Karlsruher Institut für Technologie

Fakultät für Wirtschaftswissenschaften
Institut für Volkswirtschaftslehre (ECON)

Bachelor Thesis in Macroeconomics

„US commercial banks“

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(Topic 1)

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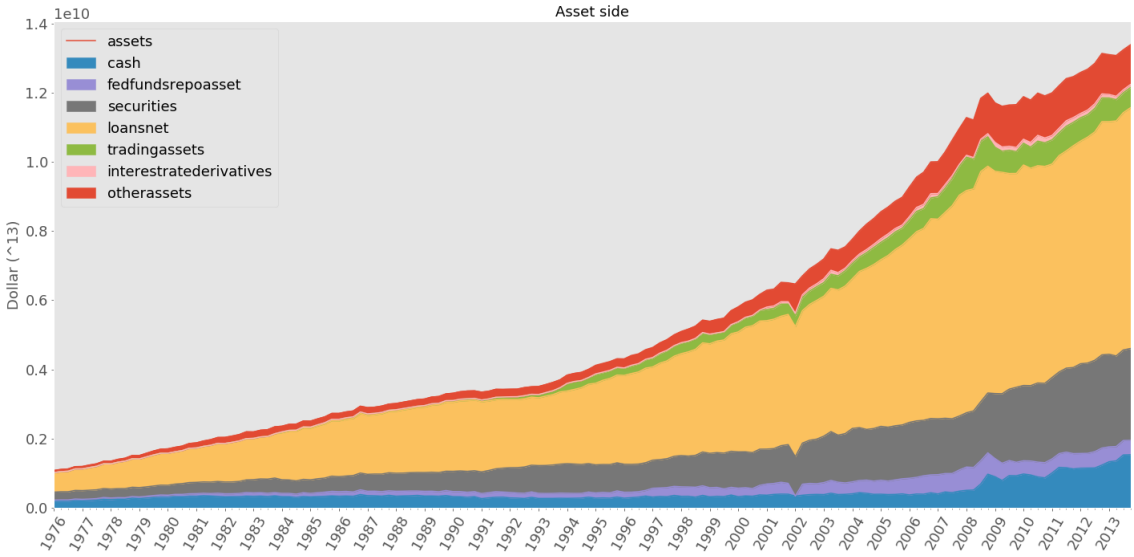
Figure 1: Asset side



Graph description: The graph shows the aggregates of the main variables from the asset side of the balance sheet over time.

Key Observations:

- loans make up the largest share of assets
- share of trading assets have risen
- loans and trading assets have risen more than securities
- drop in assets in 2002 and 2008

Figure 2: Share of asset positions

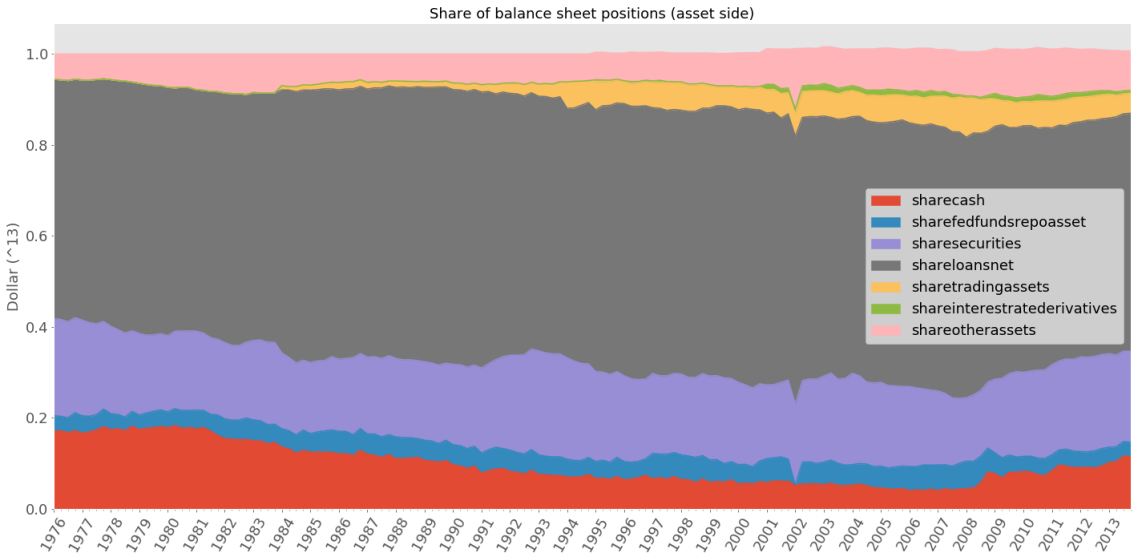
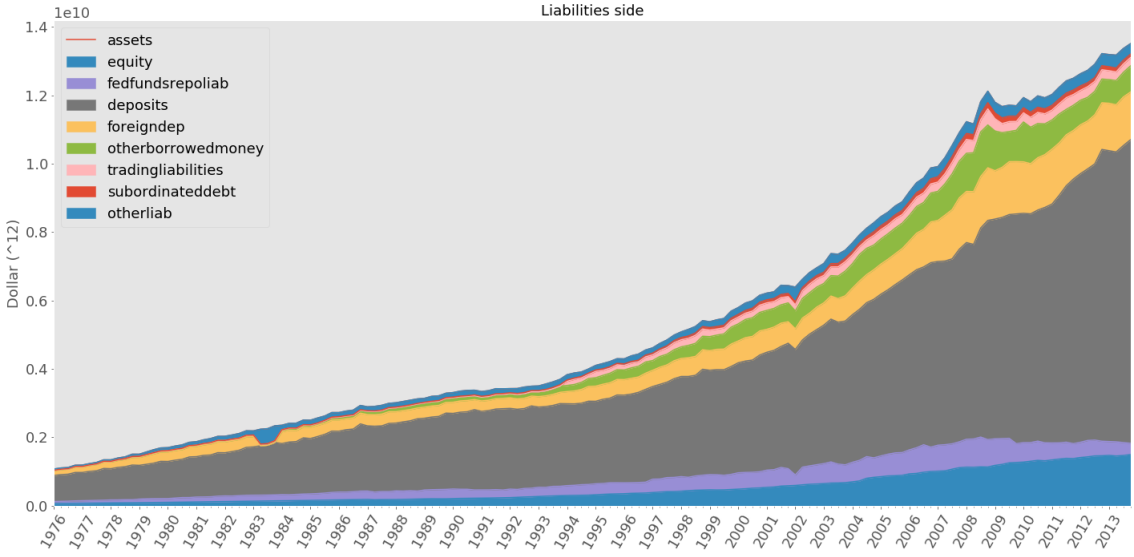


Figure 3: Liabilities side



Graph description: The graph shows the aggregates of the main variables from the liabilities side of the balance sheet over time.

