

TYCHOS SECTOR RISK REPORT

		2016	2017	2018	2019	2020 Q3
Total Private	Debt to GDP	150%	151%	150%	150%	160%
	5 year % change	-3%	1%	1%	2%	10%
	\$ in billions	\$28,035	\$29,559	\$30,988	\$32,225	\$33,950
Business Debt	Debt to GDP	72%	74%	75%	76%	83%
	5 year % change	10%	12%	12%	10%	20%
	\$ in billions	\$13,557	\$14,545	\$15,483	\$16,223	\$17,544
	Bond Default Rate	3.3%	1.9%	1.3%	1.3%	0.3%
Household Debt	Debt to GDP	77%	77%	75%	75%	77%
	5 year % change	-12%	-8%	-8%	-6%	1%
	\$ in billions	\$14,477	\$15,015	\$15,505	\$16,001	\$16,406
	*Delinquency Rate	2.4%	2.3%	2.4%	2.4%	2.4%

* 90+ Days Delinquency Rate

Areas of Concern

Corporate Sectors		2016	2017	2018	2019	2020 Q3
Communication Services	Debt to GDP	6.8%	7.2%	6.9%	7.4%	7.1%
	5 year % change	24%	25%	17%	24%	21%
	\$ in billions	\$1,273	\$1,406	\$1,423	\$1,590	\$1,503
	Default Rate	0.0%	2.6%	1.5%	2.8%	2.1%
Consumer Discretionary	Debt to GDP	5.9%	6.2%	6.0%	7.1%	7.8%
	5 year % change	6%	6%	6%	27%	46%
	\$ in billions	\$1,104	\$1,201	\$1,226	\$1,530	\$1,659
	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%	6.4%
	5 year % change	44%	29%	33%	35%	13%
	\$ in billions	\$1,134	\$1,151	\$1,230	\$1,441	\$1,356
	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%	5.7%
	5 year % change	61%	69%	47%	55%	48%
	\$ in billions	\$915	\$1,036	\$1,021	\$1,163	\$1,208
	Default Rate	1.2%	1.8%	0.0%	0.6%	0.0%
Automotive	Debt to GDP	2.2%	2.4%	2.4%	2.4%	2.6%
	5 year % change	31%	38%	26%	27%	33%
	\$ in billions	\$402	\$466	\$494	\$524	\$543
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.7%

Household Sectors		2016	2017	2018	2019	2020 Q3
Auto Loans	Debt to GDP	6.2%	6.2%	6.2%	6.2%	6.4%
	5 year % change	31%	29%	20%	14%	13%
	\$ in billions	\$1,157	\$1,221	\$1,274	\$1,331	\$1,360
	*Delinquency Rate	3.8%	4.1%	4.5%	4.9%	4.8%

* 90+ Days Delinquency Rate

Private Debt Lenders		2016	2017	2018	2019	2020 Q3
Agency/GSE backed Mortgage Pools	Debt to GDP	10.3%	10.9%	11.1%	11.2%	11.5%
	5 year % change	22%	22%	19%	20%	22%
	\$ in billions	\$1,930	\$2,125	\$2,291	\$2,406	\$2,427
Federal Government (Student & other loans)	Debt to GDP	6.4%	6.6%	6.8%	7.0%	7.9%
	5 year % change	47%	38%	14%	21%	32%
	\$ in billions	\$1,195	\$1,293	\$1,391	\$1,491	\$1,672
Credit Unions	Debt to GDP	4.4%	4.6%	4.8%	4.9%	5.2%
	5 year % change	25%	31%	32%	27%	30%
	\$ in billions	\$820	\$900	\$992	\$1,047	\$1,095
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.1%	1.9%	3.6%	3.9%	4.2%
	5 year % change	-14%	117%	328%	298%	296%
	\$ in billions	\$203	\$376	\$733	\$830	\$891

▲ 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

Derivative Activity by Contract Type		2016	2017	2018	2019	2020 Q3
Equities	Debt to GDP	13.2%	15.8%	16.4%	17.7%	19.0%
	5 year % change	28%	30%	35%	20%	40%
	\$ in billions	\$2,475	\$3,080	\$3,374	\$3,796	\$4,023

