

TYCHOS SECTOR RISK REPORT

		2016	2017	2018	2019	2020 Q1
Total Private	Debt to GDP	150%	151%	150%	150%	154%
	5 year % change	-2%	1%	1%	1%	6%
	\$ in billions	\$28,021	\$29,530	\$30,934	\$32,180	\$33,092
Business Debt	Debt to GDP	72%	74%	74%	75%	78%
	5 year % change	9%	11%	11%	10%	15%
	\$ in billions	\$13,448	\$14,394	\$15,321	\$16,058	\$16,812
	Bond Default Rate	3.3%	1.9%	1.3%	1.3%	1.3%
Household Debt	Debt to GDP	78%	78%	76%	75%	76%
	5 year % change	-11%	-8%	-7%	-6%	-3%
	\$ in billions	\$14,573	\$15,136	\$15,613	\$16,122	\$16,280
	Delinquency Rate	3.3%	3.1%	3.1%	3.2%	3.2%

* 90+ Days Delinquency Rate

Areas of Concern

Corporate Sectors		2016	2017	2018	2019	2020 Q1
Communication Services	Debt to GDP	6.8%	7.2%	6.9%	7.1%	7.6%
	5 year % change	24%	25%	17%	18%	30%
	\$ in billions	\$1,273	\$1,406	\$1,423	\$1,502	\$1,635
	Default Rate	0.0%	2.6%	1.5%	2.8%	0.8%
Consumer Discretionary	Debt to GDP	5.9%	6.2%	6.0%	7.0%	7.6%
	5 year % change	6%	6%	6%	7%	42%
	\$ in billions	\$1,104	\$1,201	\$1,226	\$1,501	\$1,633
	Default Rate	2.7%	3.9%	2.4%	2.5%	0.2%
Health Care	Debt to GDP	6.1%	5.9%	6.0%	6.2%	6.2%
	5 year % change	44%	29%	33%	25%	16%
	\$ in billions	\$1,134	\$1,151	\$1,230	\$1,327	\$1,332
	Default Rate	0.7%	1.6%	0.8%	1.6%	0.6%
Information Technology	Debt to GDP	4.9%	5.3%	5.0%	5.2%	5.5%
	5 year % change	61%	69%	47%	47%	56%
	\$ in billions	\$915	\$1,036	\$1,021	\$1,112	\$1,182
	Default Rate	1.2%	1.8%	0.0%	0.6%	0.1%

Household Sectors		2016	2017	2018	2019	2020 Q1
Student Loans	Debt to GDP	7.5%	7.6%	7.7%	7.7%	7.8%
	5 year % change	22%	17%	12%	9%	10%
	\$ in billions	\$1,408	\$1,492	\$1,576	\$1,649	\$1,675
	Delinquency Rate	11.2%	11.0%	11.4%	11.1%	10.8%
	Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	27.5%
Auto Loans	Debt to GDP	6.2%	6.3%	6.2%	6.2%	6.3%
	5 year % change	31%	29%	20%	14%	16%
	\$ in billions	\$1,157	\$1,221	\$1,274	\$1,331	\$1,346
	Delinquency Rate	3.8%	4.1%	4.5%	4.9%	5.1%

* 90+ Days Delinquency Rate

Private Debt Lenders		2016	2017	2018	2019	2020 Q1
Agency/GSE backed Mortgage Pools	Debt to GDP	10.3%	10.9%	11.1%	11.2%	11.3%
	5 year % change	22%	22%	19%	20%	23%
	\$ in billions	\$1,930	\$2,125	\$2,291	\$2,406	\$2,431
Federal Government (Student & other loans)	Debt to GDP	6.4%	6.6%	6.8%	7.0%	7.1%
	5 year % change	57%	40%	29%	23%	23%
	\$ in billions	\$1,195	\$1,293	\$1,391	\$1,491	\$1,520
Credit Unions	Debt to GDP	4.4%	4.6%	4.8%	4.9%	4.9%
	5 year % change	25%	31%	32%	27%	29%
	\$ in billions	\$820	\$900	\$992	\$1,047	\$1,062
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.1%	1.9%	3.6%	3.9%	4.1%
	5 year % change	-14%	117%	328%	298%	312%
	\$ in billions	\$203	\$376	\$733	\$830	\$878

▲ 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 Q1
Equities	Debt to GDP	13.2%	15.8%	16.4%	17.7%	17.0%
	5 year % change	28%	30%	36%	20%	30%
	\$ in billions	\$2,475	\$3,080	\$3,374	\$3,796	\$3,662

