



Fakultät für Wirtschaftswissenschaften
Institut für Volkswirtschaftslehre (ECON)

Bachelor Thesis in Macroeconomics

„US commercial banks“

Winter semester 2019/20

Not yet defined

(Topic 1)

Alexander Schlechter
Matr.-Nr. 2054108
alexander.schlechter@student.kit.edu

Contents

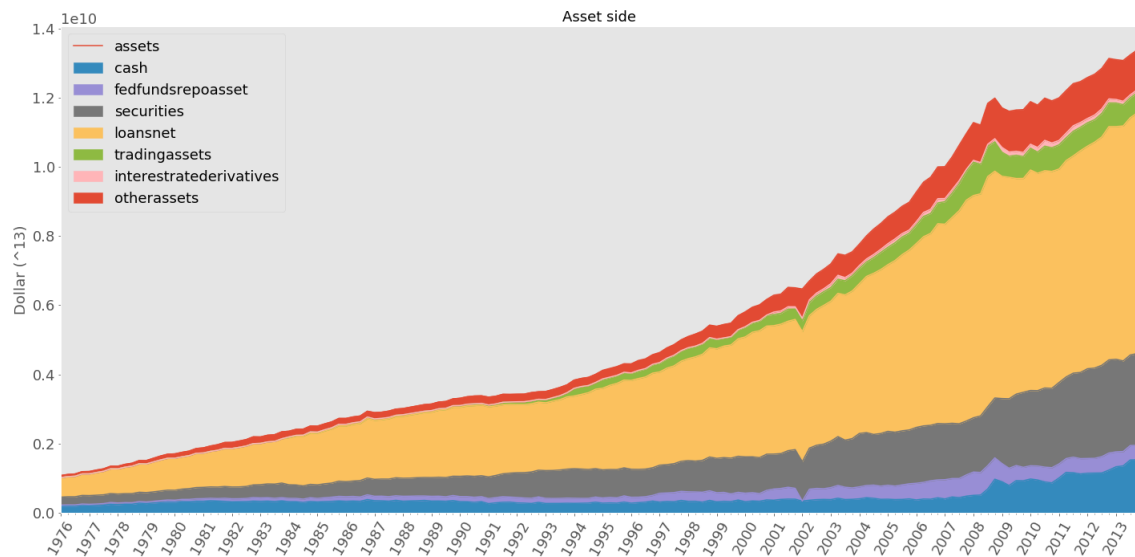
1	Introduction	1
2	Main part	1
2.1	General look at us banks	1
2.2	Looking into leverage	10
3	Conclusion	13