 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 Q3	
CRE	Debt to GDP	21.6%	22.1%	22.2%	22.7%	23.9%	
	5 year % change	2%	9%	10%	12%	18%	
	\$ in billions	\$4,055	\$4,316	\$4,568	\$4,856	\$5,055	⚠
	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%	7.5%	
	5 year % change	-5%	-6%	-9%	-4%	2%	+
	\$ in billions	\$1,331	\$1,432	\$1,454	\$1,592	\$1,579	
	Default Rate	0.4%	0.4%	0.4%	0.8%	0.0%	
	HY Debt to GDP	0.44%	0.41%	0.30%	0.31%	0.61%	
Communication Services	Debt to GDP	6.8%	7.2%	6.9%	7.4%	7.1%	
	5 year % change	24%	25%	17%	24%	21%	
	\$ in billions	\$1,273	\$1,406	\$1,423	\$1,590	\$1,503	⚠
	Default Rate	0.0%	2.6%	1.5%	2.8%	2.1%	
	HY Debt to GDP	0.93%	1.01%	0.84%	0.88%	0.82%	
Industrials	Debt to GDP	8.7%	9.0%	9.0%	9.4%	8.5%	
	5 year % change	-14%	-13%	-8%	3%	-0%	+
	\$ in billions	\$1,624	\$1,765	\$1,845	\$2,025	\$1,802	
	Default Rate	2.1%	1.4%	0.7%	0.4%	0.1%	
	HY Debt to GDP	0.96%	0.90%	0.92%	1.12%	1.25%	
Consumer Discretionary	Debt to GDP	5.9%	6.2%	6.0%	7.1%	7.8%	
	5 year % change	6%	6%	6%	27%	46%	⚠
	\$ in billions	\$1,104	\$1,201	\$1,226	\$1,530	\$1,659	
	Default Rate	2.7%	3.9%	2.4%	2.5%	0.5%	
	HY Debt to GDP	1.71%	1.52%	1.29%	1.45%	2.04%	
Health Care	Debt to GDP	6.1%	5.9%	6.0%	6.7%	6.4%	
	5 year % change	44%	29%	33%	35%	13%	⚠
	\$ in billions	\$1,134	\$1,151	\$1,230	\$1,441	\$1,356	
	Default Rate	0.7%	1.6%	0.8%	1.6%	0.0%	
	HY Debt to GDP	0.50%	0.65%	0.66%	0.58%	0.54%	
Information-Technology	Debt to GDP	4.9%	5.3%	5.0%	5.4%	5.7%	
	5 year % change	61%	69%	47%	55%	48%	⚠
	\$ in billions	\$915	\$1,036	\$1,021	\$1,163	\$1,208	
	Default Rate	1.2%	1.8%	0.0%	0.6%	0.0%	
	HY Debt to GDP	0.78%	0.78%	0.80%	0.66%	0.61%	
Energy	Debt to GDP	6.9%	6.4%	5.8%	6.1%	6.0%	
	5 year % change	33%	5%	-9%	-13%	-13%	⚠
	\$ in billions	\$1,285	\$1,239	\$1,196	\$1,308	\$1,263	
	Default Rate	16.4%	3.6%	3.9%	7.5%	0.5%	
	HY Debt to GDP	1.40%	1.21%	0.90%	0.81%	1.01%	
Real Estate	Debt to GDP	3.6%	3.7%	3.5%	3.7%	4.0%	
	5 year % change	10%	10%	3%	5%	9%	+
	\$ in billions	\$677	\$712	\$716	\$800	\$839	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%	
	HY Debt to GDP	0.41%	0.42%	0.40%	0.36%	0.38%	
Consumer Staples	Debt to GDP	4.0%	3.8%	3.7%	3.8%	3.8%	
	5 year % change	26%	15%	6%	11%	16%	⚠
	\$ in billions	\$754	\$732	\$758	\$812	\$806	
	Default Rate	1.0%	1.0%	1.1%	3.4%	0.0%	
	HY Debt to GDP	0.31%	0.30%	0.31%	0.32%	0.48%	
Materials	Debt to GDP	2.5%	2.5%	2.4%	2.4%	2.3%	
	5 year % change	3%	3%	-5%	-6%	-7%	+
	\$ in billions	\$462	\$481	\$484	\$519	\$491	
	Default Rate	4.0%	1.4%	1.5%	0.8%	0.0%	
	HY Debt to GDP	0.61%	0.54%	0.50%	0.48%	0.46%	
Memo: Automotive	Debt to GDP	2.2%	2.4%	2.4%	2.4%	2.6%	
	5 year % change	31%	38%	26%	27%	33%	⚠
	\$ in billions	\$402	\$466	\$494	\$524	\$543	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.7%	
	HY Debt to GDP	0.17%	0.19%	0.14%	0.16%	0.70%	
Memo: Agriculture	Debt to GDP	2.1%	2.1%	2.0%	2.0%	2.1%	
	5 year % change	9%	6%	-2%	-1%	6%	+
	\$ in billions	\$390	\$402	\$416	\$419	\$435	
	*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	7.5%	7.4%	6.5%	6.4%	8.2%	+
	5 year % change	-12%	-13%	-19%	-22%	-2%	
	\$ in billions	\$1,506	\$1,511	\$1,430	\$1,489	\$1,736	

• 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 Q3
Multi-Family Residential Mortgages	Debt to GDP	6.6%	7.0%	7.2%	7.6%	8.1%
	5 year % change	19%	27%	29%	31%	38%
	\$ in billions	\$1,236	\$1,363	\$1,489	\$1,622	\$1,716
Commercial Mortgages	Debt to GDP	14%	14%	14%	14%	14%
	5 year % change	-5%	1%	2%	4%	9%
	\$ in billions	\$2,592	\$2,717	\$2,833	\$2,967	\$3,061
Farm Mortgages	Debt to GDP	1.2%	1.2%	1.2%	1.2%	1.3%
	5 year % change	12%	13%	8%	11%	17%
	\$ in billions	\$226	\$236	\$246	\$267	\$278
Total CRE Debt	Debt to GDP	21.6%	22.1%	22.2%	22.7%	23.9%
	5 year % change	2%	9%	10%	12%	18%
	\$ in billions	\$4,055	\$4,316	\$4,568	\$4,856	\$5,055
Memo: Construction and Land Development Loans	Debt to GDP	1.7%	1.7%	1.7%	1.7%	1.8%
	5 year % change	8%	38%	36%	24%	26%
	\$ in billions	\$313	\$338	\$350	\$362	\$386
Commercial Real Estate Bank Loans	Charge-Off Rates	0.0%	0.0%	0.0%	0.0%	0.1%
	Delinquency Rates	0.9%	0.8%	0.7%	0.7%	1.0%

