

TYCHOS SECTOR RISK REPORT

		2016	2017	2018	2019	2020 Q2
Total Private Debt	Debt to GDP	108%	109%	111%	113%	119%
	5 year % change	-2%	-1%	1%	6%	9%
	Billion Euro	€3,388	€3,571	€3,730	€3,919	€4,027
Business Debt	Debt to GDP	55%	56%	58%	59%	63%
	5 year % change	3%	5%	5%	11%	15%
	Billion Euro	€1,717	€1,842	€1,937	€2,043	€2,123
Household Debt	Debt to GDP	53%	53%	53%	54%	56%
	5 year % change	-7%	-6%	-4%	0%	3%
	Billion Euro	€1,671	€1,729	€1,793	€1,876	€1,904

Areas of Concern

Corporate Sectors		2016	2017	2018	2019	2020 Q2
Information Technology	Loans to GDP	3.0%	3.0%	3.0%	4.0%	4.0%
	5 year % change	0%	1%	4%	14%	22%
	Billion Euro	€102	€107	€113	€127	€134

Private Debt Lenders		2016	2017	2018	2019	2020 Q2
Foreign Loans	Debt to GDP	11.2%	12.3%	13.8%	14.3%	17.1%
	5 year % change	19%	26%	25%	43%	62%
	Billion Euro	€350	€401	€465	€493	€580
Other Financial Institutions	Debt to GDP	6.9%	7.0%	7.6%	7.6%	8.0%
	5 year % change	12%	12%	14%	28%	36%
	Billion Euro	€216	€229	€256	€263	€269
Corporate Bonds	Debt to GDP	5.9%	6.5%	5.6%	6.2%	7.3%
	5 year % change	43%	35%	13%	20%	38%
	Billion Euro	€184	€211	€188	€214	€246

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

n/a: Data Not Available

Business Debt

Bank Loans by Industry		2016	2017	2018	2019	2020 Q2	
Real Estate	Debt to GDP	12.0%	12.0%	13.0%	13.0%	14.0%	⚠
	5 year % change	-7%	-7%	-1%	7%	15%	⚠
	Billion Euro	€386	€401	€434	€458	€476	
Manufacturing	Loans to GDP	4.0%	4.0%	4.0%	4.0%	5.0%	⚠
	5 year % change	-20%	-16%	-9%	1%	13%	⚠
	Billion Euro	€125	€131	€139	€147	€165	
Wholesale and Retail	Loans to GDP	4.0%	4.0%	4.0%	4.0%	4.0%	+
	5 year % change	-11%	-11%	-6%	-3%	-1%	+
	Billion Euro	€128	€133	€139	€142	€138	
Information Technology	Loans to GDP	3.0%	3.0%	3.0%	4.0%	4.0%	⚠
	5 year % change	0%	1%	4%	14%	22%	⚠
	Billion Euro	€102	€107	€113	€127	€134	
Utilities	Loans to GDP	3.0%	3.0%	3.0%	3.0%	4.0%	+
	5 year % change	7%	2%	0%	1%	7%	+
	Billion Euro	€105	€113	€117	€119	€121	
Health Care	Loans to GDP	3.0%	2.0%	2.0%	2.0%	2.0%	+
	5 year % change	-12%	-15%	-14%	-8%	-8%	+
	Billion Euro	€78	€81	€82	€85	€80	
Construction	Loans to GDP	2.0%	2.0%	2.0%	2.0%	2.0%	⚠
	5 year % change	-10%	-5%	2%	9%	16%	⚠
	Billion Euro	€62	€67	€72	€77	€81	
Agriculture	Loans to GDP	2.0%	2.0%	2.0%	2.0%	2.0%	+
	5 year % change	2%	-5%	-3%	-4%	-1%	+
	Billion Euro	€51	€50	€53	€54	€55	
Transportation and Communication	Loans to GDP	2.0%	2.0%	2.0%	1.0%	2.0%	+
	5 year % change	-39%	-43%	-39%	-38%	-26%	+
	Billion Euro	€57	€52	€51	€50	€57	
Hotels and Restaurants	Loans to GDP	1.0%	1.0%	1.0%	1.0%	1.0%	⚠
	5 year % change	-8%	-7%	-3%	3%	13%	⚠
	Billion Euro	€23	€24	€25	€26	€28	
Other Services	Loans to GDP	2.0%	2.0%	2.0%	2.0%	1.0%	+
	5 year % change	-22%	-22%	-19%	-13%	-24%	+
	Billion Euro	€54	€55	€55	€56	€48	