 High Concern
  Concern
  Low Concern
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  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 Q1	
CRE	Debt to GDP	21.7%	22.1%	22.1%	22.6%	22.8%	
	5 year % change	2%	9%	10%	12%	14%	⚠
	\$ in billions	\$4,055	\$4,311	\$4,558	\$4,844	\$4,920	
	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%	7.0%	7.2%	
	5 year % change	-5%	-6%	-9%	-10%	-1%	+
	\$ in billions	\$1,331	\$1,432	\$1,454	\$1,502	\$1,554	
	Default Rate	0.4%	0.4%	0.4%	0.8%	0.0%	
	HY debt to GDP	0.41%	0.42%	0.38%	0.26%	0.26%	
Communication Services	Debt to GDP	6.8%	7.2%	6.9%	7.1%	7.6%	
	5 year % change	24%	25%	17%	18%	30%	⚠
	\$ in billions	\$1,273	\$1,406	\$1,423	\$1,502	\$1,635	
	Default Rate	0.0%	2.6%	1.5%	2.8%	0.8%	
	HY debt to GDP	0.84%	0.88%	0.94%	0.74%	0.75%	
Industrials	Debt to GDP	8.7%	9.0%	9.0%	9.1%	8.0%	
	5 year % change	-14%	-13%	-8%	1%	-10%	+
	\$ in billions	\$1,624	\$1,765	\$1,845	\$1,951	\$1,715	
	Default Rate	2.1%	1.4%	0.7%	0.4%	0.5%	
	HY debt to GDP	0.96%	0.84%	0.77%	0.88%	1.22%	
Consumer Discretionary	Debt to GDP	5.9%	6.2%	6.0%	7.0%	7.6%	
	5 year % change	6%	6%	6%	7%	42%	⚠
	\$ in billions	\$1,104	\$1,201	\$1,226	\$1,501	\$1,633	
	Default Rate	2.7%	3.9%	2.4%	2.5%	0.2%	
	HY debt to GDP	1.84%	1.61%	1.34%	1.14%	2.02%	
Health Care	Debt to GDP	6.1%	5.9%	6.0%	6.2%	6.2%	
	5 year % change	44%	29%	33%	25%	16%	⚠
	\$ in billions	\$1,134	\$1,151	\$1,230	\$1,327	\$1,332	
	Default Rate	0.7%	1.6%	0.8%	1.6%	0.6%	
	HY debt to GDP	0.46%	0.47%	0.57%	0.59%	0.56%	
Information-Technology	Debt to GDP	4.9%	5.3%	5.0%	5.2%	5.5%	
	5 year % change	61%	69%	47%	47%	56%	⚠
	\$ in billions	\$915	\$1,036	\$1,021	\$1,112	\$1,182	
	Default Rate	1.2%	1.8%	0.0%	0.6%	0.1%	
	HY debt to GDP	0.57%	0.75%	0.75%	0.66%	0.63%	
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	\$1,315	\$1,302	
	Default Rate	16.4%	3.6%	3.9%	7.5%	0.7%	
	HY debt to GDP	1.32%	1.33%	1.14%	0.81%	1.12%	
Real Estate	Debt to GDP	3.6%	3.7%	3.5%	3.6%	4.0%	
	5 year % change	10%	10%	3%	2%	12%	+
	\$ in billions	\$677	\$712	\$716	\$783	\$853	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%	
	HY debt to GDP	0.47%	0.38%	0.39%	0.34%	0.35%	
Consumer Staples	Debt to GDP	4.0%	3.8%	3.7%	3.7%	3.8%	
	5 year % change	26%	15%	6%	6%	11%	⚠
	\$ in billions	\$754	\$732	\$758	\$787	\$811	
	Default Rate	1.0%	1.0%	1.1%	3.4%	0.6%	
	HY debt to GDP	0.34%	0.30%	0.29%	0.27%	0.47%	
Materials	Debt to GDP	2.5%	2.5%	2.4%	2.4%	2.3%	
	5 year % change	3%	3%	-5%	-4%	-6%	+
	\$ in billions	\$462	\$481	\$484	\$512	\$499	
	Default Rate	4.0%	1.4%	1.5%	0.8%	0.6%	
	HY debt to GDP	0.55%	0.58%	0.50%	0.10%	0.47%	
Memo: Automotive	Debt to GDP	2.2%	2.4%	2.4%	2.4%	2.6%	
	5 year % change	31%	38%	26%	24%	37%	⚠
	\$ in billions	\$402	\$466	\$494	\$517	\$558	
	Default Rate	0.0%	0.0%	0.0%	0.0%	0.0%	
	HY debt to GDP	0.14%	0.13%	0.07%	0.07%	0.07%	
Memo: Agriculture	Debt to GDP	2.1%	2.1%	2.0%	2.0%	2.0%	
	5 year % change	9%	6%	-2%	-3%	-0%	+
	\$ in billions	\$390	\$402	\$416	\$423	\$425	
	*Delinquency Rate	1.2%	1.5%	1.7%	1.8%	1.8%	
	HY debt to GDP	n/a	n/a	n/a	n/a	n/a	