- 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 Q3	
Mortgage Debt	Debt to GDP	51.5%	50.8%	49.5%	48.9%	51.0%	+
	5 year % change	-18%	-14%	-12%	-9%	-1%	
	\$ in billions	\$9,659	\$9,929	\$10,212	\$10,484	\$10,800	
	*Delinquency Rate	1.6%	1.3%	1.1%	1.1%	0.7%	
	**CB Delinquency Rate	4.2%	3.6%	2.8%	2.4%	2.8%	
Student Loans	Debt to GDP	7.5%	7.6%	7.6%	7.7%	8.1%	!
	5 year % change	21%	17%	12%	9%	13%	
	\$ in billions	\$1,405	\$1,489	\$1,571	\$1,646	\$1,705	
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	6.5%	
	***Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	n/a	
Auto Loans	Debt to GDP	6.2%	6.2%	6.2%	6.2%	6.4%	!
	5 year % change	31%	29%	20%	14%	13%	
	\$ in billions	\$1,157	\$1,221	\$1,274	\$1,331	\$1,360	
	Default Rate	3.8%	4.1%	4.5%	4.9%	4.8%	
Credit Cards	Debt to GDP	4.2%	4.3%	4.2%	4.3%	3.8%	+
	5 year % change	-8%	2%	4%	8%	-2%	
	\$ in billions	\$779	\$834	\$870	\$927	\$807	
	Default Rate	7.1%	7.6%	7.8%	8.4%	9.7%	
Margin Debt	Debt to GDP	2.8%	3.3%	2.7%	2.7%	3.1%	!
	5 year % change	46%	50%	-6%	-4%	14%	
	\$ in billions	\$529	\$643	\$554	\$579	\$654	

* 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 Q3
Student Loans	Debt/GDP	7.5%	7.6%	7.6%	7.7%	8.1%
	5 Year % Change	21%	17%	12%	9%	13%
	\$ in Billions	\$1,405	\$1,489	\$1,571	\$1,646	\$1,705
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	6.5%
	**Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	n/s
Repayment Status	Debt to GDP	3.7%	4.0%	4.0%	4.1%	0.3%
	\$ in billions	\$671	\$740	\$784	\$848	\$59



Private Student Loans		2016	2017	2018	2019	2020 Q3
Private Student Loans	Debt/GDP	0.3%	0.3%	0.3%	0.3%	0.5%
	5 Year % Change	-9%	-12%	-13%	-16%	-32%
	\$ in Billions	\$64	\$63	\$65	\$64	\$65
	Delinquent Loans Bil \$	\$1	\$1	\$1	\$1	\$0
	**Delinquency Rate	2.08%	1.56%	1.67%	1.32%	0.66%
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	\$12
Grace Status	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%
	\$ in billions	\$1	\$2	\$2	\$2	\$4
Forbearance Status	Debt to GDP	0.0%	0.0%	0.0%	0.0%	0.0%
	\$ in billions	\$1	\$2	\$2	\$2	\$2
Federal Student Loans		2016	2017	2018	2019	2020 Q3
Federal Student Loans	Debt/GDP	6.9%	7.0%	7.0%	7.0%	6.5%
	5 Year % Change	27%	20%	13%	9%	17%
	\$ in Billions	\$1,292	\$1,367	\$1,439	\$1,510	\$1,377
	Delinquent Loans Bil \$	\$152	\$178	\$198	\$215	n/a
	**Delinquency Rate	27.5%	28.8%	30.1%	29.9%	n/a
In-School Status	Debt to GDP	0.8%	0.7%	0.7%	0.6%	0.5%
	\$ in billions	\$143	\$139	\$138	\$132	\$109
Repayment Status	Debt to GDP	2.8%	3.0%	3.2%	3.4%	0.1%
	\$ in billions	\$524	\$587	\$661	\$719	\$12
Deferment Status	Debt to GDP	0.6%	0.6%	0.6%	0.6%	0.5%
	\$ in billions	\$115	\$120	\$129	\$132	\$114
Grace Status	Debt to GDP	0.3%	0.2%	0.2%	0.2%	0.2%
	\$ in billions	\$51	\$49	\$44	\$45	\$37
Forbearance Status	Debt to GDP	0.6%	0.6%	0.6%	0.6%	4.4%
	\$ in billions	\$106	\$122	\$119	\$130	\$927
Other Status	Debt to GDP	0.0%	0.1%	0.0%	0.0%	0.0%
	\$ in billions	\$9	\$10	\$10	\$10	\$10

