\$223	\$236	\$236	
Memo: Asset-Backed Securities: Credit Card	Debt to GDP	0.7%	0.7%	0.6%	0.5%	0.4%	+
	5 year % change	-34%	-17%	-19%	-40%	-42%	+
	\$ in billions	\$131	\$129	\$124	\$101	\$84	
Memo: Asset-Backed Securities: Equipment	Debt to GDP	0.3%	0.3%	0.4%	0.3%	0.4%	⚠️
	5 year % change	15%	11%	42%	15%	23%	⚠️
	\$ in billions	\$52	\$56	\$84	\$75	\$75	
Memo: Asset-Backed Securities: Other	Debt to GDP	0.8%	0.9%	1.0%	1.1%	1.1%	⚠️
	5 year % change	23%	34%	35%	46%	45%	⚠️
	\$ in billions	\$157	\$179	\$206	\$235	\$215	
Memo: Asset-Backed Securities: Student Loans	Debt to GDP	1.0%	0.9%	0.8%	0.7%	0.8%	+
	5 year % change	-34%	-38%	-40%	-40%	-31%	+
	\$ in billions	\$189	\$177	\$171	\$159	\$157	
Memo: Asset-Backed Securities: CDO/CLO	Debt to GDP	3.6%	3.7%	3.9%	4.1%	4.3%	⚠️
	5 year % change	-21%	-5%	10%	13%	17%	⚠️
	\$ in billions	\$670	\$714	\$808	\$872	\$833	

- 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

⚠️ 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		2016	2017	2018	2019	2020 Q2	
US Chartered Depository Institutions	Debt to GDP	45.4%	45.2%	44.8%	44.5%	51.4%	⚠
	5 year % change	2%	4%	5%	4%	21%	
	\$ in billions	\$8,503	\$8,829	\$9,226	\$9,539	\$10,036	
Non-Financial Corporations, Debt Securities	Debt to GDP	31%	32%	31%	31%	37%	⚠
	5 year % change	16%	13%	7%	4%	23%	
	\$ in billions	\$5,838	\$6,158	\$6,299	\$6,559	\$7,126	
Government Sponsored Enterprises	Debt to GDP	26.9%	26.6%	25.9%	25.7%	29.2%	+
	5 year % change	-15%	-11%	-11%	-8%	9%	
	\$ in billions	\$5,031	\$5,197	\$5,337	\$5,514	\$5,704	
Agency/GSE backed Mortgage Pools	Debt to GDP	10.3%	10.9%	11.1%	11.2%	12.4%	⚠
	5 year % change	22%	22%	19%	20%	35%	
	\$ in billions	\$1,930	\$2,125	\$2,291	\$2,406	\$2,419	
Federal Government (Student & other loans)	Debt to GDP	6.4%	6.6%	6.8%	7.0%	8.4%	⚠
	5 year % change	47%	38%	14%	21%	44%	
	\$ in billions	\$1,195	\$1,293	\$1,391	\$1,491	\$1,645	
Credit Unions	Debt to GDP	4.4%	4.6%	4.8%	4.9%	5.5%	⚠
	5 year % change	25%	31%	32%	27%	41%	
	\$ in billions	\$820	\$900	\$992	\$1,047	\$1,073	
Issuers of Asset-Backed Securities	Debt to GDP	5.4%	4.9%	4.7%	4.6%	5.2%	+
	5 year % change	-53%	-50%	-39%	-31%	-20%	
	\$ in billions	\$1,005	\$960	\$958	\$995	\$1,009	
Finance Companies	Debt to GDP	5.0%	4.8%	4.5%	4.3%	4.6%	+
	5 year % change	-27%	-28%	-30%	-31%	-23%	
	\$ in billions	\$936	\$929	\$931	\$924	\$903	
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.1%	1.9%	3.6%	3.9%	4.5%	⚠
	5 year % change	-14%	117%	328%	298%	336%	
	\$ in billions	\$203	\$376	\$733	\$830	\$881	
Margin Accounts	Debt to GDP	1.5%	1.7%	1.5%	1.5%	1.6%	+
	5 year % change	-4%	-9%	-27%	-28%	-18%	
	\$ in billions	\$277	\$333	\$302	\$326	\$319	