* 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 Breakdown

CRE Debt		2016	2017	2018	2019	2020 Q1
Multi-Family Residential Mortgages	Debt to GDP	6.6%	7.0%	7.2%	7.5%	7.6%
	5 year % change	19%	26%	28%	31%	32%
	\$ in billions	\$1,236	\$1,359	\$1,477	\$1,615	\$1,637
Commercial Mortgages	Debt to GDP	14%	14%	14%	14%	14%
	5 year % change	-5%	2%	2%	4%	6%
	\$ in billions	\$2,592	\$2,716	\$2,836	\$2,973	\$3,012
Farm Mortgages	Debt to GDP	1.2%	1.2%	1.2%	1.2%	1.3%
	5 year % change	12%	13%	8%	7%	13%
	\$ in billions	\$226	\$236	\$246	\$257	\$270
Total CRE Debt	Debt to GDP	21.7%	22.1%	22.1%	22.6%	22.8%
	5 year % change	2%	9%	10%	12%	14%
	\$ in billions	\$4,055	\$4,311	\$4,558	\$4,844	\$4,920
Memo: Construction and Land Development Loans	Debt to GDP	1.7%	1.7%	1.7%	1.7%	1.7%
	5 year % change	8%	38%	36%	24%	25%
	\$ in billions	\$313	\$338	\$350	\$362	\$370
Commercial Real Estate Bank Loans	Charge-Off Rates	0.0%	0.0%	0.0%	0.0%	0.4%
	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 Q1	
Mortgage Debt	Debt to GDP	51.2%	50.0%	48.8%	48.2%	49.2%	
	5 year % change	-19%	-15%	-14%	-11%	-17%	
	\$ in billions	\$9,579	\$9,764	\$10,052	\$10,320	\$10,600	+
	*Delinquency Rate	1.6%	1.3%	1.1%	1.1%	1.1%	
Student Loans	Debt to GDP	7.5%	7.6%	7.7%	7.7%	7.8%	
	5 year % change	22%	17%	12%	9%	10%	
	\$ in billions	\$1,408	\$1,492	\$1,576	\$1,649	\$1,675	⚠
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	10.8%	
	**Alt Delinquency Rate	25.3%	26.7%	28.1%	28.1%	27.5%	
Auto Loans	Debt to GDP	6.2%	6.3%	6.2%	6.2%	6.3%	
	5 year % change	31%	29%	20%	14%	16%	
	\$ in billions	\$1,157	\$1,221	\$1,274	\$1,331	\$1,346	⚠
	Default Rate	3.8%	4.1%	4.5%	4.9%	5.1%	
Credit Cards	Debt to GDP	4.2%	4.3%	4.2%	4.3%	4.1%	
	5 year % change	-8%	2%	4%	8%	9%	
	\$ in billions	\$779	\$834	\$870	\$927	\$893	+
	Default Rate	7.1%	7.6%	7.8%	8.4%	9.1%	
Margin Debt	Debt to GDP	2.8%	3.3%	2.7%	2.7%	2.2%	
	5 year % change	46%	50%	-6%	-4%	-23%	
	\$ in billions	\$529	\$643	\$554	\$579	\$479	+

* 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

Student Loan Summary

Total Student Loans		2016	2017	2018	2019	2020 Q1
Student Loans	Debt/GDP	7.5%	7.6%	7.7%	7.7%	7.8%
	5 Year % Change	22%	17%	12%	9%	10%
	\$ in Billions	\$1,408	\$1,492	\$1,576	\$1,649	\$1,675
	*Delinquency Rate	11.2%	11.0%	11.4%	11.1%	10.8%
	**Alt Delinquency Rate	21.6%	22.9%	25.5%	25.5%	24.8%
Repayment Status	Debt to GDP	3.7%	4.0%	4.0%	4.1%	4.2%
	\$ in billions	\$671	\$740	\$784	\$848	\$898