Key Observations:

- deposits as main source of funding

Graph description: The graph shows an estimation of how many banks have defaulted at a certain time (year,quarter). It is based on the negative equity recorded by banks. Hence, it is not exact and some banks might continue to exist in case of mergers or bailouts. Also sometimes banks are double counted, if a negative equity does not immediately result in

Figure 4: Share of liabilities positions

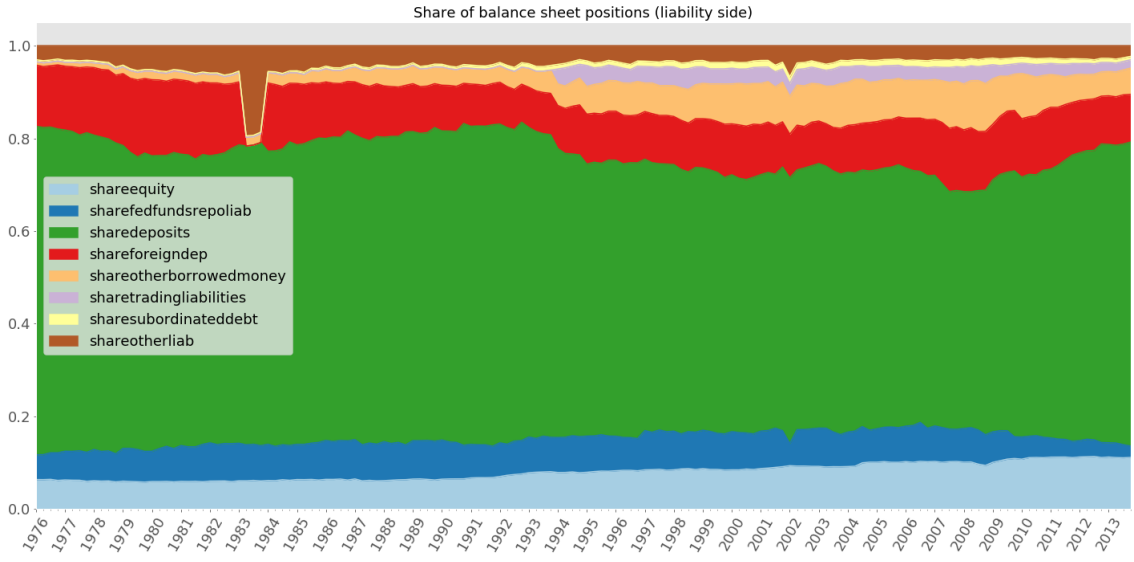


Figure 5: Growth of assets

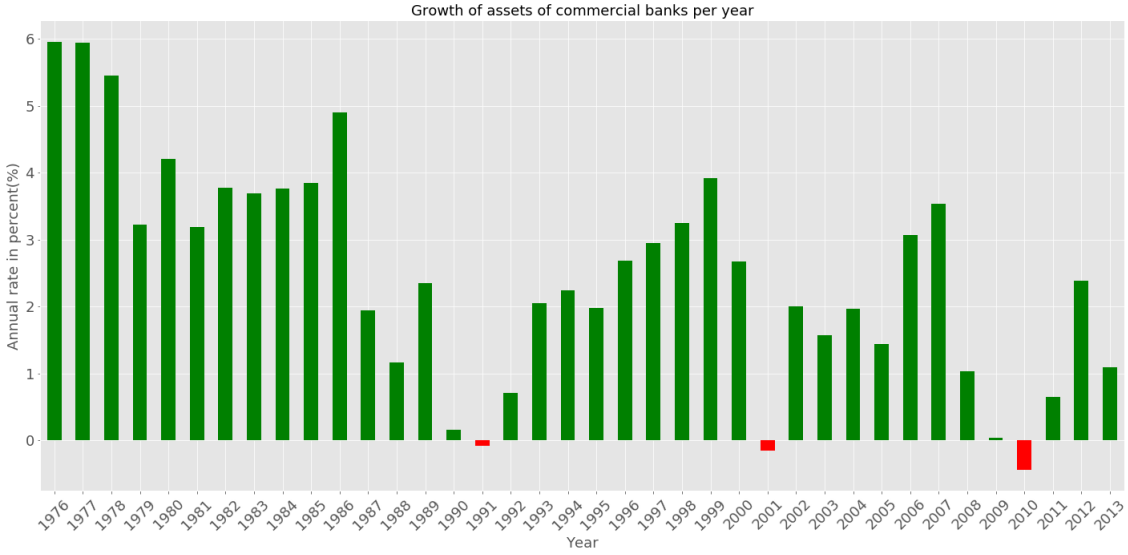


Figure 6: Growth of top 1 percent banks assets

Figure 7: Growth of all banks vs top 1 percent

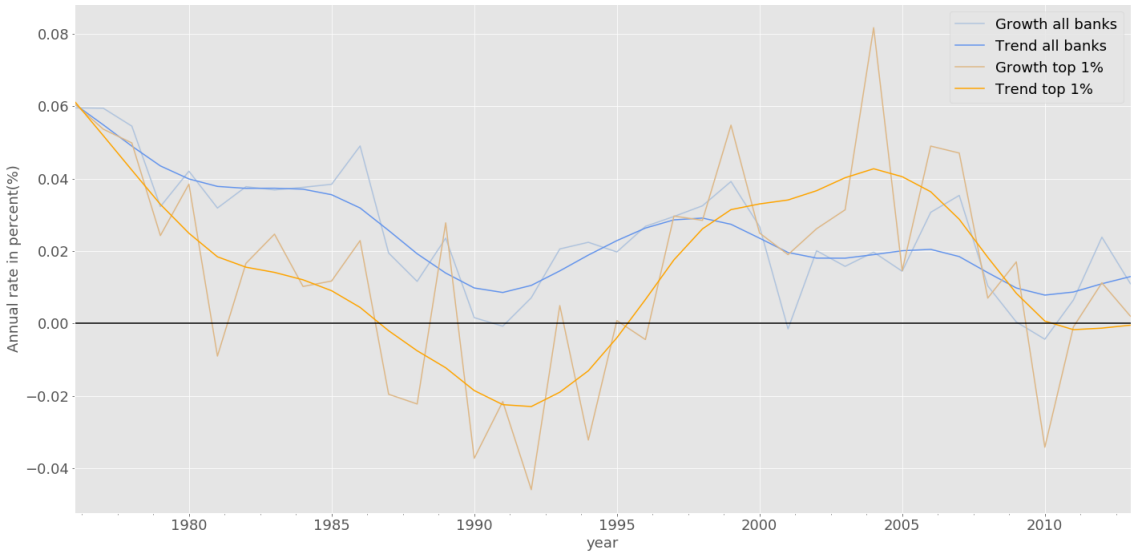
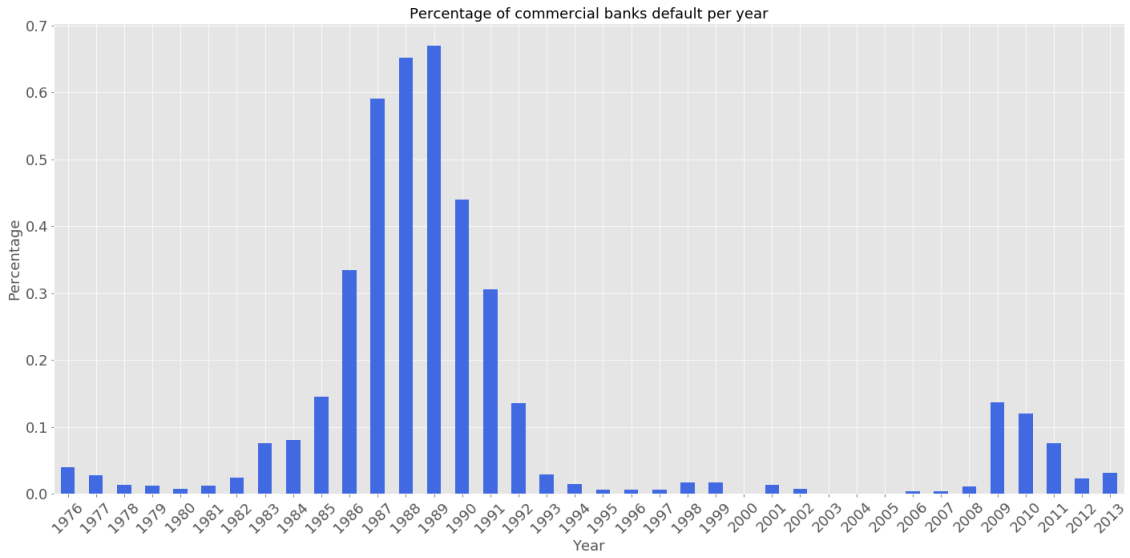