* 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, 2021, 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		2016	2017	2018	2019	2020 Q3	
Total Securities	Debt to GDP	212.0%	209.9%	208.0%	209.3%	236.8%	+
	5 year % change	-4%	-4%	-4%	-2%	12%	+
	\$ in billions	\$39,741	\$41,028	\$42,867	\$44,859	\$50,136	
Municipal Securities	Debt to GDP	20.7%	20.0%	18.6%	18.0%	18.5%	+
	5 year % change	-18%	-18%	-19%	-17%	-12%	+
	\$ in billions	\$3,885	\$3,899	\$3,842	\$3,862	\$3,923	
Marketable Treasury Securities	Debt to GDP	74.2%	74.0%	75.7%	77.8%	96.2%	!
	5 year % change	16%	9%	7%	9%	33%	!
	\$ in billions	\$13,908	\$14,469	\$15,608	\$16,673	\$20,368	
Mortgage Related Securities	Debt to GDP	48.1%	47.6%	47.2%	48.1%	51.5%	+
	5 year % change	-18%	-13%	-9%	-5%	6%	+
	\$ in billions	\$9,023	\$9,305	\$9,732	\$10,308	\$10,907	
Memo: Mortgage Related Securities: Agency MBS	Debt to GDP	34.8%	35.4%	35.3%	36.0%	38.6%	!
	5 year % change	-2%	1%	0%	5%	15%	!
	\$ in billions	\$6,530	\$6,924	\$7,269	\$7,711	\$8,181	
Memo: Mortgage Related Securities: Agency CMO	Debt to GDP	5.9%	5.5%	5.4%	5.2%	6.5%	+
	5 year % change	-34%	-31%	-21%	-25%	4%	+
	\$ in billions	\$1,109	\$1,081	\$1,103	\$1,117	\$1,378	
Memo: Mortgage Related Securities: Non-Agency CMBS	Debt to GDP	2.8%	2.6%	2.6%	2.8%	2.8%	+
	5 year % change	-36%	-34%	-29%	-23%	-17%	+
	\$ in billions	\$531	\$509	\$543	\$594	\$596	
Memo: Mortgage Related Securities: Non-Agency RMBS	Debt to GDP	4.6%	4.0%	4.0%	3.8%	3.5%	+
	5 year % change	-51%	-47%	-38%	-34%	-31%	+
	\$ in billions	\$853	\$791	\$817	\$805	\$751	
Corporate Debt Securities	Debt to GDP	46.3%	46.0%	44.8%	44.6%	49.3%	+
	5 year % change	5%	3%	-2%	-3%	9%	+
	\$ in billions	\$8,676	\$8,997	\$9,231	\$9,566	\$10,439	
Federal Agency Securities	Debt to GDP	10.5%	9.9%	8.9%	8.1%	8.3%	+
	5 year % change	-30%	-23%	-27%	-30%	-24%	+
	\$ in billions	\$1,972	\$1,935	\$1,842	\$1,726	\$1,766	
Money Market Securities (Commercial Paper)	Debt to GDP	4.7%	4.9%	4.8%	4.9%	4.5%	+
	5 year % change	-24%	-16%	-15%	-8%	-12%	+
	\$ in billions	\$885	\$966	\$996	\$1,045	\$957	
Asset-Backed Securities	Debt to GDP	7.4%	7.5%	7.8%	7.8%	8.4%	+
	5 year % change	-15%	-6%	2%	2%	11%	+
	\$ in billions	\$1,392	\$1,458	\$1,616	\$1,678	\$1,777	
Memo: Asset-Backed Securities: Automobile	Debt to GDP	1.0%	1.0%	1.1%	1.1%	1.0%	!
	5 year % change	39%	19%	13%	8%	-2%	!
	\$ in billions	\$194	\$203	\$223	\$236	\$221	
Memo: Asset-Backed Securities: Credit Card	Debt to GDP	0.7%	0.7%	0.6%	0.5%	0.3%	+
	5 year % change	-34%	-17%	-19%	-40%	-53%	+
	\$ in billions	\$131	\$129	\$124	\$101	\$71	
Memo: Asset-Backed Securities: Equipment	Debt to GDP	0.3%	0.3%	0.4%	0.3%	0.3%	!
	5 year % change	15%	11%	42%	15%	13%	!
	\$ in billions	\$52	\$56	\$84	\$75	\$73	
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%	37%	!
	\$ in billions	\$157	\$179	\$206	\$235	\$224	
Memo: Asset-Backed Securities: Student Loans	Debt to GDP	1.0%	0.9%	0.8%	0.7%	0.7%	+
	5 year % change	-34%	-38%	-40%	-40%	-37%	+
	\$ in billions	\$189	\$177	\$171	\$159	\$151	
Memo: Asset-Backed Securities: CDO/CLO	Debt to GDP	3.6%	3.7%	3.9%	5.0%	4.9%	!
	5 year % change	-21%	-5%	10%	38%	37%	!
	\$ in billions	\$670	\$714	\$808	\$1,069	\$1,038	

- 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 Q3	
US Chartered Depository Institutions	Debt to GDP	45.4%	45.2%	44.8%	44.5%	46.6%	+
	5 year % change	2%	4%	5%	4%	9%	+
	\$ in billions	\$8,503	\$8,829	\$9,226	\$9,539	\$9,859	
Non-Financial Corporations, Debt Securities	Debt to GDP	31.2%	31.5%	30.6%	30.6%	33.9%	!
	5 year % change	16%	13%	7%	4%	13%	!
	\$ in billions	\$5,838	\$6,158	\$6,299	\$6,559	\$7,170	
Government Sponsored Enterprises	Debt to GDP	26.9%	26.6%	25.9%	25.7%	27.8%	+
	5 year % change	-15%	-11%	-11%	-8%	4%	+
	\$ in billions	\$5,031	\$5,197	\$5,337	\$5,514	\$5,886	
Agency/GSE backed Mortgage Pools	Debt to GDP	10.3%	10.9%	11.1%	11.2%	11.5%	!
	5 year % change	22%	22%	19%	20%	22%	!
	\$ in billions	\$1,930	\$2,125	\$2,291	\$2,406	\$2,427	
Federal Government (Student & other loans)	Debt to GDP	6.4%	6.6%	6.8%	7.0%	7.9%	!
	5 year % change	47%	38%	14%	21%	32%	!
	\$ in billions	\$1,195	\$1,293	\$1,391	\$1,491	\$1,672	
Credit Unions	Debt to GDP	4.4%	4.6%	4.8%	4.9%	5.2%	!
	5 year % change	25%	31%	32%	27%	30%	!
	\$ in billions	\$820	\$900	\$992	\$1,047	\$1,095	
Issuers of Asset-Backed Securities	Debt to GDP	5.4%	4.9%	4.7%	4.6%	4.8%	+
	5 year % change	-53%	-50%	-39%	-31%	-23%	+
	\$ in billions	\$1,005	\$960	\$958	\$995	\$1,009	
Finance Companies	Debt to GDP	5.0%	4.8%	4.5%	4.3%	4.1%	+
	5 year % change	-27%	-28%	-30%	-31%	-29%	+
	\$ in billions	\$936	\$929	\$931	\$924	\$874	
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.1%	1.9%	3.6%	3.9%	4.2%	!
	5 year % change	-14%	117%	328%	298%	296%	!
	\$ in billions	\$203	\$376	\$733	\$830	\$891	
Margin Accounts	Debt to GDP	1.5%	1.7%	1.5%	1.5%	1.8%	!
	5 year % change	-4%	-9%	-27%	-28%	15%	!
	\$ in billions	\$277	\$333	\$302	\$326	\$385	