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 Q1
Federal Student Loans	Debt/GDP	6.9%	7.0%	7.0%	7.0%	7.0%
	5 Year % Change	27%	20%	13%	9%	11%
	\$ in Billions	\$1,292	\$1,367	\$1,439	\$1,510	\$1,515
	Delinquent Loans Bil \$	\$152	\$178	\$198	\$215	\$222
	**Delinquency Rate	27.52%	28.76%	30.08%	29.94%	29.15%
In-School Status	Debt to GDP	0.8%	0.7%	0.7%	0.6%	0.6%
	\$ in billions	\$144	\$140	\$138	\$132	\$126
Repayment Status	Debt to GDP	3.7%	3.8%	3.9%	3.9%	4.1%
	\$ in billions	\$691	\$736	\$798	\$843	\$883
Deferment Status	Debt to GDP	0.7%	0.7%	0.7%	0.6%	0.6%
	\$ in billions	\$128	\$131	\$138	\$139	\$125
Grace Status	Debt to GDP	0.3%	0.3%	0.2%	0.2%	0.1%
	\$ in billions	\$51	\$49	\$44	\$45	\$24
Forbearance Status	Debt to GDP	0.7%	0.7%	0.7%	0.7%	0.7%
	\$ in billions	\$126	\$143	\$134	\$145	\$145
Other Status	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.1%
	\$ in billions	\$12	\$13	\$12	\$13	\$13



* 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		2015	2016	2017	2018	2019 Q3	
Total Securities	Debt to GDP	211.4%	212.4%	210.3%	208.2%	210.6%	
	5 year % change	-7%	-4%	-4%	-4%	-2%	+
	\$ in billions	\$38,526	\$39,755	\$41,040	\$42,857	\$45,130	
Municipal Securities	Debt to GDP	21.0%	20.7%	19.9%	18.6%	18.0%	
	5 year % change	-21%	-18%	-18%	-19%	-17%	+
	\$ in billions	\$3,830	\$3,876	\$3,890	\$3,835	\$3,855	
Marketable Treasury Securities	Debt to GDP	72.4%	74.3%	74.1%	75.8%	77.8%	
	5 year % change	23%	16%	9%	7%	9%	+
	\$ in billions	\$13,192	\$13,908	\$14,469	\$15,608	\$16,673	
Mortgage Related Securities	Debt to GDP	48.8%	48.2%	47.7%	47.3%	48.2%	
	5 year % change	-21%	-17%	-13%	-9%	-4%	+
	\$ in billions	\$8,895	\$9,023	\$9,305	\$9,732	\$10,334	
Memo: Mortgage Related Securities: Agency MBS	Debt to GDP	34.1%	34.9%	35.5%	35.3%	36.0%	
	5 year % change	-7%	-2%	2%	0%	5%	+
	\$ in billions	\$6,217	\$6,530	\$6,924	\$7,269	\$7,711	
Memo: Mortgage Related Securities: Agency CMO	Debt to GDP	6.3%	5.9%	5.5%	5.4%	5.2%	
	5 year % change	-30%	-34%	-31%	-21%	-25%	+
	\$ in billions	\$1,150	\$1,109	\$1,081	\$1,103	\$1,111	
Memo: Mortgage Related Securities: Non-Agency CMBS	Debt to GDP	3.3%	2.8%	2.6%	2.6%	2.8%	
	5 year % change	-34%	-36%	-34%	-29%	-21%	+
	\$ in billions	\$603	\$532	\$509	\$543	\$608	
Memo: Mortgage Related Securities: Non-Agency RMBS	Debt to GDP	5.1%	4.6%	4.1%	4.0%	5.1%	
	5 year % change	-55%	-51%	-47%	-38%	-10%	+
	\$ in billions	\$925	\$853	\$791	\$817	\$1,099	
Corporate Debt Securities	Debt to GDP	45.5%	46.5%	46.2%	44.9%	44.8%	
	5 year % change	1%	6%	3%	-2%	-2%	+
	\$ in billions	\$8,296	\$8,699	\$9,018	\$9,232	\$9,598	
Federal Agency Securities	Debt to GDP	11.0%	10.5%	9.9%	9.0%	8.5%	
	5 year % change	-35%	-30%	-23%	-27%	-26%	+
	\$ in billions	\$1,995	\$1,972	\$1,935	\$1,842	\$1,826	
Money Market Securities (Commercial Paper)	Debt to GDP	5.2%	4.7%	5.0%	4.8%	4.9%	
	5 year % change	-27%	-24%	-16%	-15%	-8%	+
	\$ in billions	\$942	\$885	\$966	\$996	\$1,045	
Asset-Backed Securities	Debt to GDP	7.6%	7.4%	7.5%	7.9%	8.4%	
	5 year % change	-25%	-15%	-6%	2%	9%	+
	\$ in billions	\$1,377	\$1,392	\$1,458	\$1,616	\$1,799	
Memo: Asset-Backed Securities: Automobile	Debt to GDP	1.0%	1.0%	1.0%	1.1%	1.2%	
	5 year % change	35%	39%	20%	14%	22%	!
	\$ in billions	\$189	\$194	\$203	\$223	\$264	
Memo: Asset-Backed Securities: Credit Card	Debt to GDP	0.7%	0.7%	0.7%	0.6%	0.6%	
	5 year % change	-51%	-34%	-17%	-19%	-26%	+
	\$ in billions	\$129	\$131	\$129	\$124	\$122	
Memo: Asset-Backed Securities: Equipment	Debt to GDP	0.3%	0.3%	0.3%	0.4%	0.4%	
	5 year % change	20%	16%	12%	42%	14%	!
	\$ in billions	\$53	\$52	\$56	\$84	\$74	
Memo: Asset-Backed Securities: Other	Debt to GDP	0.8%	0.8%	0.9%	1.0%	1.0%	
	5 year % change	10%	23%	34%	35%	37%	!
	\$ in billions	\$144	\$157	\$179	\$206	\$220	
Memo: Asset-Backed Securities: Student Loans	Debt to GDP	1.1%	1.0%	0.9%	0.8%	0.8%	
	5 year % change	-31%	-34%	-38%	-39%	-36%	+
	\$ in billions	\$202	\$189	\$177	\$171	\$170	
Memo: Asset-Backed Securities: CDO/CLO	Debt to GDP	3.6%	3.6%	3.7%	3.9%	3.8%	
	5 year % change	-31%	-21%	-5%	10%	5%	+
	\$ in billions	\$660	\$670	\$714	\$808	\$814	