Figure 8: Banks default

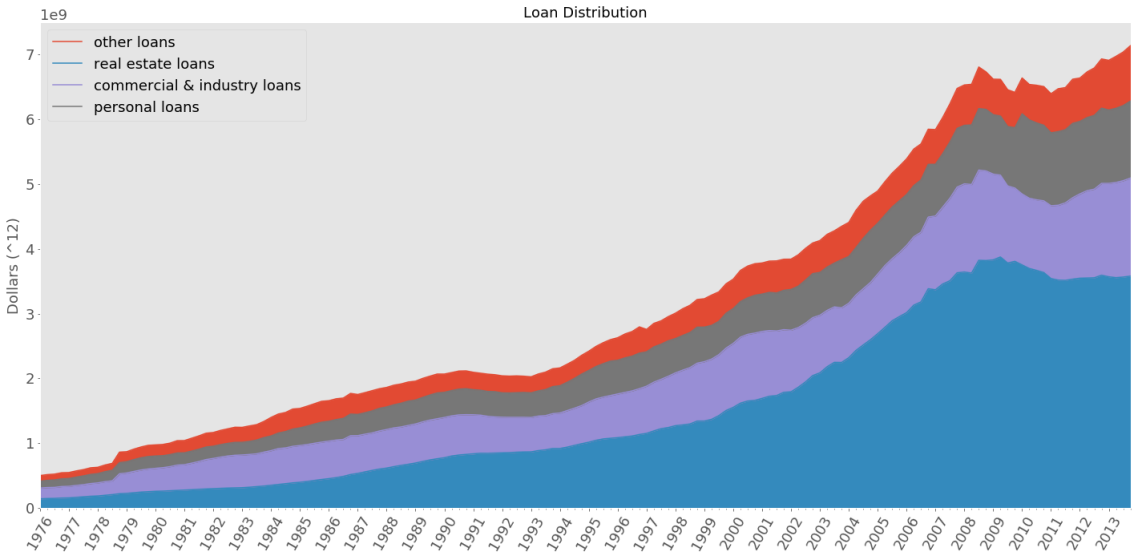


bankruptcy.

Key Observations:

- main defaults in years 1986-1991 and 2009-2011
- long stable period from 1991-2008
- In 1990 there were many more smaller banks. Smaller banks might have a higher likelihood to fail. In 1990: 74% small banks, 2010: 35% small banks

Figure 9: Loans



Graph description: It shows the share of loan types of total loans over time.

Key Observations:

- real estate loans has largest share

Figure 10: Loans by repricing maturity

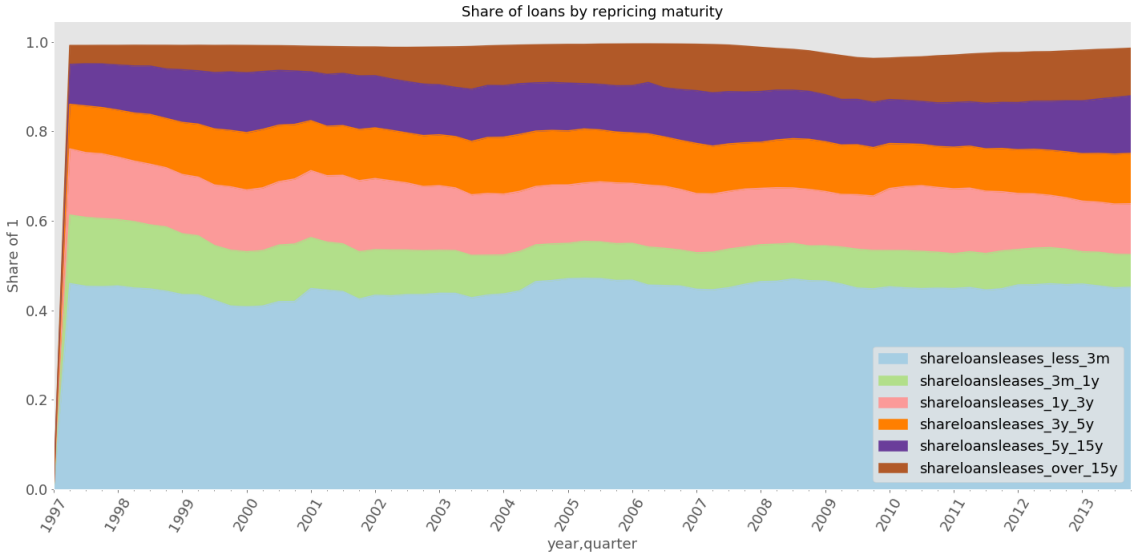
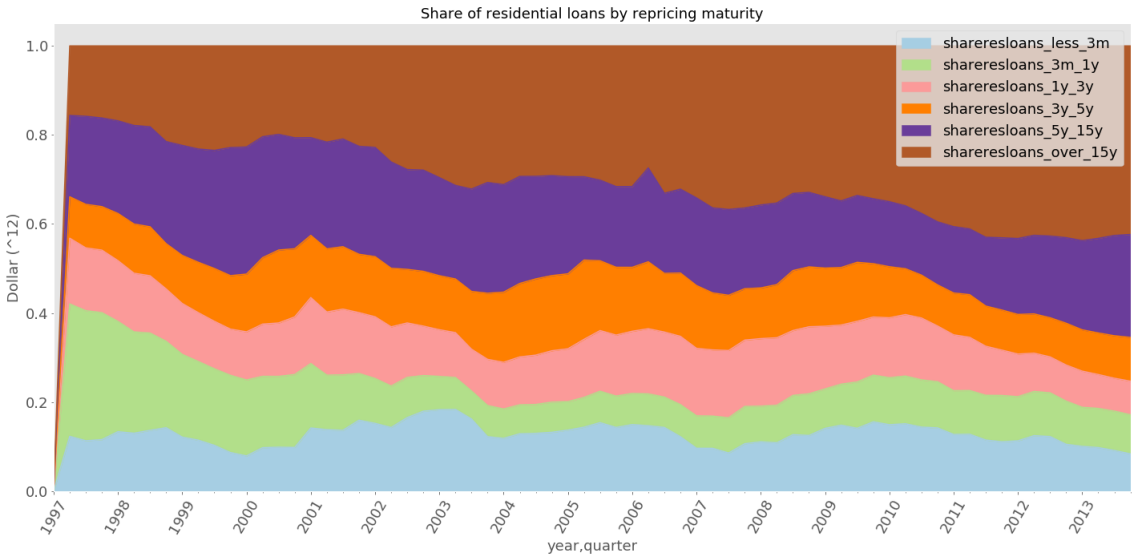