* Real Estate industry includes all debt

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

n/a: Data Not Available

Business Debt

Debt by Industry		2016	2017	2018	2019	2020 Q2	
Commercial Real Estate	Debt to GDP	14.0%	14.0%	15.0%	16.0%	16.0%	⚠
	5 year % change	-8%	-7%	0%	8%	15%	⚠
	Billion Euro	€449	€469	€506	€536	€557	
Consumer Discretionary	Debt to GDP	13.2%	12.9%	14.2%	15.2%	15.9%	
	5 year % change	31%	16%	29%	31%	30%	⚠
	Billion euro	€412	€421	€478	€524	€537	
	Default Rate	n/a	n/a	n/a	n/a	n/a	
Industrials	Debt to GDP	3.8%	3.6%	4.0%	3.9%	4.6%	
	5 year % change	25%	13%	28%	25%	39%	⚠
	Billion euro	€117	€118	€134	€135	€154	
Communication Services	Debt to GDP	2.7%	2.4%	2.5%	3.2%	5.0%	
	5 year % change	17%	11%	9%	34%	100%	⚠
	Billion euro	€83	€77	€84	€111	€170	
Health Care	Debt to GDP	2.4%	2.1%	2.8%	3.0%	3.3%	
	5 year % change	57%	44%	90%	31%	35%	⚠
	Billion euro	€77	€69	€93	€105	€112	
Utilities	Debt to GDP	1.8%	1.6%	1.0%	1.7%	1.8%	
	5 year % change	-27%	-31%	-59%	-29%	-21%	+
	Billion euro	€58	€51	€34	€58	€62	
Materials	Debt to GDP	1.8%	1.8%	1.8%	1.7%	1.8%	
	5 year % change	10%	-2%	-7%	-3%	5%	+
	Billion euro	€58	€59	€59	€60	€61	
Information Technology	Debt to GDP	0.5%	0.4%	0.5%	0.6%	0.8%	
	5 year % change	80%	29%	85%	16%	49%	⚠
	Billion euro	€15	€13	€18	€21	€26	
Consumer Staples	Debt to GDP	0.4%	0.4%	0.4%	0.4%	0.5%	
	5 year % change	22%	37%	51%	-22%	6%	⚠
	Billion euro	€13	€14	€14	€13	€17	
Energy	Debt to GDP	0.1%	0.1%	0.1%	0.1%	0.1%	
	5 year % change	504%	11%	2%	-2%	-13%	+
	Billion euro	€4	€4	€4	€4	€4	
Memo: Automobiles and Components	Debt to GDP	12.5%	12.4%	13.7%	14.6%	15.1%	
	5 year % change	35%	20%	34%	34%	32%	⚠
	Billion euro	€392	€406	€461	€505	€509	
	Default Rate	n/a	n/a	n/a	n/a	n/a	

* Sector aggregates are based on limited data availability

Household Debt

Household Debt, by Type		2016	2017	2018	2019	2020 Q2	
Mortgage Debt	Debt to GDP	36.0%	36.0%	37.0%	38.0%	40.0%	
	5 year % change	-1%	-1%	1%	5%	11%	+
	Billion Euro	€1,126	€1,175	€1,231	€1,301	€1,336	
Consumer Credit	Debt to GDP	5.9%	5.9%	5.8%	5.8%	5.9%	
	5 year % change	-15%	-11%	-7%	-1%	0%	+
Other	Debt to GDP	11.5%	11.1%	10.9%	10.8%	10.9%	
	5 year % change	-17%	-18%	-17%	-13%	-16%	+
	Billion Euro	€361	€362	€366	€373	€369	

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Private Debt by Lender/Holder