Financial Sector Debt

Financial Sector		2016	2017	2018	2019	2020 Q3	
Domestic Financial Sector	Debt to GDP	83.7%	81.8%	79.1%	77.8%	81.5%	+
	5 year % change	-14%	-11%	-12%	-11%	-2%	+
	\$ in billions	\$15,685	\$15,979	\$16,310	\$16,674	\$17,249	
Debt Securities	Debt to GDP	72.7%	71.3%	69.3%	68.7%	72.4%	+
	5 year % change	-16%	-13%	-12%	-10%	-1%	+
	\$ in billions	\$13,634	\$13,941	\$14,283	\$14,718	\$15,331	
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%	1.7%	+
	5 year % change	-49%	-47%	-35%	-31%	-30%	+
Memo: Debt Securities: Agency Securities	\$ in billions	\$434	\$397	\$431	\$398	\$357	
	Debt to GDP	45.3%	45.2%	44.1%	43.9%	46.5%	+
	5 year % change	-7%	-3%	-5%	-3%	6%	+
Memo: Debt Securities: Corporate and Foreign Bonds	\$ in billions	\$8,496	\$8,843	\$9,090	\$9,408	\$9,846	
	Debt to GDP	25.1%	24.1%	23.1%	22.9%	24.2%	+
	5 year % change	-26%	-24%	-22%	-19%	-9%	+
Loans	\$ in billions	\$4,703	\$4,701	\$4,762	\$4,912	\$5,128	
	Debt to GDP	10.9%	10.4%	9.8%	9.1%	9.1%	+
	5 year % change	10%	7%	-6%	-17%	-15%	+
Memo: Loans: Depository Institution Loans	\$ in billions	\$2,052	\$2,038	\$2,027	\$1,955	\$1,918	
	Debt to GDP	1.6%	1.5%	1.5%	1.4%	1.6%	+
	5 year % change	13%	16%	9%	-4%	5%	+
Memo: Loans: Other Loans and Advances	\$ in billions	\$293	\$301	\$311	\$310	\$347	
	Debt to GDP	8.1%	7.6%	7.2%	6.6%	6.4%	+
	5 year % change	11%	5%	-8%	-19%	-19%	+
Memo: Loans: Equity REIT Mortgages	\$ in billions	\$1,522	\$1,495	\$1,490	\$1,421	\$1,345	
	Debt to GDP	1.3%	1.2%	1.1%	1.0%	1.1%	+
	5 year % change	3%	3%	-14%	-21%	-19%	+
	\$ in billions	\$236	\$242	\$226	\$225	\$226	

• 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 & Investment (Total Economy) - U.S. into Foreign Countries

Debt Security Investment		2015	2016	2017	2018	2019	
United States Holdings of Foreign Debt Securities	to GDP	14.8%	14.6%	16.8%	16.5%	16.8%	+
	5 year % change	5%	-3%	3%	4%	3%	+
	\$ in billions	\$2,696	\$2,745	\$3,291	\$3,396	\$3,609	
Canada	to GDP	2.1%	2.2%	2.5%	2.5%	2.4%	+
	5 year % change	9%	-10%	-8%	-1%	-3%	+
	\$ in billions	\$380	\$409	\$484	\$514	\$505	
United Kingdom	to GDP	1.9%	1.7%	2.0%	2.1%	2.3%	+
	5 year % change	-25%	-24%	-14%	-4%	9%	+
	\$ in billions	\$343	\$318	\$382	\$432	\$504	
United Kingdom	to GDP	1.7%	1.9%	2.1%	2.2%	2.3%	⚠
	5 year % change	24%	31%	51%	66%	40%	⚠
	\$ in billions	\$302	\$349	\$405	\$456	\$499	
Equity and Investment Fund Shares		2015	2016	2017	2018	2019	
United States Holdings of Foreign Equity & Investment Fund Shares	to GDP	37.0%	38.1%	46.7%	38.3%	44.2%	⚠
	5 year % change	19%	32%	42%	-1%	15%	⚠
	\$ in billions	\$6,755	\$7,146	\$9,118	\$7,899	\$9,478	
Cayman Islands	to GDP	5.0%	5.4%	7.0%	6.2%	7.0%	⚠
	5 year % change	352%	73%	97%	55%	50%	⚠
	\$ in billions	\$915	\$1,020	\$1,362	\$1,287	\$1,501	
United Kingdom	to GDP	4.9%	4.7%	5.6%	4.5%	4.7%	⚠
	5 year % change	18%	13%	18%	-23%	-10%	⚠
	\$ in billions	\$897	\$878	\$1,091	\$927	\$1,014	
Japan	to GDP	3.8%	3.7%	4.6%	3.7%	4.3%	⚠
	5 year % change	26%	47%	75%	3%	28%	⚠
	\$ in billions	\$690	\$695	\$902	\$760	\$927	
Loans		2015	2016	2017	2018	2019	
United States Holdings of Foreign Loans	to GDP	2.6%	2.7%	2.8%	2.9%	3.2%	⚠
	5 year % change	129%	101%	72%	50%	35%	⚠
	\$ in billions	\$478	\$511	\$544	\$595	\$689	
United States Holdings of Foreign Loans: Bank Loans	to GDP	2.4%	2.5%	2.5%	2.6%	2.9%	⚠
	5 year % change	143%	111%	76%	53%	36%	⚠
	\$ in billions	\$441	\$475	\$487	\$545	\$631	
United States Holdings of Foreign Loans: Other Loans	to GDP	0.2%	0.2%	0.3%	0.2%	0.3%	⚠
	5 year % change	39%	22%	42%	19%	26%	⚠
	\$ in billions	\$37	\$36	\$56	\$51	\$58	

• 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 & 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