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
 *ABS Memo Data 2019 Q3

! 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 Q1	
US Chartered Depository Institutions	Debt to GDP	45.4%	45.2%	44.8%	44.5%	46.3%	+
	5 year % change	2%	4%	5%	4%	10%	
	\$ in billions	\$8,503	\$8,829	\$9,226	\$9,539	\$9,962	
Non-Financial Corporations, Debt Securities	Debt to GDP	31%	32%	31%	31%	31%	+
	5 year % change	16%	13%	7%	4%	8%	
	\$ in billions	\$5,838	\$6,158	\$6,299	\$6,559	\$6,782	
Government Sponsored Enterprises	Debt to GDP	26.9%	26.6%	25.9%	25.7%	25.9%	+
	5 year % change	-15%	-11%	-11%	-8%	-4%	
	\$ in billions	\$5,031	\$5,197	\$5,337	\$5,514	\$5,572	
Agency/GSE backed Mortgage Pools	Debt to GDP	10.3%	10.9%	11.1%	11.2%	11.3%	!
	5 year % change	22%	22%	19%	20%	23%	
	\$ in billions	\$1,930	\$2,125	\$2,291	\$2,406	\$2,431	
Federal Government (Student & other loans)	Debt to GDP	6.4%	6.6%	6.8%	7.0%	7.1%	!
	5 year % change	57%	40%	29%	23%	23%	
	\$ in billions	\$1,195	\$1,293	\$1,391	\$1,491	\$1,520	
Credit Unions	Debt to GDP	4.4%	4.6%	4.8%	4.9%	4.9%	!
	5 year % change	25%	31%	32%	27%	29%	
	\$ in billions	\$820	\$900	\$992	\$1,047	\$1,062	
Issuers of Asset-Backed Securities	Debt to GDP	5.4%	4.9%	4.7%	4.6%	4.7%	+
	5 year % change	-53%	-50%	-39%	-31%	-28%	
	\$ in billions	\$1,005	\$960	\$958	\$995	\$1,017	
Finance Companies	Debt to GDP	5.0%	4.8%	4.5%	4.3%	4.3%	+
	5 year % change	-27%	-28%	-30%	-31%	-29%	
	\$ in billions	\$936	\$929	\$931	\$924	\$929	
Rest of World (Foreign Loans to US Businesses)	Debt to GDP	1.1%	1.9%	3.6%	3.9%	4.1%	!
	5 year % change	-14%	117%	328%	298%	312%	
	\$ in billions	\$203	\$376	\$733	\$830	\$878	
Margin Accounts	Debt to GDP	1.5%	1.7%	1.5%	1.5%	1.6%	+
	5 year % change	-4%	-9%	-27%	-28%	-20%	
	\$ in billions	\$277	\$333	\$302	\$326	\$338	