Figure 11: Residential Loans by repricing maturity



Banks by asset size

In Figure 12, we have in the left column the asset interval size and in the corresponding row the number of banks per year.

Typical small/medium/large bank

Figure 12: Aggregate assets by percentiles

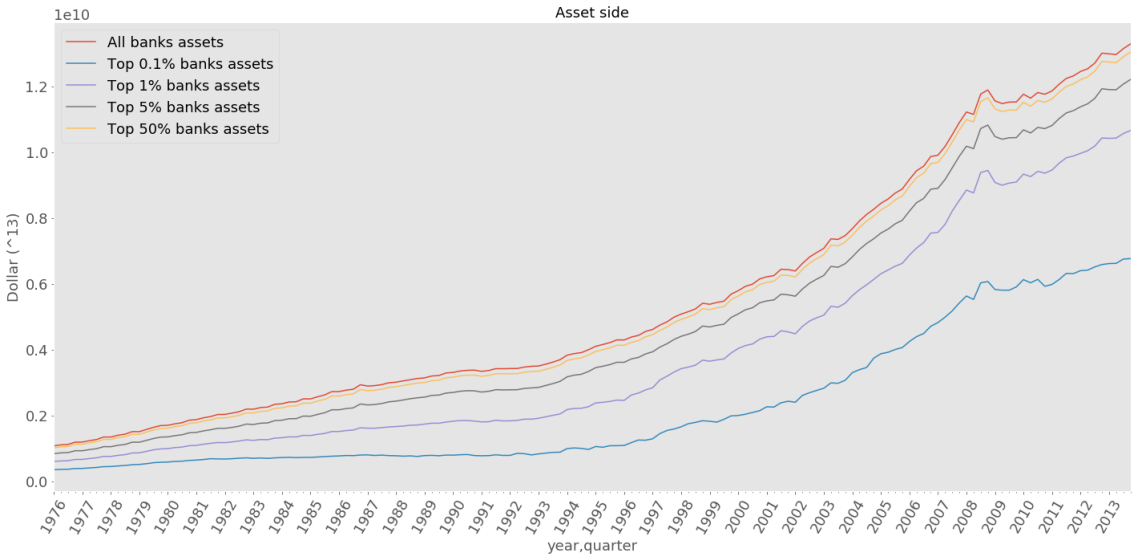


Figure 13: Top 10 banks assets vs rest

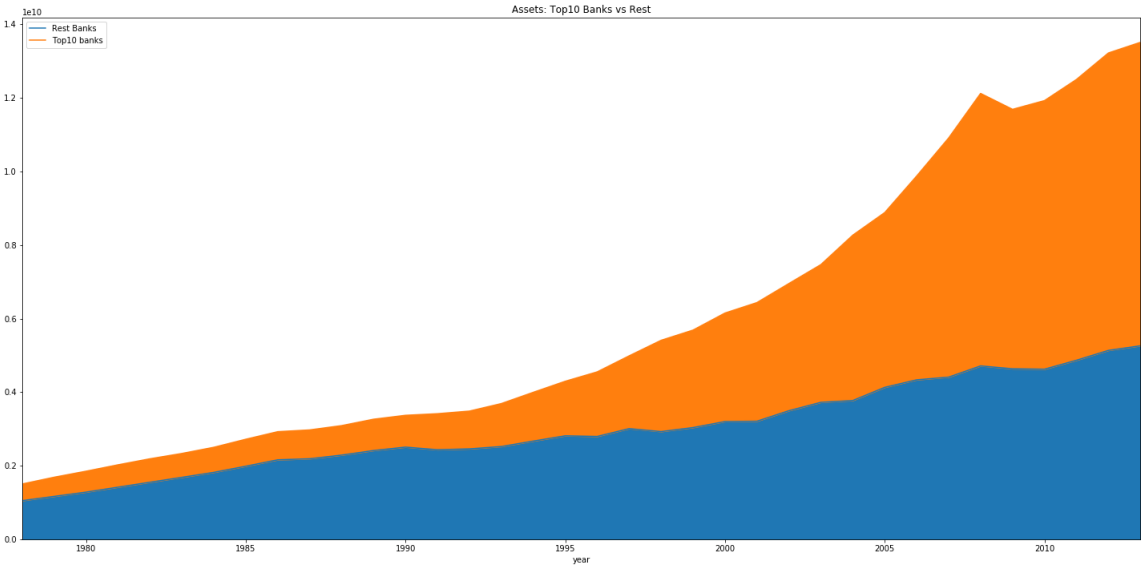


Figure 14: Rise of top 10 banks asset share

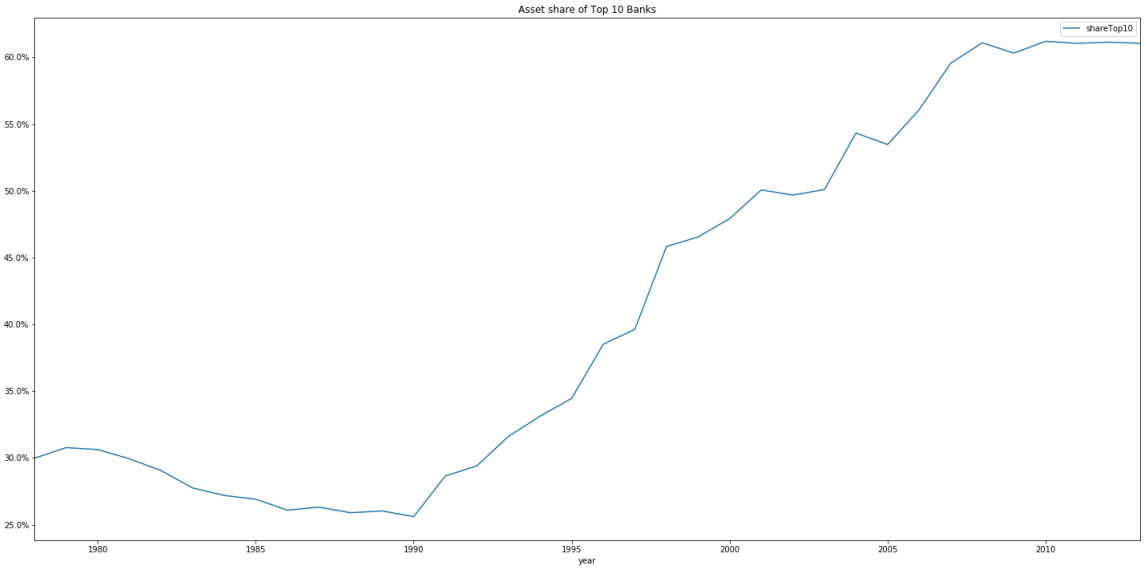


Figure 15: Banks count by asset size

	1980	1985	1990	1995	2000	2005	2010
(-0.001, 100000.0]	12717.0	11674.0	9145.0	6613.0	4810.0	3435.0	2313.0
(100000.0, 1000000.0]	1507.0	2287.0	2693.0	2843.0	3055.0	3562.0	3670.0
(1000000.0, 10000000.0]	174.0	287.0	325.0	342.0	307.0	381.0	413.0
(10000000.0, 10000000000.0]	18.0	27.0	49.0	75.0	80.0	80.0	83.0

Banks are assigned three different buckets (small/medium/large) depending on asset size.

Small bank: $0 < \text{assets} <= 10^5$
Medium bank: $10^5 < \text{assets} <= 10^6$
Large bank: $10^6 < \text{assets} < 10^6$