### Financial Sector Debt

Financial Sector		2016	2017	2018	2019	2020 Q2	
Domestic Financial Sector	Debt to GDP	83.6%	81.7%	79.1%	77.8%	88.7%	+
	5 year % change	-14%	-11%	-12%	-11%	6%	
	\$ in billions	\$15,676	\$15,966	\$16,299	\$16,665	\$17,319	
Debt Securities	Debt to GDP	72.7%	71.3%	69.2%	68.6%	78.3%	+
	5 year % change	-16%	-13%	-12%	-10%	7%	
	\$ in billions	\$13,624	\$13,928	\$14,271	\$14,709	\$15,289	
Memo: Debt Securities: Open Market Paper	Bond Default Rate	0.0%	0.6%	0.2%	0.2%	0.2%	
	Debt to GDP	2.3%	2.0%	2.1%	1.9%	2.1%	+
	5 year % change	-49%	-47%	-35%	-31%	-20%	
Memo: Debt Securities: Agency Securities	\$ in billions	\$434	\$397	\$431	\$398	\$403	
	Debt to GDP	45.3%	45.2%	44.1%	43.9%	49.8%	⚠
	5 year % change	-7%	-3%	-5%	-3%	14%	
Memo: Debt Securities: Corporate and Foreign Bonds	\$ in billions	\$8,496	\$8,843	\$9,090	\$9,410	\$9,725	
	Debt to GDP	25.0%	24.0%	23.0%	22.9%	26.4%	+
	5 year % change	-26%	-24%	-22%	-19%	-2%	
Loans	\$ in billions	\$4,694	\$4,688	\$4,750	\$4,902	\$5,162	
	Debt to GDP	10.9%	10.4%	9.8%	9.1%	10.4%	+
	5 year % change	10%	7%	-6%	-17%	-3%	
Memo: Loans: Depository Institution Loans	\$ in billions	\$2,052	\$2,038	\$2,027	\$1,956	\$2,030	
	Debt to GDP	1.6%	1.5%	1.5%	1.4%	1.8%	⚠
	5 year % change	13%	16%	8%	-4%	14%	
Memo: Loans: Other Loans and Advances	\$ in billions	\$293	\$301	\$311	\$311	\$352	
	Debt to GDP	8.1%	7.6%	7.2%	6.6%	7.4%	+
	5 year % change	11%	5%	-8%	-19%	-5%	
Memo: Loans: Equity REIT Mortgages	\$ in billions	\$1,522	\$1,495	\$1,491	\$1,420	\$1,454	
	Debt to GDP	1.3%	1.2%	1.1%	1.0%	1.1%	+
	5 year % change	3%	3%	-14%	-21%	-13%	
	\$ in billions	\$236	\$242	\$226	\$225	\$224	

• 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



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

Debt Security Investment		2015	2016	2017	2018	2019 Q2	
United States Holdings of Foreign Debt Securities	to GDP	14.8%	14.7%	16.9%	16.5%	16.5%	+
	5 year % change	5%	-3%	4%	4%	4%	+
	\$ in billions	\$2,699	\$2,745	\$3,291	\$3,397	\$3,397	
Canada	to GDP	2.1%	2.2%	2.5%	2.5%	2.5%	+
	5 year % change	9%	-10%	-8%	-0%	-0%	+
	\$ in billions	\$380	\$409	\$484	\$514	\$514	
Cayman Islands	to GDP	1.7%	1.9%	2.1%	2.2%	2.2%	!
	5 year % change	24%	31%	51%	66%	66%	!
	\$ in billions	\$302	\$349	\$405	\$455	\$455	
United Kingdom	to GDP	1.9%	1.7%	2.0%	2.1%	2.1%	+
	5 year % change	-25%	-24%	-14%	-4%	-4%	+
	\$ in billions	\$343	\$318	\$382	\$433	\$433	
Equity and Investment Fund Shares		2015	2016	2017	2018	2019 Q2	
United States Holdings of Foreign Equity & Investment Fund Shares	to GDP	37.1%	38.2%	46.7%	38.4%	38.4%	!
	5 year % change	20%	32%	42%	-0%	-0%	!
	\$ in billions	\$6,756	\$7,146	\$9,118	\$7,900	\$7,900	
Cayman Islands	to GDP	5.0%	5.5%	7.0%	6.3%	6.3%	!
	5 year % change	353%	74%	97%	55%	55%	!
	\$ in billions	\$915	\$1,020	\$1,362	\$1,287	\$1,287	
United Kingdom	to GDP	4.9%	4.7%	5.6%	4.5%	4.5%	!
	5 year % change	18%	14%	18%	-23%	-23%	!
	\$ in billions	\$897	\$878	\$1,091	\$927	\$927	
Japan	to GDP	3.8%	3.7%	4.6%	3.7%	3.7%	!
	5 year % change	26%	48%	75%	3%	3%	!
	\$ in billions	\$690	\$695	\$902	\$760	\$760	
Loans		2015	2016	2017	2018	2019 Q2	
United States Holdings of Foreign Loans	to GDP	2.6%	2.7%	2.8%	2.9%	3.0%	!
	5 year % change	129%	101%	73%	50%	43%	!
	\$ in billions	\$474	\$506	\$541	\$593	\$642	
United States Holdings of Foreign Loans: Bank Loans	to GDP	2.4%	2.5%	2.5%	2.7%	2.8%	!
	5 year % change	143%	111%	76%	54%	44%	!
	\$ in billions	\$441	\$475	\$487	\$547	\$589	
United States Holdings of Foreign Loans: Other Loans	to GDP	0.2%	0.2%	0.3%	0.2%	0.2%	!
	5 year % change	33%	18%	48%	20%	31%	!
	\$ in billions	\$34	\$32	\$54	\$46	\$53	