Financial Sector Debt

Financial Sector		2016	2017	2018	2019	2020 Q1	
Domestic Financial Sector	Debt to GDP	83.8%	81.9%	79.2%	77.8%	81.6%	+
	5 year % change	-13%	-11%	-11%	-11%	-3%	
	\$ in billions	\$15,685	\$15,980	\$16,309	\$16,671	\$17,575	
Debt Securities	Debt to GDP	72.8%	71.4%	69.4%	68.7%	70.6%	+
	5 year % change	-16%	-13%	-12%	-10%	-4%	
	\$ in billions	\$13,633	\$13,941	\$14,282	\$14,716	\$15,208	
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%	1.9%	+
	5 year % change	-49%	-47%	-35%	-31%	-27%	
Memo: Debt Securities: Agency Securities	\$ in billions	\$434	\$397	\$431	\$397	\$403	
	Debt to GDP	45.4%	45.3%	44.2%	43.9%	45.3%	+
	5 year % change	-7%	-3%	-5%	-3%	3%	
Memo: Debt Securities: Corporate and Foreign Bonds	\$ in billions	\$8,496	\$8,843	\$9,090	\$9,410	\$9,750	
	Debt to GDP	25.1%	24.1%	23.1%	22.9%	23.5%	+
	5 year % change	-25%	-24%	-21%	-19%	-15%	
Loans	\$ in billions	\$4,703	\$4,701	\$4,761	\$4,909	\$5,056	
	Debt to GDP	11.0%	10.4%	9.9%	9.1%	11.0%	+
	5 year % change	10%	7%	-6%	-17%	3%	
Memo: Loans: Depository Institution Loans	\$ in billions	\$2,052	\$2,038	\$2,027	\$1,955	\$2,367	
	Debt to GDP	1.6%	1.5%	1.5%	1.4%	1.9%	!
	5 year % change	13%	16%	9%	-4%	28%	
Memo: Loans: Other Loans and Advances	\$ in billions	\$293	\$301	\$311	\$309	\$420	
	Debt to GDP	8.1%	7.7%	7.2%	6.6%	8.0%	+
	5 year % change	11%	6%	-7%	-19%	2%	
Memo: Loans: Mortgages	\$ in billions	\$1,522	\$1,495	\$1,491	\$1,422	\$1,724	
	Debt to GDP	2.3%	2.0%	2.1%	1.9%	1.9%	+
	5 year % change	-49%	-47%	-35%	-31%	-27%	
\$ in billions	\$434	\$397	\$431	\$397	\$403		

▲ High Concern
 ▲ Concern
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Portfolio Loans & 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 & 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