Figure 16: Asset size by bank

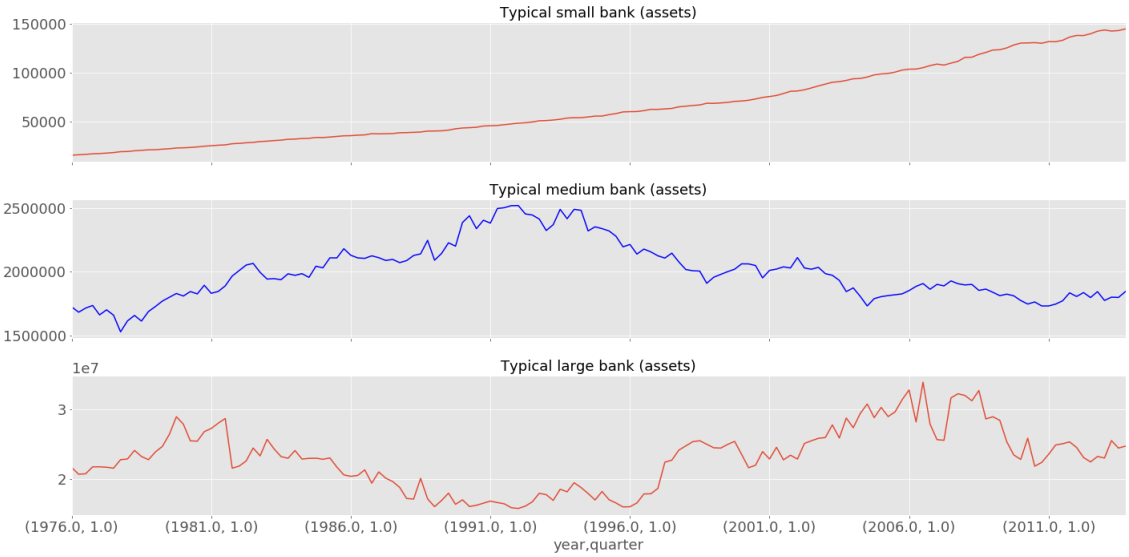


Figure 17: Medium vs large bank by asset size

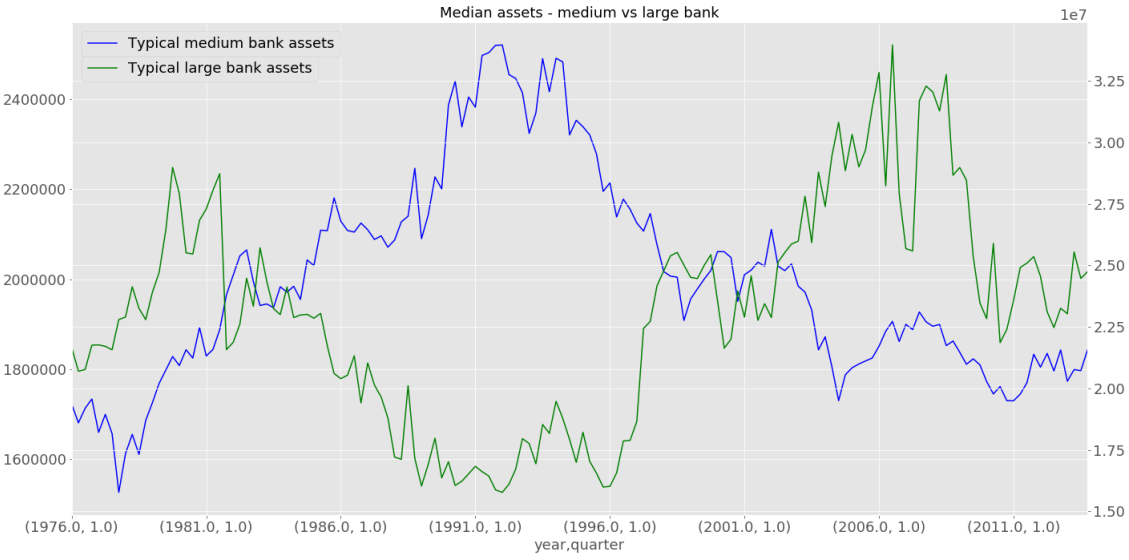


Figure 18: Small bank: liability side

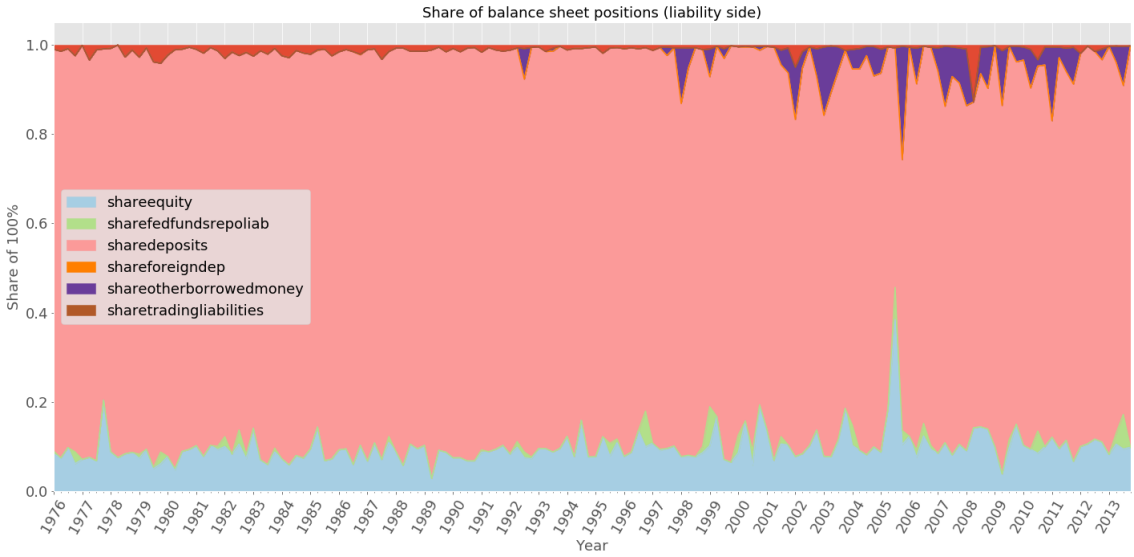


Figure 19: Medium bank: liability side

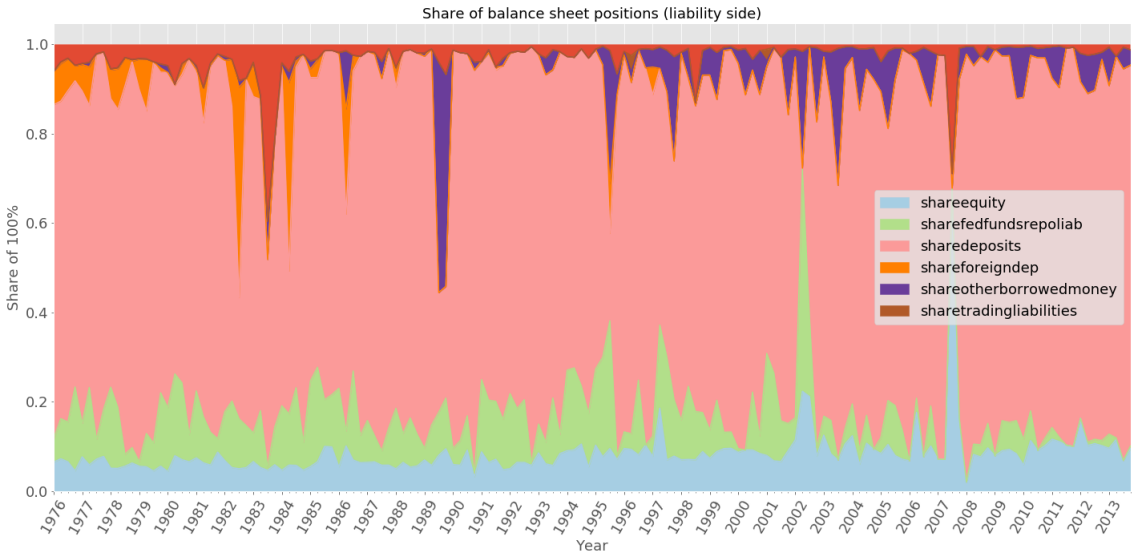
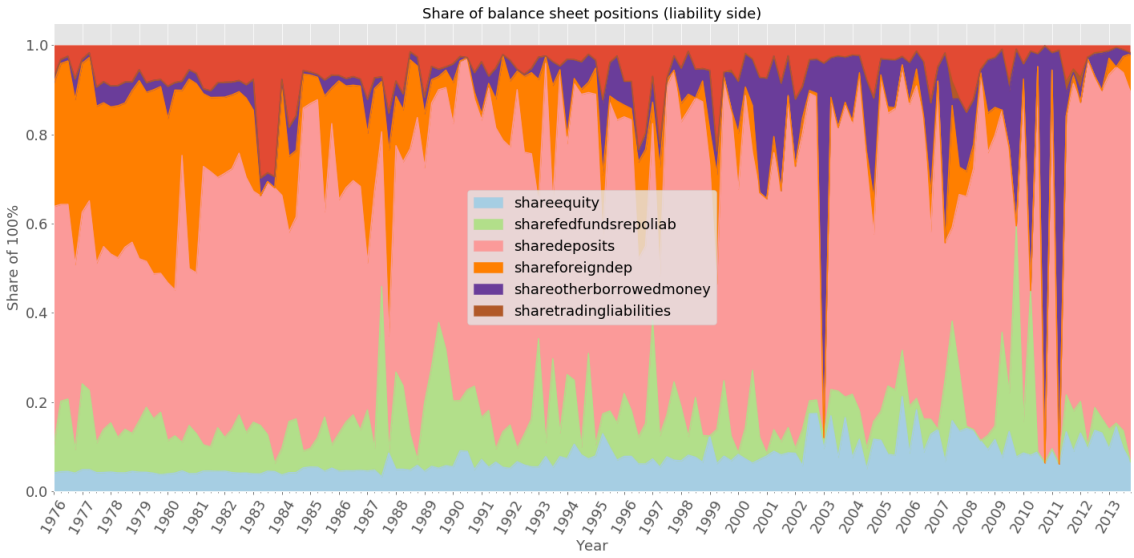


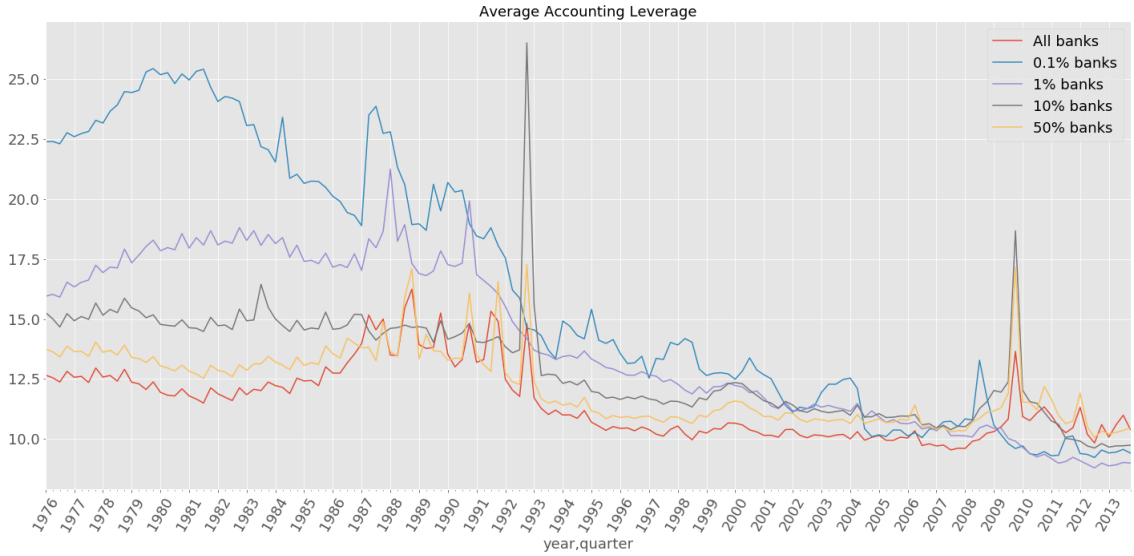
Figure 20: Large bank: liability side



2.2 Looking into leverage

Throughout the analysis the definition of accounting leverage (assets/equity) is used. Equity is calculated by total assets minus total liabilities. In addition, for risk analysis banks belonging a bank holding company were aggregated. Hence, the dataset which was used contained bhcs and independent banks.