• 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

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

Debt Security Investment		2015	2016	2017	2018	2019 Q2	
Foreign Holdings of United State's Debt Securities	to GDP	57.4%	57.5%	58.5%	57.5%	54.7%	
	5 year % change	144%	9%	6%	84%	-2%	⚠
	\$ in billions	\$10,061	\$10,479	\$10,954	\$11,222	\$11,261	
Japan	to GDP	8.9%	8.3%	8.2%	7.7%	7.3%	
	5 year % change	412%	6%	-1%	232%	-16%	⚠
	\$ in billions	\$1,556	\$1,513	\$1,532	\$1,508	\$1,501	
China	to GDP	8.5%	8.3%	7.8%	6.9%	6.8%	
	5 year % change	419%	-16%	-23%	387%	-23%	⚠
	\$ in billions	\$1,497	\$1,514	\$1,452	\$1,347	\$1,390	
Luxembourg	to GDP	4.0%	4.3%	4.5%	4.4%	4.3%	
	5 year % change	164%	42%	31%	97%	17%	⚠
	\$ in billions	\$696	\$779	\$832	\$866	\$876	
Equity and Investment Fund Shares		2015	2016	2017	2018	2019 Q2	
Foreign Holdings of United State's Equity & Investment Fund Shares	to GDP	36.3%	36.5%	33.1%	36.8%	39.6%	
	5 year % change	133%	95%	34%	41%	31%	⚠
	\$ in billions	\$6,356	\$6,655	\$6,186	\$7,189	\$8,139	
Cayman Islands	to GDP	4.8%	4.9%	4.3%	4.8%	5.0%	
	5 year % change	204%	151%	68%	49%	35%	⚠
	\$ in billions	\$838	\$884	\$796	\$928	\$1,038	
Canada	to GDP	4.4%	4.2%	3.7%	4.2%	4.5%	
	5 year % change	162%	110%	39%	43%	23%	⚠
	\$ in billions	\$769	\$761	\$695	\$810	\$928	
United Kingdom	to GDP	4.2%	4.6%	4.0%	4.3%	4.5%	
	5 year % change	119%	111%	39%	42%	29%	⚠
	\$ in billions	\$741	\$832	\$741	\$844	\$924	