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n/a: Data Not Available

Derivative Activity

Notional Amounts by Type		2016	2017	2018	2019	2020 Q3	
Dealer (Trading)	Debt to GDP	837.0%	844.3%	823.0%	767.2%	808.9%	+
	5 year % change	-39%	-33%	-37%	-35%	-18%	+
	\$ in billions	\$156,901	\$165,002	\$169,636	\$164,441	\$171,242	
End User (Non-Trading)	Debt to GDP	16.3%	14.3%	11.9%	14.4%	17.7%	+
	5 year % change	-45%	-50%	-59%	-36%	10%	+
	\$ in billions	\$3,057	\$2,785	\$2,447	\$3,077	\$3,757	
Credit Derivatives	Debt to GDP	28.2%	21.4%	20.7%	18.4%	16.9%	+
	5 year % change	-70%	-74%	-69%	-66%	-62%	+
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,581	
Total Notional	Debt to GDP	881.6%	880.0%	855.6%	800.0%	843.5%	+
	5 year % change	-41%	-36%	-39%	-37%	-20%	+
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$178,579	
Derivative Activity by Contract Type		2016	2017	2018	2019	2020 Q3	
Interest Rate	Debt to GDP	664.1%	667.3%	621.8%	583.5%	612.9%	+
	5 year % change	-45%	-39%	-46%	-41%	-24%	+
	\$ in billions	\$124,488	\$130,417	\$128,166	\$125,056	\$129,758	
Foreign Exchange	Debt to GDP	169.3%	168.4%	190.3%	173.4%	187.4%	+
	5 year % change	3%	-1%	12%	-8%	7%	+
	\$ in billions	\$31,737	\$32,903	\$39,221	\$37,170	\$39,682	
Equities	Debt to GDP	13.2%	15.8%	16.4%	17.7%	19.0%	!
	5 year % change	28%	30%	35%	20%	40%	!
	\$ in billions	\$2,475	\$3,080	\$3,374	\$3,796	\$4,023	
Commodities	Debt to GDP	6.7%	7.0%	6.4%	7.0%	7.3%	+
	5 year % change	-22%	-19%	-11%	1%	-4%	+
	\$ in billions	\$1,257	\$1,373	\$1,315	\$1,495	\$1,536	
Credit Derivatives	Debt to GDP	28.2%	21.4%	20.7%	18.4%	16.9%	+
	5 year % change	-70%	-74%	-69%	-66%	-62%	+
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,581	
Total Notional	Debt to GDP	881.6%	880.0%	855.6%	800.0%	843.5%	+
	5 year % change	-41%	-36%	-39%	-37%	-20%	+
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$178,579	
Derivative Activity by Product		2016	2017	2018	2019	2020 Q3	
Futures & Forwards	Debt to GDP	182.5%	176.1%	175.4%	162.3%	188.1%	+
	5 year % change	-24%	-31%	-26%	-34%	-11%	+
	\$ in billions	\$34,201	\$34,407	\$36,144	\$34,787	\$39,822	
Total Options	Debt to GDP	156.7%	198.7%	184.4%	168.5%	168.1%	+
	5 year % change	-25%	6%	-4%	-9%	-4%	+
	\$ in billions	\$29,373	\$38,841	\$38,009	\$36,117	\$35,596	
Total Swaps	Debt to GDP	514.2%	483.7%	475.1%	450.8%	470.4%	+
	5 year % change	-45%	-43%	-48%	-42%	-23%	+
	\$ in billions	\$96,384	\$94,524	\$97,923	\$96,614	\$99,580	
Credit Derivatives	Debt to GDP	28.2%	21.4%	20.7%	18.4%	16.9%	+
	5 year % change	-70%	-74%	-69%	-66%	-62%	+
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,581	
Total Notional	Debt to GDP	881.6%	880.0%	855.6%	800.0%	843.5%	+
	5 year % change	-41%	-36%	-39%	-37%	-20%	+
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$178,579	

▲ High Concern
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Largest Individual Lenders

Lending Institutions		2016	2017	2018	2019	2020 Q3	
JP Morgan	Loans to GDP	4.8%	4.9%	4.9%	4.6%	4.8%	+
	5 year % change	2%	8%	12%	8%	12%	
	\$ in billions	\$892	\$954	\$1,003	\$987	\$1,015	
	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%	4.5%	
Citi Group	Loans to GDP	3.3%	3.4%	3.3%	3.3%	3.2%	+
	5 year % change	-20%	-16%	-16%	-11%	-7%	
	\$ in billions	\$625	\$668	\$685	\$700	\$668	
	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%	8.1%	
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%	4.5%	+
	5 year % change	-19%	-14%	-17%	-9%	-7%	
	\$ in billions	\$907	\$937	\$947	\$983	\$955	
	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%	3.7%	
Fannie Mae	Loans to GDP	16.4%	16.3%	15.8%	15.5%	16.8%	+
	5 year % change	-12%	-11%	-13%	-10%	2%	
	\$ in billions	\$3,077	\$3,174	\$3,242	\$3,327	\$3,549	
	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%	0.3%	+
	5 year % change	-19%	-11%	-11%	-9%	11%	
	\$ in billions	\$1,729	\$1,785	\$1,838	\$1,887	\$2,198	
	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
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Real Estate

Total Debt		2016	2017	2018	2019	2020 Q3
Total Residential Mortgage Debt	Debt to GDP	51.5%	50.8%	49.5%	48.9%	51.0%
	5 Year % Change	-18%	-14%	-12%	-9%	-1%
	\$ in billions	\$9,659	\$9,929	\$10,212	\$10,484	\$10,800
	Delinquency Rate	1.6%	1.3%	1.1%	1.1%	0.8%
	Forbearance Share	n/a	n/a	n/a	n/a	7.2%
Home Equity Loans Outstanding	Debt to GDP	3.2%	2.9%	2.6%	2.3%	2.2%
	5 Year % Change	-42%	-39%	-38%	-39%	-38%
	\$ in billions	\$601	\$570	\$533	\$501	\$458
Total Commercial Real Estate Debt	Debt to GDP	21.6%	22.1%	22.2%	22.7%	23.9%
	5 Year % Change	2%	9%	10%	12%	18%
	\$ in billions	\$4,055	\$4,316	\$4,568	\$4,856	\$5,055