Private Debt Lenders		2016	2017	2018	2019	2020 Q2	
Commercial and Savings Banks	Debt to GDP	46.0%	46.0%	48.0%	49.0%	52.0%	⚠
	5 year % change	-5%	-3%	5%	9%	14%	⚠
	Billion Euro	€1,437	€1,512	€1,617	€1,700	€1,749	⚠
Mortgage and Land Banks	Debt to GDP	13.9%	13.4%	12.4%	12.5%	13.1%	+
	5 year % change	-32%	-29%	-26%	-20%	-14%	+
	Billion Euro	€433	€436	€416	€433	€443	+
Credit Institutions	Debt to GDP	16.5%	16.7%	17.2%	17.7%	18.6%	+
	5 year % change	1%	0%	2%	5%	9%	+
	Billion Euro	€517	€546	€577	€611	€628	+
Foreign Loans	Debt to GDP	11.2%	12.3%	13.8%	14.3%	17.1%	⚠
	5 year % change	19%	26%	25%	43%	62%	⚠
	Billion Euro	€350	€401	€465	€493	€580	⚠
Other Financial Institutions	Debt to GDP	6.9%	7.0%	7.6%	7.6%	8.0%	⚠
	5 year % change	12%	12%	14%	28%	36%	⚠
	Billion Euro	€216	€229	€256	€263	€269	⚠
Corporate Bonds	Debt to GDP	5.9%	6.5%	5.6%	6.2%	7.3%	⚠
	5 year % change	43%	35%	13%	20%	38%	⚠
	Billion Euro	€184	€211	€188	€214	€246	⚠

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Portfolio Loans & Investment (Total Economy) - Germany into Foreign Countries

Debt Security Investment		2015	2016	2017	2018	2019	
Germany Holdings of Foreign Debt Securities	to GDP	58.0%	57.0%	61.0%	55.0%	60.0%	
	5 year % change	9%	23%	7%	-6%	9%	+
	Billion Euro	€1,761	€1,779	€1,975	€1,823	€2,066	
France	to GDP	8.0%	8.0%	9.0%	8.0%	9.0%	+
	5 year % change	21%	18%	-2%	-10%	6%	+
	Billion Euro	€255	€252	€285	€266	€307	
United States	to GDP	6.0%	7.0%	7.0%	6.0%	7.0%	!
	5 year % change	34%	79%	72%	40%	52%	!
	Billion Euro	€184	€213	€232	€202	€238	
Netherlands	to GDP	6.0%	6.0%	6.0%	6.0%	7.0%	+
	5 year % change	-5%	0%	-10%	-11%	11%	+
	Billion Euro	€182	€185	€204	€202	€230	
Equity and Investment Fund Shares		2015	2016	2017	2018	2019	
Germany Holdings of Foreign Equity and Investment Fund Shares	to GDP	28.0%	29.0%	35.0%	29.0%	37.0%	!
	5 year % change	30%	68%	66%	18%	55%	!
	Billion Euro	€858	€912	€1,140	€970	€1,288	
Luxembourg	to GDP	13.0%	13.0%	16.0%	13.0%	16.0%	!
	5 year % change	14%	47%	47%	12%	40%	!
	Billion Euro	€394	€415	€510	€433	€538	
United States	to GDP	3.0%	4.0%	4.0%	4.0%	5.0%	!
	5 year % change	106%	130%	105%	38%	76%	!
	Billion Euro	€105	€116	€138	€126	€181	
Ireland	to GDP	2.0%	2.0%	3.0%	3.0%	4.0%	!
	5 year % change	157%	211%	177%	100%	162%	!
	Billion Euro	€60	€72	€97	€94	€143	
Loans		2015	2016	2017	2018	2019	
Germany Holding of Foreign Loans	to GDP	33.7%	33.2%	32.8%	33.4%	34.1%	+
	5 year % change	0%	1%	-3%	1%	4%	+
	Billion Euro	€1,020	€1,041	€1,065	€1,116	€1,170	
Germany Holding of Foreign Loans: Short Term	to GDP	12.5%	11.8%	11.8%	11.7%	12.7%	+
	5 year % change	0%	-1%	-1%	-1%	4%	+
	Billion Euro	€379	€371	€383	€392	€437	
Germany Holding of Foreign Loans: Long Term	to GDP	21.2%	21.4%	21.0%	21.6%	21.3%	+
	5 year % change	0%	2%	-4%	2%	3%	+
	Billion Euro	€641	€671	€682	€724	€733	