• 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		2016	2017	2018	2019	2020 Q2	
Dealer (Trading)	Debt to GDP	837.0%	844.3%	823.0%	767.2%	884.8%	+
	5 year % change	-39%	-33%	-37%	-35%	-13%	+
	\$ in billions	\$156,901	\$165,002	\$169,636	\$164,441	\$172,723	
End User (Non-Trading)	Debt to GDP	16.3%	14.3%	11.9%	14.4%	18.4%	+
	5 year % change	-45%	-50%	-59%	-36%	0%	+
	\$ in billions	\$3,057	\$2,785	\$2,447	\$3,077	\$3,594	
Credit Derivatives	Debt to GDP	28.2%	21.4%	20.7%	18.4%	16.7%	+
	5 year % change	-70%	-74%	-69%	-66%	-64%	+
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,255	
Total Notional	Debt to GDP	881.6%	880.0%	855.6%	800.0%	919.9%	+
	5 year % change	-41%	-36%	-39%	-37%	-15%	+
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$179,571	
Derivative Activity by Contract Type		2016	2017	2018	2019	2020 Q2	
Interest Rate	Debt to GDP	664.1%	667.3%	621.8%	583.5%	676.5%	+
	5 year % change	-45%	-39%	-46%	-41%	-20%	+
	\$ in billions	\$124,488	\$130,417	\$128,166	\$125,056	\$132,044	
Foreign Exchange	Debt to GDP	169.3%	168.4%	190.3%	173.4%	200.8%	!
	5 year % change	3%	-1%	12%	-8%	15%	!
	\$ in billions	\$31,737	\$32,903	\$39,221	\$37,170	\$39,191	
Equities	Debt to GDP	13.2%	15.8%	16.4%	17.7%	18.3%	!
	5 year % change	28%	30%	35%	20%	41%	!
	\$ in billions	\$2,475	\$3,080	\$3,374	\$3,796	\$3,574	
Commodities	Debt to GDP	6.7%	7.0%	6.4%	7.0%	7.7%	+
	5 year % change	-22%	-19%	-11%	1%	-2%	+
	\$ in billions	\$1,257	\$1,373	\$1,315	\$1,495	\$1,507	
Credit Derivatives	Debt to GDP	28.2%	21.4%	20.7%	18.4%	16.7%	+
	5 year % change	-70%	-74%	-69%	-66%	-64%	+
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,255	
Total Notional	Debt to GDP	881.6%	880.0%	855.6%	800.0%	919.9%	+
	5 year % change	-41%	-36%	-39%	-37%	-15%	+
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$179,571	
Derivative Activity by Product		2016	2017	2018	2019	2020 Q2	
Futures & Forwards	Debt to GDP	182.5%	176.1%	175.4%	162.3%	210.1%	+
	5 year % change	-24%	-31%	-26%	-34%	-5%	+
	\$ in billions	\$34,201	\$34,407	\$36,144	\$34,787	\$41,018	
Total Options	Debt to GDP	156.7%	198.7%	184.4%	168.5%	171.9%	+
	5 year % change	-25%	6%	-4%	-9%	-1%	+
	\$ in billions	\$29,373	\$38,841	\$38,009	\$36,117	\$33,564	
Total Swaps	Debt to GDP	514.2%	483.7%	475.1%	450.8%	521.2%	+
	5 year % change	-45%	-43%	-48%	-42%	-19%	+
	\$ in billions	\$96,384	\$94,524	\$97,923	\$96,614	\$101,734	
Credit Derivatives	Debt to GDP	28.2%	21.4%	20.7%	18.4%	16.7%	+
	5 year % change	-70%	-74%	-69%	-66%	-64%	+
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,255	
Total Notional	Debt to GDP	881.6%	880.0%	855.6%	800.0%	919.9%	+
	5 year % change	-41%	-36%	-39%	-37%	-15%	+
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$179,571	

▲ 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		2016	2017	2018	2019	2020 Q2	
JP Morgan	Loans to GDP	4.8%	4.9%	4.9%	4.6%	5.1%	⚠
	5 year % change	2%	8%	12%	8%	18%	
	\$ in billions	\$892	\$954	\$1,003	\$987	\$994	
	Charge-off Rate	0.6%	0.6%	0.5%	0.6%	0.6%	
	Criticized Assets (% of Total Loans)	2.2%	1.6%	1.2%	1.5%	4.0%	
Citi Group	Loans to GDP	3.3%	3.4%	3.3%	3.3%	3.5%	+
	5 year % change	-20%	-16%	-16%	-11%	1%	
	\$ in billions	\$625	\$668	\$685	\$700	\$686	
	Charge-off Rate	1.1%	1.1%	1.1%	1.1%	1.3%	
	Criticized Assets (% of Total Loans)	n/a	n/a	n/a	4.4%	10.6%	
Wells Fargo	Loans to GDP	5.2%	4.9%	4.6%	4.5%	4.8%	+
	5 year % change	4%	-1%	-6%	-9%	-2%	
	\$ in billions	\$972	\$961	\$953	\$965	\$935	
	Charge-off Rate	0.4%	0.3%	0.3%	0.3%	0.4%	
	Criticized Assets (% of Total Loans)	3.0%	2.3%	2.2%	2.1%	4.1%	
Bank of America	Loans to GDP	4.8%	4.8%	4.6%	4.6%	5.1%	+
	5 year % change	-19%	-14%	-17%	-9%	5%	
	\$ in billions	\$907	\$937	\$947	\$983	\$999	
	Charge-off Rate	0.5%	0.5%	0.4%	0.4%	0.4%	
	Criticized Assets (% of Total Loans)	1.8%	1.5%	1.2%	1.2%	2.6%	
Fannie Mae	Loans to GDP	16.4%	16.3%	15.8%	15.5%	17.2%	+
	5 year % change	-12%	-11%	-13%	-10%	4%	
	\$ in billions	\$3,077	\$3,174	\$3,242	\$3,327	\$3,364	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	
Freddie Mac	Loans to GDP	9.2%	9.1%	8.9%	8.8%	10.4%	+
	5 year % change	-19%	-11%	-11%	-9%	11%	
	\$ in billions	\$1,729	\$1,785	\$1,838	\$1,887	\$2,020	
	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.