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

Monthly Residential Housing Summary		Apr-2020	May-2020	Jun-2020	Jul-2020	Aug-2020	Sep-2020
New Home Sales	Volume	570,000	698,000	840,000	965,000	977,000	965,000
	Annual Change	-14.2%	16.3%	15.7%	48.1%	38.4%	32.9%
Existing Home Sales	Volume	4,330,000	3,910,000	4,700,000	5,860,000	6,000,000	6,570,000
	Annual Change	n/a	n/a	n/a	n/a	n/a	n/a
Housing Starts	Volume	934,000	1,038,000	1,265,000	1,487,000	1,373,000	1,437,000
	Annual Change	-26.3%	-18.1%	2.4%	22.7%	-0.3%	12.8%
Home Price Index (Case-Shiller 20 City Composite)	Index (2000=100)	223.51	223.38	223.52	225.22	228.44	231.72
	Annual Change	3.8%	3.6%	3.5%	4.2%	5.4%	6.7%

Refinance Statistics		2016	2017	2018	2019	2020 Q3
Home Equity Cash-out Volume	to GDP	0.1%	0.1%	0.1%	0.2%	0.2%
	5 Year % Change	94%	91%	255%	250%	218%
	\$ in billions	\$19	\$21	\$20	\$34	\$39
Second Mortgages/HELOC Consolidation Volume	to GDP	0.1%	0.0%	0.0%	0.1%	0.1%
	5 Year % Change	-27%	-52%	-43%	66%	243%
	\$ in billions	\$9	\$6	\$3	\$13	\$20
Total Combined Cash-out and Second Mortgages/HELOC Consolidation Volume	to GDP	0.2%	0.1%	0.1%	0.2%	0.3%
	5 Year % Change	25%	11%	108%	170%	226%
	\$ in billions	\$28	\$27	\$23	\$47	\$59

- 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 refinance 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
 ▲ 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 Q3
Federal Government Debt	Debt to GDP	106.6%	104.9%	106.6%	108.2%	127.3%
	5 year % change	9%	3%	3%	5%	29%
	\$ in billions	\$19,977	\$20,493	\$21,974	\$23,201	\$26,945
Memo: Federal Debt: Held by Public	Debt to GDP	77.0%	75.8%	78.1%	80.1%	99.3%
	5 year % change	15%	6%	6%	8%	39%
	\$ in billions	\$14,435	\$14,815	\$16,102	\$17,170	\$21,019
Memo: Federal Debt: Intragovernmental Holdings	Debt to GDP	29.6%	29.1%	28.5%	28.1%	28.0%
	5 year % change	-4%	-3%	-4%	-4%	2%
	\$ in billions	\$5,542	\$5,678	\$5,872	\$6,031	\$5,926
State and Local Government Debt	Debt to GDP	16.7%	16.0%	15.0%	14.4%	15.0%
	5 year % change	-18%	-18%	-21%	-18%	-12%
	\$ in billions	\$3,132	\$3,132	\$3,082	\$3,092	\$3,170










Supplementary Data		2016	2017	2018	2019	2020 Q3
Nominal GDP	\$ in billions	\$18,745	\$19,543	\$20,612	\$21,433	\$21,170
	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	\$18,597
	Annual % Change	2.1%	2.7%	2.5%	2.3%	-2.9%
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	12,277
	Unemployment Rate	4.7%	4.1%	3.9%	3.5%	7.9%
Current Account Balance	\$ in billions	(\$428)	(\$440)	(\$491)	(\$498)	(\$556)
	to GDP	-2.3%	-2.3%	-2.4%	-2.3%	-2.6%





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

Sources

Page One

- Board of Governors of the Federal Reserve System. "Z.1, Table D.3, Debt Outstanding by Sector." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- S&P Capital IQ. "Market Intelligence." <https://www.capitaliq.com/>.
- Board of Governors of the Federal Reserve System. "Charge-Off and Delinquency Rates on Loans and Leases at Commercial Banks." <https://www.federalreserve.gov/releases/chargeoff/delallsa.htm>.
- Federal Reserve Bank of New York. "Percent of Balance 90+ Days Delinquent by Loan Type." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.214, Loans." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.216, Other Loans and Advances." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- S&P Credit Pro. "Market Intelligence." <https://www.creditanalytics.capitaliq.com/>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.215, Depository Institution Loans." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table F.2, Distribution of Gross Domestic Product." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.208, Debt Securities." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table D.3, Debt Outstanding by Sector." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- S&P Capital IQ. "Market Intelligence." <https://www.capitaliq.com/>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.222, Consumer Credit." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.218, Home Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Federal Reserve Bank of New York. "Total Debt Balance and its Composition." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.
- Board of Governors of the Federal Reserve System. "Consumer Credit, Table G.19, Consumer Credit Outstanding." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=g19>.
- Federal Reserve Bank of New York. "Total Debt Balance and its Composition." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.

Page Two

- Office of the Comptroller of the Currency. "Quarterly Report on Bank Trading and Derivatives Activities." <https://www.occ.gov/publications-and-resources/publications/quarterly-report-on-bank-trading-and-derivatives-activities/index-quarterly-report-on-bank-trading-and-derivatives-activities.html>.

Page Three

- S&P Capital IQ. "Market Intelligence." <https://www.capitaliq.com/>.
- S&P Credit Pro. "Market Intelligence." <https://www.creditanalytics.capitaliq.com/>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.219, Multifamily Residential Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.220, Commercial Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- United States Department of Agriculture Economic Research Service. "Farm Sector Balance Sheet, 1960-2020F." Farm and Income Wealth Statistics. <https://data.ers.usda.gov/reports.aspx?ID=17835>.