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Derivative Activity

Notional Amounts by Type		2016	2017	2018	2019	2020 Q1
Dealer (Trading)	Debt to GDP	838.4%	845.3%	824.3%	767.4%	882.3%
	5 year % change	-38%	-33%	-37%	-35%	-17%
	\$ in billions	\$156,901	\$165,002	\$169,636	\$164,441	\$189,995
End User (Non-Trading)	Debt to GDP	16.3%	14.3%	11.9%	14.4%	16.3%
	5 year % change	-45%	-50%	-59%	-36%	-19%
	\$ in billions	\$3,057	\$2,785	\$2,447	\$3,077	\$3,518
Credit Derivatives	Debt to GDP	28.3%	21.4%	20.7%	18.4%	18.5%
	5 year % change	-70%	-74%	-69%	-66%	-8%
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,986
Total Notional	Debt to GDP	883.0%	881.0%	856.9%	800.2%	917.1%
	5 year % change	-41%	-36%	-39%	-37%	-19%
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$197,500
Derivative Activity by Contract Type		2016	2017	2018	2019	2020 Q1
Interest Rate	Debt to GDP	665.2%	668.1%	622.8%	583.6%	678.1%
	5 year % change	-45%	-39%	-46%	-41%	-23%
	\$ in billions	\$124,488	\$130,417	\$128,166	\$125,056	\$146,027
Foreign Exchange	Debt to GDP	169.6%	168.6%	190.6%	173.5%	195.9%
	5 year % change	4%	-1%	12%	-8%	7%
	\$ in billions	\$31,737	\$32,903	\$39,221	\$37,170	\$42,181
Equities	Debt to GDP	13.2%	15.8%	16.4%	17.7%	17.0%
	5 year % change	28%	30%	36%	20%	30%
	\$ in billions	\$2,475	\$3,080	\$3,374	\$3,796	\$3,662
Commodities	Debt to GDP	6.7%	7.0%	6.4%	7.0%	7.6%
	5 year % change	-22%	-18%	-11%	1%	11%
	\$ in billions	\$1,257	\$1,373	\$1,315	\$1,495	\$1,644
Credit Derivatives	Debt to GDP	28.3%	21.4%	20.7%	18.4%	18.5%
	5 year % change	-70%	-74%	-69%	-66%	-63%
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,986
Total Notional	Debt to GDP	665.2%	668.1%	622.8%	583.6%	678.1%
	5 year % change	-45%	-39%	-46%	-41%	-23%
	\$ in billions	\$124,488	\$130,417	\$128,166	\$125,056	\$146,027
Derivative Activity by Product		2016	2017	2018	2019	2020 Q1
Futures & Forwards	Debt to GDP	182.7%	176.3%	175.6%	162.3%	217.3%
	5 year % change	-24%	-31%	-26%	-34%	-12%
	\$ in billions	\$34,201	\$34,407	\$36,144	\$34,787	\$46,804
Total Options	Debt to GDP	156.9%	199.0%	184.7%	168.6%	167.7%
	5 year % change	-25%	6%	-4%	-9%	-5%
	\$ in billions	\$29,373	\$38,841	\$38,009	\$36,117	\$36,111
Total Swaps	Debt to GDP	515.0%	484.3%	475.8%	450.9%	513.6%
	5 year % change	-45%	-43%	-48%	-42%	-22%
	\$ in billions	\$96,384	\$94,524	\$97,923	\$96,614	\$110,599
Credit Derivatives	Debt to GDP	28.3%	21.4%	20.7%	18.4%	18.5%
	5 year % change	-70%	-74%	-69%	-66%	-63%
	\$ in billions	\$5,293	\$4,186	\$4,270	\$3,945	\$3,986
Total Notional	Debt to GDP	883.0%	881.0%	856.9%	800.2%	917.1%
	5 year % change	-41%	-36%	-39%	-37%	-19%
	\$ in billions	\$165,252	\$171,973	\$176,353	\$171,462	\$197,500

▲ High Concern
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Largest Individual Lenders

Lending Institutions		2016	2017	2018	2019	2020 Q1	
JP Morgan	Loans to GDP	4.8%	4.9%	4.9%	4.6%	4.8%	⚠
	5 year % change	2%	8%	12%	8%	15%	
	\$ in billions	\$892	\$954	\$1,003	\$987	\$1,043	
	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%	2.1%	
Citi Group	Loans to GDP	3.3%	3.4%	3.3%	3.3%	3.4%	+
	5 year % change	-20%	-16%	-16%	-11%	-3%	
	\$ in billions	\$625	\$668	\$685	\$700	\$722	
	Charge-off Rate	1.1%	1.1%	1.1%	1.1%	1.2%	
	Criticized Assets (% of Total Loans)	n/a	n/a	n/a	4.4%	n/a	
Wells Fargo	Loans to GDP	5.2%	4.9%	4.6%	4.5%	4.7%	+
	5 year % change	4%	-1%	-6%	-9%	-3%	
	\$ in billions	\$972	\$961	\$953	\$965	\$1,010	
	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%	2.5%	
Bank of America	Loans to GDP	4.8%	4.8%	4.6%	4.6%	4.9%	+
	5 year % change	-19%	-14%	-17%	-9%	-0%	
	\$ in billions	\$907	\$937	\$947	\$983	\$1,051	
	Charge-off Rate	0.5%	0.5%	0.4%	0.4%	0.5%	
	Criticized Assets (% of Total Loans)	1.8%	1.5%	1.2%	1.2%	1.7%	
Fannie Mae	Loans to GDP	16.4%	16.3%	15.8%	15.5%	15.6%	+
	5 year % change	-12%	-11%	-13%	-10%	-7%	
	\$ 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%	9.2%	+
	5 year % change	-19%	-11%	-11%	-9%	-18%	
	\$ in billions	\$1,729	\$1,785	\$1,838	\$1,887	\$1,990	
	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 Q1
Total Residential Mortgage Debt	Debt to GDP	51.2%	50.0%	48.8%	48.2%	49.2%
	5 Year % Change	-19%	-15%	-14%	-11%	-17%
	\$ in billions	\$9,579	\$9,764	\$10,052	\$10,320	\$10,600
Total Commercial Real Estate Debt	Debt to GDP	21.8%	22.2%	22.4%	22.8%	23.1%
	5 Year % Change	-0%	7%	10%	12%	15%
	\$ in billions	\$4,079	\$4,334	\$4,601	\$4,889	\$4,965