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

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

n/a: Data Not Available

Portfolio Loans & Investment (Total Economy) - Foreign Countries into Germany

Debt Security Investment		2015	2016	2017	2018	2019	
Foreign Holdings of Germany's Debt Securities	to GDP	60.0%	54.0%	53.0%	47.0%	49.0%	
	5 year % change	-9%	-8%	-20%	-21%	-10%	+
	Billion Euro	€1,804	€1,703	€1,728	€1,580	€1,687	
Netherlands	to GDP	6.0%	6.0%	6.0%	5.0%	5.0%	+
	5 year % change	20%	0%	-17%	-18%	-14%	+
	Billion Euro	€187	€176	€186	€171	€180	
Luxembourg	to GDP	5.0%	4.0%	5.0%	4.0%	5.0%	+
	5 year % change	-25%	-28%	-24%	-19%	10%	+
	Billion Euro	€141	€131	€148	€147	€171	
France	to GDP	4.0%	4.0%	3.0%	3.0%	3.0%	+
	5 year % change	-46%	-33%	-35%	-30%	-18%	+
	Billion Euro	€124	€112	€101	€92	€111	
Equity and Investment Fund Shares		2015	2016	2017	2018	2019	
Foreign Holdings of Germany's Equity and Investment Fund Shares	to GDP	29.0%	28.0%	34.0%	25.0%	30.0%	
	5 year % change	35%	79%	59%	-1%	31%	!
	Billion Euro	€875	€883	€1,100	€845	€1,039	
United States	to GDP	8.0%	8.0%	11.0%	8.0%	10.0%	!
	5 year % change	38%	82%	69%	-4%	41%	!
	Billion Euro	€255	€265	€354	€259	€341	
Luxembourg	to GDP	5.0%	5.0%	5.0%	4.0%	5.0%	!
	5 year % change	21%	53%	57%	15%	45%	!
	Billion Euro	€147	€143	€177	€150	€175	
France	to GDP	3.0%	3.0%	3.0%	2.0%	2.0%	!
	5 year % change	6%	44%	21%	-24%	0%	!
	Billion Euro	€84	€80	€95	€66	€79	

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

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Derivative Activity

OTC Derivative Activity by Contract Type		2015	2016	2017	2018	2019	
Interest Rate	to GDP	928.0%	965.0%	1160.0%	990.0%	964.0%	
	5 Year % Change	-49%	-47%	-26%	-34%	-25%	+
	Billion Euro	28,101	30,198	37,683	33,160	33,167	
Foreign Exchange	to GDP	169.0%	141.0%	138.0%	134.0%	134.0%	
	5 Year % Change	-14%	-29%	-27%	-20%	-26%	+
	Billion Euro	5,122	4,419	4,496	4,496	4,607	
Credit Derivatives	to GDP	44.0%	44.0%	49.0%	22.0%	19.0%	
	5 Year % Change	-56%	-55%	-28%	-64%	-61%	+
	Billion Euro	1,327	1,362	1,577	735	642	
Index and Stock-related	to GDP	17.0%	16.0%	14.0%	12.0%	5.0%	
	5 Year % Change	-34%	-28%	-33%	-34%	-70%	+
	Billion Euro	526	506	450	386	186	
Commodity contracts	to GDP	1.0%	1.0%	1.0%	1.0%	1.0%	
	5 Year % Change	-87%	-89%	-88%	-83%	-48%	+
	Billion Euro	31	29	19	22	26	
Total Notional	to GDP	1160.0%	1167.0%	1361.0%	1159.0%	1123.0%	
	5 Year % Change	-46%	-46%	-26%	-34%	-27%	+
	Billion Euro	35,107	36,514	44,225	38,799	38,628	