Page Four

- Board of Governors of the Federal Reserve System. "Z.1, Table L.217, Total Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- FDIC. "Assets and Liabilities of FDIC-Insured Commercial Bank and Savings Institutions." <https://www.fdic.gov/bank/analytical/>.
- Board of Governors of the Federal Reserve System. "Charge-Off and Delinquency Rates on Loans and Leases at Commercial Banks." <https://www.federalreserve.gov/releases/chargeoff/>.
- United States Department of Agriculture Economic Research Service. "Farm Sector Balance Sheet, 1960-2020F." Farm and Income Wealth Statistics. <https://data.ers.usda.gov/reports.aspx?ID=17835>.

Sources

Page Five

- Board of Governors of the Federal Reserve System. "Z.1, Table L.218, Home Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.222, Consumer Credit." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Federal Reserve Bank of New York. "Total Debt Balance and its Composition." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.
- Board of Governors of the Federal Reserve System. "Consumer Credit, Table G.19, Consumer Credit Outstanding." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=g19>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.216, Other Loans and Advances." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Federal Reserve Bank of New York. "Percent of Balance 90+ Days Delinquent by Loan Type." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.
- Finra. "Margin Statistics: Debit Balances in Customers' Securities Margin Accounts." <https://www.finra.org/investors/learn-to-invest/advanced-investing/margin-statistics>.

Page Six

- Federal Reserve Bank of New York. "Total Debt Balance and its Composition." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.
- MeasureOne. "Private Student Loan Report." <https://www.measureone.com>.
- U.S. Department of Education. "Federal Student Loan Portfolio." <https://studentaid.gov/data-center/student/portfolio>.
- Federal Reserve Bank of New York. "Percent of Balance 90+ Days Delinquent by Loan Type." Quarterly Report on Household Debt and Credit. <https://www.newyorkfed.org/microeconomics/hhdc/background.html>.

Page Seven

- Securities Industry and Financial Markets Association (SIFMA). "US Fixed Income Issuance and Outstanding." Research and Data. <https://www.sifma.org/resources/archive/research/>.
- Securities Industry and Financial Markets Association (SIFMA). "US Marketable Treasury Issuance, Outstanding, and Interest Rates." Research and Data. <https://www.sifma.org/resources/archive/research/>.
- Securities Industry and Financial Markets Association (SIFMA). "US Mortgage-Related Issuance and Outstanding." Research and Data. <https://www.sifma.org/resources/archive/research/>.
- Securities Industry and Financial Markets Association (SIFMA). "US ABS Issuance and Outstanding." Research and Data. <https://www.sifma.org/resources/archive/research/>.

Page Eight

- Board of Governors of the Federal Reserve System. "Z.1, Table L.222, Consumer Credit." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.218, Home Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.219, Multifamily Residential Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.220, Commercial Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.215, Depository Institution Loans Not Elsewhere Classified." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.214, Loans." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.208, Debt Securities." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.216, Other Loans and Advances." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.215, Depository Institution Loans." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.108 Domestic Financial Sectors." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.

Page Nine

- Department of The Treasury. "Securities (C): Annual Cross-U.S. Border Portfolio Holdings." Treasury International Capital System (TIC). <https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/fpis.aspx>.
- Board of Governors of the Federal Reserve. "Z.1, Table L.133 Rest of World." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.

Sources

Page Ten

- Department of The Treasury. "Securities (C): Annual Cross-U.S. Border Portfolio Holdings." Treasury International Capital System (TIC). <https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/fpis.aspx>.

Page Eleven

- Office of the Comptroller of the Currency. "Quarterly Report on Bank Trading and Derivatives Activities." <https://www.occ.gov/publications-and-resources/publications/quarterly-report-on-bank-trading-and-derivatives-activities/index-quarterly-report-on-bank-trading-and-derivatives-activities.html>.

Page Twelve

- S&P Capital IQ. "Market Intelligence." <https://www.capitaliq.com/>.

Page Thirteen

- Board of Governors of the Federal Reserve System. "Z.1, Table L.218, Home Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.219, Multifamily Residential Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table L.220, Commercial Mortgages." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- National Association of Realtors, Existing Home Sales [EXHOSLUSM495S], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/EXHOSLUSM495S>, January 7, 2021.
- U.S. Census Bureau and U.S. Department of Housing and Urban Development, New One Family Houses Sold: United States [HSN1F], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/HSN1F>, January 7, 2021.
- S&P Dow Jones Indices LLC, S&P/Case-Shiller 20-City Composite Home Price Index [SPCS20RSA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/SPCS20RSA>, October 20, 2020.
- U.S. Census Bureau and U.S. Department of Housing and Urban Development, Housing Starts: Total: New Privately Owned Housing Units Started [HOUST], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/HOUST>, January 7, 2021.
- Freddie Mac. "Quarterly Refinance Statistics." <http://www.freddiemac.com/research/datasets/refinance-stats/index.page>.

Page Fourteen

- United States Treasury. "Debt to the Penny and Who Holds it." https://www.treasurydirect.gov/govt/reports/pd/pd_debttothepenny.htm.
- Board of Governors of the Federal Reserve System. "Z.1, Table D.3, Debt Outstanding by Sector." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- Board of Governors of the Federal Reserve System. "Z.1, Table F.2, Distribution of Gross Domestic Product." Data Download Program. <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>.
- U.S. Bureau of Economic Analysis, Real Gross Domestic Product [GDPC1], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDPC1>, January 7, 2021.
- International Monetary Fund. "Prices, Production, and Labor." International Financial Statistics. <https://www.imf.org/en/Data>.
- Bureau of Labor Statistics. "Current Population Survey: Unemployment." Labor Force Statistics. <https://www.bls.gov/cps/>.
- Bureau of Economic Analysis. "International Transaction." <https://www.bea.gov/data/intl-trade-investment/international-transactions>.