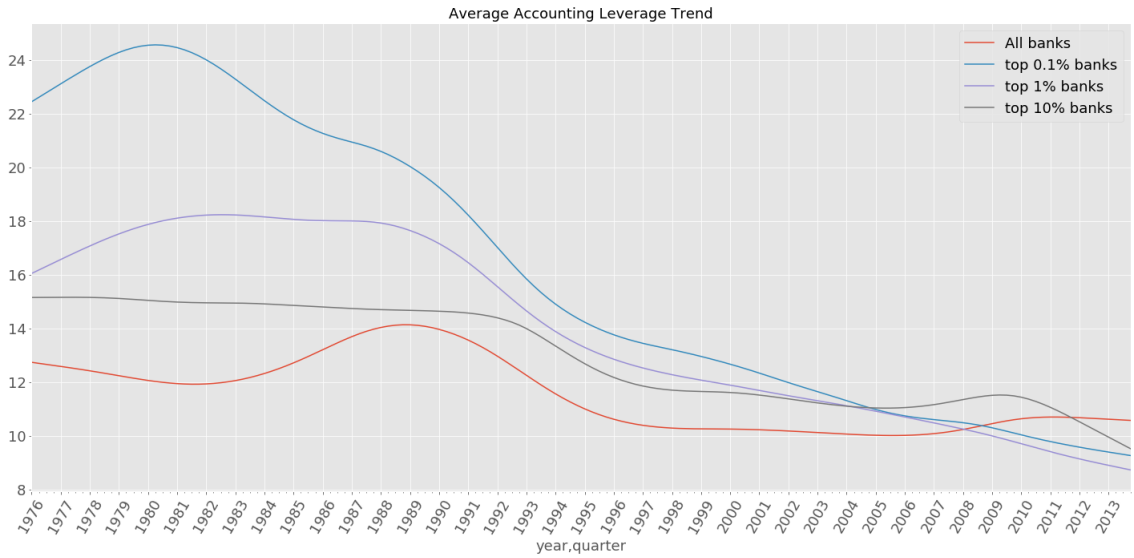
Figure 21: Average leverage over time (1976/1-2013/4)



Graph description: The graph shows the average leverage (assets/equity) for every year over all banks. Banks with equity or assets below zero are excluded.
Key Observations:

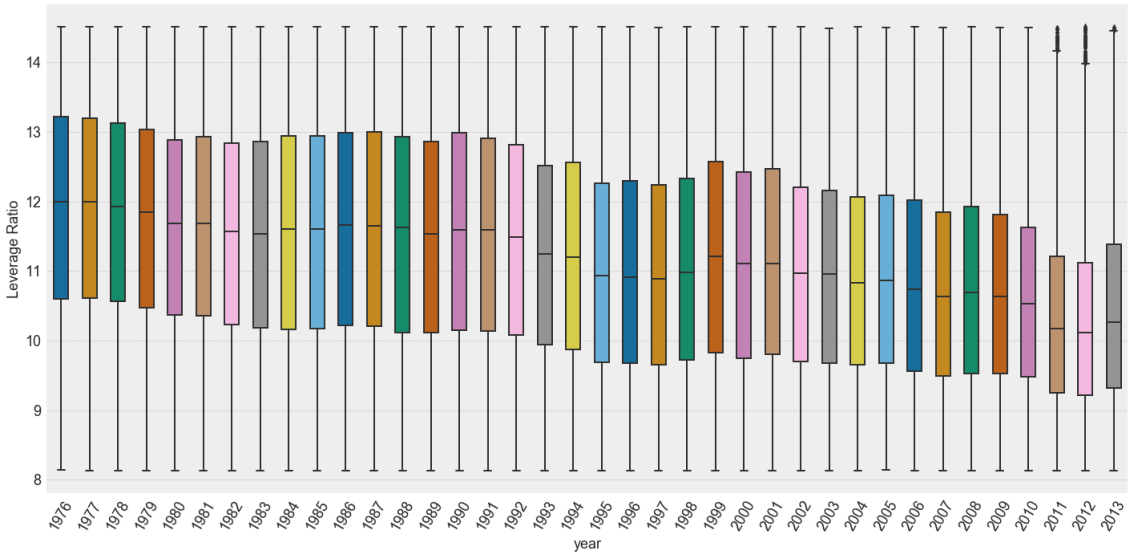
- Overall Leverage did fall over time

Figure 22: Average leverage trends over time (1976/1-2013/4)