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n/a: Data Not Available

Largest Individual Lenders

Individual Lenders		2016	2017	2018	2019	2020 Q2	
Deutsche Bank	Loans to GDP	13.2%	12.4%	12%	12.6%	n/a	
	5 year % change	-15%	-15%	-11%	-10%	n/a	+
	Billion Euro	€414	€406	€405	€434	n/a	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	
KfW (State-Owned)	Loans to GDP	4.4%	3.9%	3.8%	3.7%	n/a	
	5 year % change	-1%	-9%	-8%	-8%	n/a	+
	Billion Euro	€137	€128	€127	€129	n/a	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	
DZ Bank	Loans to GDP	6.2%	5.9%	5.7%	5.9%	6.2%	
	5 year % change	20%	22%	16%	23%	27%	⚠
	Billion Euro	€195	€192	€192	€204	€208	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	
Commerzbank	Loans to GDP	7.2%	7.4%	7.4%	7.6%	8%	
	5 year % change	-36%	-29%	-18%	-7%	4%	+
	Billion Euro	€226	€242	€249	€261	€274	
	Charge-off Rate	n/a	n/a	n/a	n/a	n/a	

⚠ High Concern
⚠ Concern
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n/a: Data Not Available

Real Estate

Total Debt		2016	2017	2018	2019	2020 Q2
Mortgage Debt	Debt to GDP	36.0%	36.0%	37.0%	38.0%	40.0%
	5 year % change	-1%	-1%	1%	5%	11%
	Billion Euro	€1,126	€1,175	€1,231	€1,301	€1,336



Quarterly Residential Housing Summary		Mar-2019	Jun-2019	Sep-2019	Dec-2019	Mar-2020	Jun-2020
Total Housing Units Approved for Construction	Volume	40,101	45,071	47,400	44,108	40,959	47,569
	Annual Change	1.5%	-2.4%	1.6%	7.0%	2.1%	5.5%
Total Housing Units Construction Started	Volume	5,092	5,517	5,700	5,648	5,749	6,046
	Annual Change	12.1%	2.9%	5.9%	10.6%	12.9%	9.6%
Residential Property Price Index	Index (2015=100)	124.6	127.8	129.6	132.7	133.1	136.2
	Annual Change	5.3%	6.0%	5.3%	6.5%	6.8%	6.6%

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n/a: Data Not Available

Additional Data








Public Debt		2016	2017	2018	2019	2020 Q2
Total General Government Debt	Debt to GDP	69.0%	65.0%	62.0%	60.0%	73.0%
	5 Year % Change	-13%	-20%	-21%	-21%	0%
	Billion Euro	€2,172	€2,122	€2,074	€2,057	€2,278
Total Federal Government Debt	Debt to GDP	44.0%	41.0%	39.0%	38.0%	47.0%
	5 Year % Change	-13%	-18%	-20%	-21%	3%
	Billion Euro	€1,365	€1,350	€1,323	€1,299	€1,473
Total State and Local Government Debt	Debt to GDP	26.0%	24.0%	23.0%	22.0%	26.0%
	5 Year % Change	-14%	-22%	-23%	-21%	-4%
	Billion Euro	€819	€789	€767	€774	€818

Supplementary Data		2016	2017	2018	2019	2020 Q2
Nominal GDP	Billion Euro	€3,129	€3,263	€3,361	€3,455	€3,380
	Annual % Change	3.5%	4.3%	3.0%	2.8%	-1.6%
Real GDP	Billion 2015 Euros	€3,088	€3,177	€3,219	€3,238	€3,129
	Annual % Change	2.1%	2.9%	1.3%	0.6%	-3.1%
Consumer Price Index (Inflation)	CPI (2015=100)	101.20	102.70	104.40	106.00	106.90
	Inflation Rate	1.6%	1.5%	1.7%	1.5%	0.8%
Unemployment	Person (Thousands)	2,628	2,439	2,260	2,278	2,941
	Unemployment Rate	5.9%	5.5%	5.0%	5.0%	6.4%
Current Account Balance	Billion Euros	€267	€254	€247	€244	€228
	to GDP	8.5%	7.8%	7.4%	7.1%	6.7%

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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

n/a: Data Not Available

Sources

Page One

- Bank for International Settlement (BIS). "Credit to the Non-Financial Sector." <https://www.bis.org/statistics/totcredit.htm>.
- Deutsche Bundesbank. "Table DE.KB003: Loans: Monetary Financial Institutions: by Sectors." Retrieved from CEIC Data.
- Deutsche Bundesbank. "Table DE.KB015: Loans: Foreign Banks: by Sectors." Retrieved from CEIC Data.