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

## Real Estate

Total Debt		2016	2017	2018	2019	2020 Q2
Total Residential Mortgage Debt	Debt to GDP	51.5%	50.7%	49.4%	48.8%	54.4%
	5 Year % Change	-18%	-14%	-12%	-9%	5%
	\$ in billions	\$9,657	\$9,914	\$10,185	\$10,455	\$10,618
Total Commercial Real Estate Debt	Debt to GDP	21.6%	22.1%	22.1%	22.6%	25.5%
	5 Year % Change	2%	9%	10%	12%	27%
	\$ in billions	\$4,055	\$4,311	\$4,557	\$4,851	\$4,980



Monthly Residential Housing Summary		Mar-2020	Apr-2020	May-2020	Jun-2020	Jul-2020	Aug-2020
New Home Sales	Volume	612,000	570,000	698,000	841,000	965,000	1,011,000
	Annual Change	-12.6%	-14.2%	16.3%	15.8%	46.0%	43.2%
Existing Home Sales	Volume	5,270,000	4,330,000	3,910,000	4,700,000	5,860,000	6,000,000
	Annual Change	n/a	n/a	n/a	n/a	n/a	10.6%
Housing Starts	Volume	1,269,000	934,000	1,038,000	1,265,000	1,492,000	1,416,000
	Annual Change	5.5%	-26.3%	-18.1%	2.4%	23.1%	2.8%
Home Price Index (Case-Shiller 20 City Composite)	Index (2000=100)	222.96	223.50	223.43	223.44	224.68	n/a
	Annual Change	3.8%	3.8%	3.6%	3.5%	4.0%	n/a

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








## Additional Data





Public Debt		2016	2017	2018	2019	2020 Q2	
Federal Government Debt	Debt to GDP	106.6%	104.9%	106.6%	108.2%	135.6%	
	5 year % change	9%	3%	3%	5%	36%	⚠
	\$ in billions	\$19,977	\$20,493	\$21,974	\$23,201	\$26,477	
Memo: Federal Debt: Held by Public	Debt to GDP	77.0%	75.8%	78.1%	80.1%	105.2%	
	5 year % change	15%	6%	6%	8%	47%	⚠
	\$ in billions	\$14,435	\$14,815	\$16,102	\$17,170	\$20,530	
Memo: Federal Debt: Intragovernmental Holdings	Debt to GDP	29.6%	29.1%	28.5%	28.1%	30.5%	
	5 year % change	-4%	-3%	-4%	-4%	9%	+
	\$ in billions	\$5,542	\$5,678	\$5,872	\$6,031	\$5,946	
State and Local Government Debt	Debt to GDP	16.7%	16.0%	15.0%	14.4%	16.0%	
	5 year % change	-18%	-18%	-21%	-18%	-6%	+
	\$ in billions	\$3,132	\$3,132	\$3,082	\$3,092	\$3,125	

Supplementary Data		2016	2017	2018	2019	2020 Q2	
Nominal GDP	\$ in billions	\$18,745	\$19,543	\$20,612	\$21,433	\$19,520	
	Annual % Change	2.8%	4.3%	5.5%	4.0%	-8.5%	
Real GDP	Chained 2012 \$ in Billions	\$17,876	\$18,359	\$18,814	\$19,254	\$17,303	
	Annual % Change	2.1%	2.7%	2.5%	2.3%	-9.0%	
Consumer Price Index (Inflation)	CPI (2010=100)	110.07	112.41	115.16	117.24	117.80	
	Inflation Rate	1.3%	2.1%	2.4%	1.8%	1.3%	
Unemployment	Person (Thousands)	7,751	6,982	6,312	6,001	17,750	
	Unemployment Rate	4.7%	4.1%	3.9%	3.5%	11.1%	
Current Account Balance	\$ in billions	(\$428)	(\$440)	(\$491)	(\$498)	(\$535)	
	to GDP	-2.3%	-2.3%	-2.4%	-2.3%	-2.5%	

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

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

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