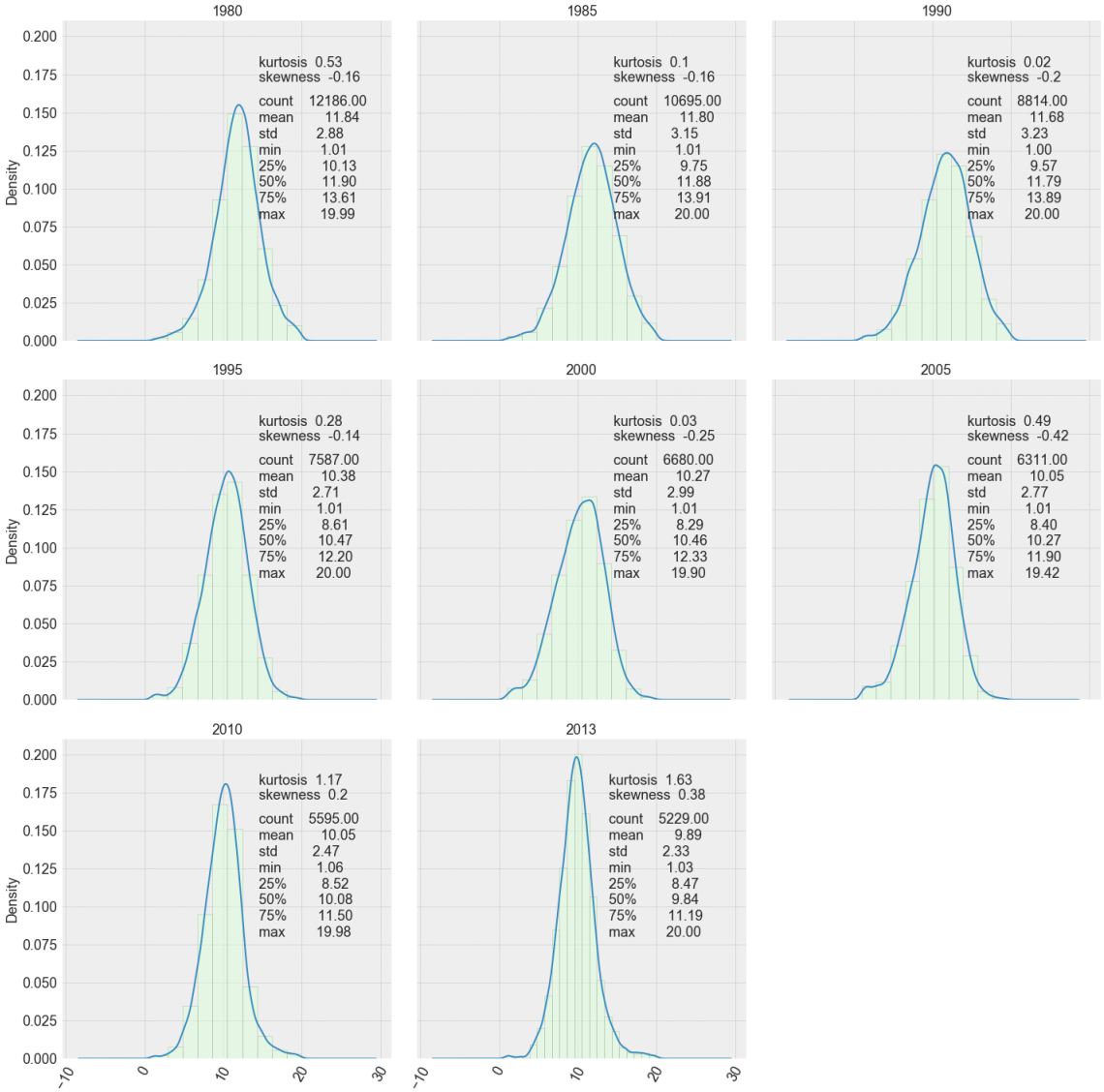
- Spike in leverage in year 2008/2009
- Leverage lowest in 2007
- Small spike in year 1999
- Introduction of Basel 1 in 1988 might have lead to continuously decrease in leverage

Figure 23: Boxplots (1976-2013)



A look into the distribution of leverage

Figure 24: Distribution 1980-2013

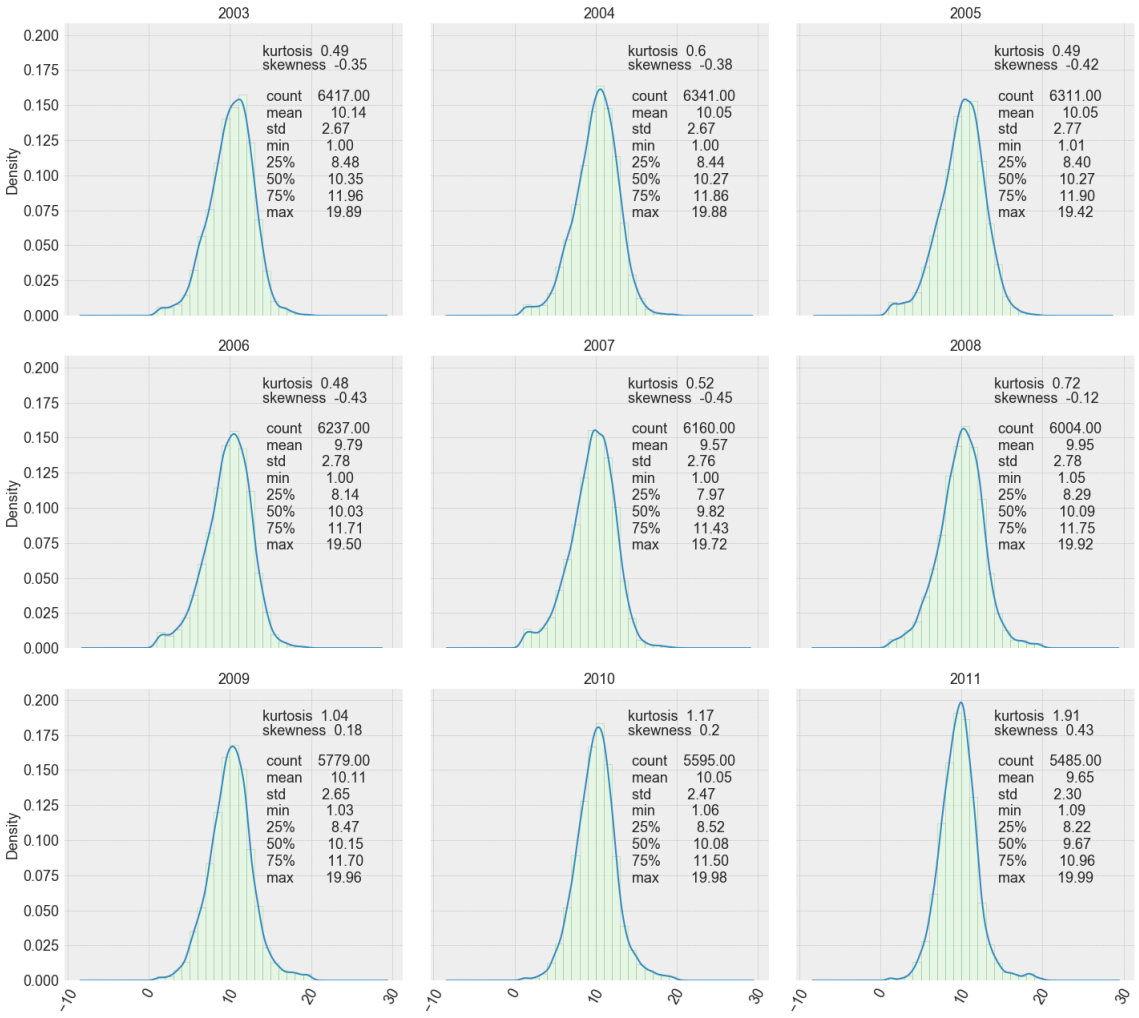


Graph description: Counts are normed to 1. Only leverage ratios between 0-20 are accounted for. The others are seen as outliers. Leverage ratios are always from quarter 4.

Key Observations:

- large standard deviation in year 2010 with 18.82
- less and higher bars in 2013 indicate higher homogeneity in 2013 compared to the years before.

Figure 25: Distribution in crisis 2003-2011



Graph description: Counts are normed to 1. Only leverage ratios between 0-20 are accounted for. The others are seen as outliers. Leverage ratios are always from quarter 4.

Key Observations:

- Increasing homogenity over time.

3 Conclusion