Monthly Residential Housing Summary		Dec-2019	Jan-2019	Feb-2019	Mar-2020	Apr-2020	May-2020
New Home Sales	Volume	731,000	774,000	716,000	612,000	580,000	676,000
	Annual Change	29.6%	21.5%	7.7%	-12.6%	-12.7%	12.7%
Existing Home Sales	Volume	5,530,000	5,420,000	5,760,000	5,270,000	4,330,000	3,910,000
	Annual Change	n/a	n/a	n/a	n/a	n/a	n/a
Housing Starts	Volume	1,587,000	1,617,000	1,567,000	1,269,000	934,000	1,011,000
	Annual Change	42.1%	27.1%	37.8%	5.5%	-26.3%	-20.3%
Home Price Index (Case-Shiller 20 City Composite)	Index (2000=100)	220.19	220.97	222.10	223.18	223.92	n/a
	Annual Change	2.8%	3.1%	3.5%	3.9%	4.0%	n/a

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Additional Data

Public Debt		2016	2017	2018	2019	2020 Q1
Federal Government Debt	Debt to GDP	106.7%	105.0%	106.8%	108.3%	110.0%
	5 year % change	9%	3%	3%	5%	6%
	\$ in billions	\$19,977	\$20,493	\$21,974	\$23,201	\$23,687
Memo: Federal Debt: Held by Public	Debt to GDP	77.1%	75.9%	78.2%	80.1%	82.1%
	5 year % change	15%	6%	6%	8%	9%
	\$ in billions	\$14,435	\$14,815	\$16,102	\$17,170	\$17,675
Memo: Federal Debt: Intragovernmental Holdings	Debt to GDP	29.6%	29.1%	28.5%	28.1%	27.9%
	5 year % change	-4%	-3%	-4%	-4%	-3%
	\$ in billions	\$5,542	\$5,678	\$5,872	\$6,031	\$6,012
State and Local Government Debt	Debt to GDP	16.7%	16.0%	15.0%	14.4%	14.3%
	5 year % change	-18%	-18%	-20%	-18%	-15%
	\$ in billions	\$3,129	\$3,129	\$3,079	\$3,089	\$3,090










Supplementary Data		2016	2017	2018	2019	2020 Q1
Nominal GDP	\$ in billions	\$18,715	\$19,519	\$20,580	\$21,428	\$21,535
	Annual % Change	2.7%	4.3%	5.4%	4.1%	2.1%
Real GDP	Chained 2012 \$ in Billions	\$17,689	\$18,108	\$18,638	\$19,073	\$18,977
	Annual % Change	1.6%	2.4%	2.9%	2.3%	0.3%
Consumer Price Index (Inflation)	CPI (2010=100)	110.07	112.41	115.16	117.24	118.44
	Inflation Rate	1.3%	2.1%	2.4%	1.8%	2.1%
Unemployment	Person (Thousands)	7,751	6,982	6,312	6,001	7,388
	Unemployment Rate	4.7%	4.1%	3.9%	3.5%	4.4%
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

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. "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. "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. "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>.
- 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>.

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/>.

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 Bond Market 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.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>, February 21, 2020.
- 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>, February 25, 2020.
- 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>, February 25, 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>, February 25, 2020.

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>, February 26, 2020.
- 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>.