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- Deutsche Bundesbank. "Table DE.KB003: Loans: Monetary Financial Institutions: by Sectors." Retrieved from CEIC Data.

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- Deutsche Bundesbank. "Table DE.KB003: Loans: Monetary Financial Institutions: by Sectors." Retrieved from CEIC Data.
- S&P Capital IQ. "Market Intelligence." <https://www.capitaliq.com/>.

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- Eurostat. "QSA - Quarterly Sector Accounts (MUFA and NFA Eurostat ESA2010 TP, Table 801." https://sdw.ecb.europa.eu/browseExplanation.do?org.apache.struts.taglib.html.TOKEN=da88e531941eadeccb85d1bf70f24a1a&df=true&ec=&dc=&oc=&pb=&rc=&DATASET=0&removeItem=&removedItemList=&mergeFilter=&activeTab=QSA&showHide=&MAX_DOWNLOAD_SERIES=500&SERIES_MAX_NUM=50&node=bbn6091&legendPub=published.
- Deutsche Bundesbank. "Table DE.KB004: Loans: Commercial Banks: by Sectors." Retrieved from CEIC Data.
- Deutsche Bundesbank. "Table DE.KB009: Loans: Savings Banks: by Sectors." Retrieved from CEIC Data.
- Deutsche Bundesbank. "Table DE.KB008: Loans: Land Banks: by Sectors." Retrieved from CEIC Data.
- Deutsche Bundesbank. "Table DE.KB012: Loans: Mortgage Banks: by Sectors." Retrieved from CEIC Data.
- Deutsche Bundesbank. "Table DE.KB013: Loans: Building and Loan Associations: by Sectors." Retrieved from CEIC Data.

Page Five

- International Monetary Fund (IMF). "Table 1: Reported Portfolio Investment Assets by Economy of Nonresident Issuer." <https://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363&slid=1424963554286>.
- Deutsche Bundesbank. "Table DE.AB019: ESA 2010: Funds by Sector: Rest of the World: Stock." Retrieved from CEIC Data.

Page Six

- International Monetary Fund (IMF). "Table 8" Derived Portfolio Investment Liabilities (All Economies) by Economy of Nonresident Holder: (Derived from Creditor Data)." <https://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363&slid=1424963554286>.

Page Seven

- Deutsche Bundesbank. "OTC Derivatives: Nominal and Market Values of Contracts Outstanding with Leading Banks: of which: Contracts Reported by German Banks." https://www.bundesbank.de/dynamic/action/en/statistics/time-series-databases/time-series-databases/759784/759784?listId=www_s120_bh5_2n.

Page Eight

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

Page Nine

- Deutsche Bundesbank. "Table DE.KB003: Loans: Monetary Financial Institutions: by Sectors." Retrieved from CEIC Data.
- Federal Statistics Office Germany. "Table DE.EB001: House Price Index: 2015=100." Retrieved from CEIC Data.
- Federal Statistics Office Germany. "Table DE.EA001: Building Permits Granted." Retrieved from CEIC Data.
- Federal Statistics Office Germany. "Table DE.EA041: Construction Started: New Building." Retrieved from CEIC Data.

Page Ten

- International Monetary Fund (IMF). "International Financial Statistics (IFS): Prices, Production, and Labor." <https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b&slid=1409151240976>.
- Deutsche Bundesbank. "Table DE.F001: Government Debt: Maastricht Treaty: ESA 2010." Retrieved from CEIC Data.
- Federal Labor Agency. "Table DE.G017: Registered Unemployment: Seasonally Adjusted." Retrieved from CEIC Data.
- Federal Labor Agency. "Table DE.G021: Registered Unemployment Rate: Seasonally Adjusted." Retrieved from CEIC Data.