1 Introduction

2 Main part

2.1 General look at us banks

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

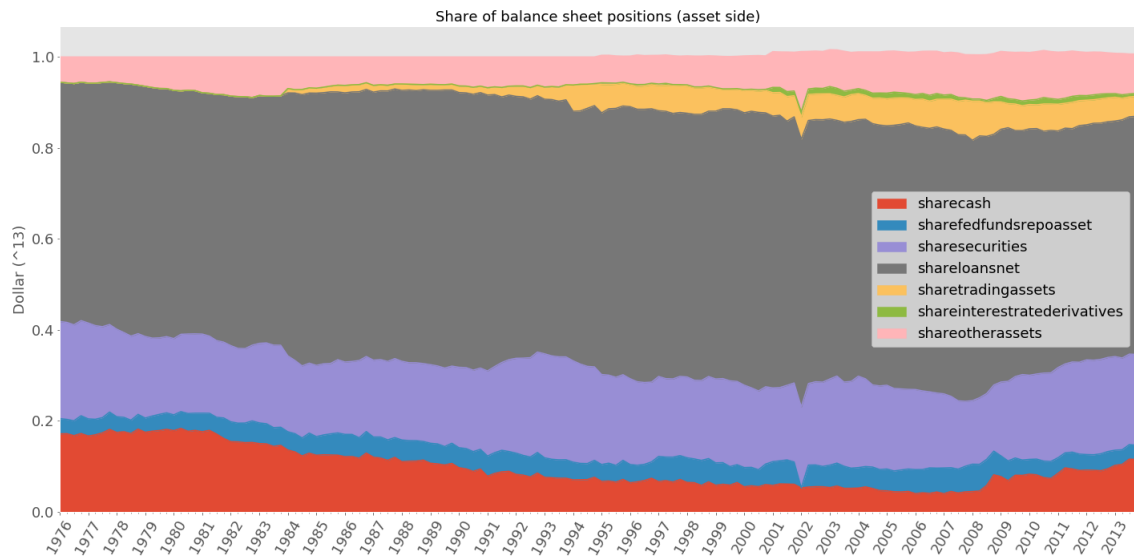
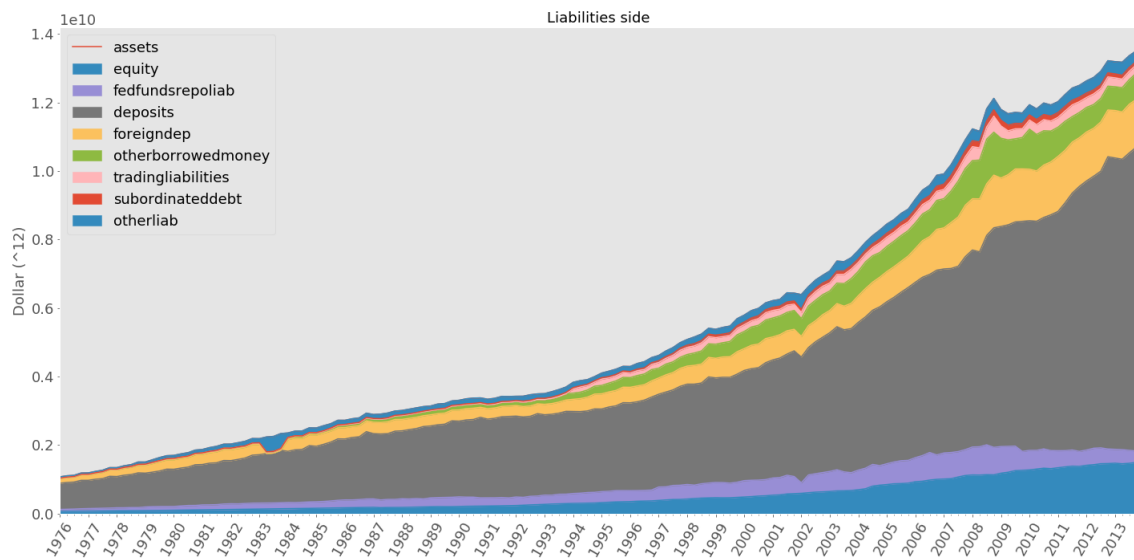


Figure 3: Liabilities side



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

Key Observations:

- real estate loans has largest share

Figure 4: Share of liabilities positions

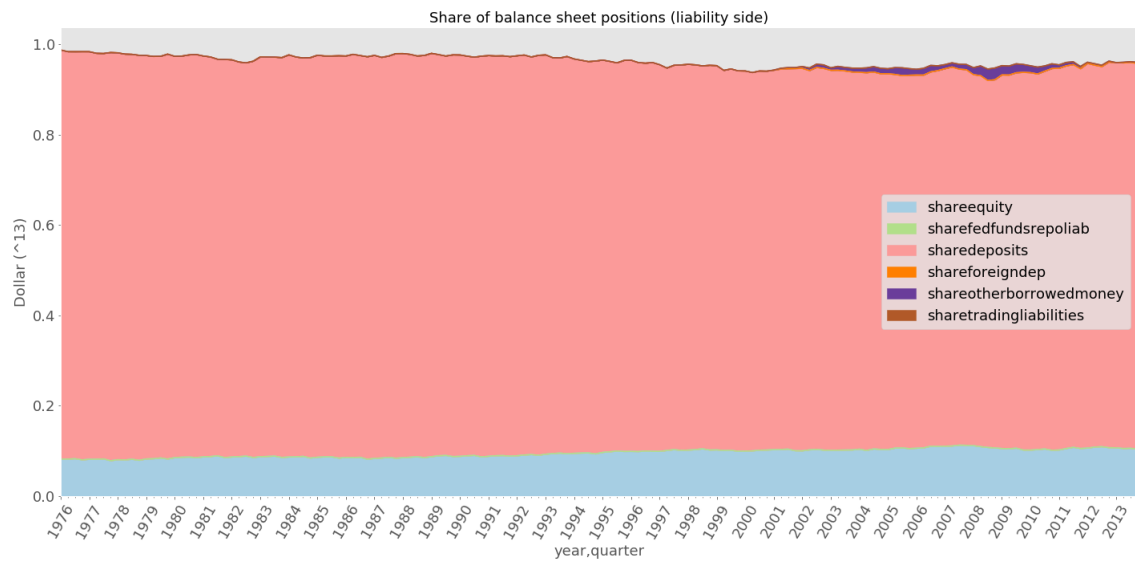


Figure 5: Growth of assets

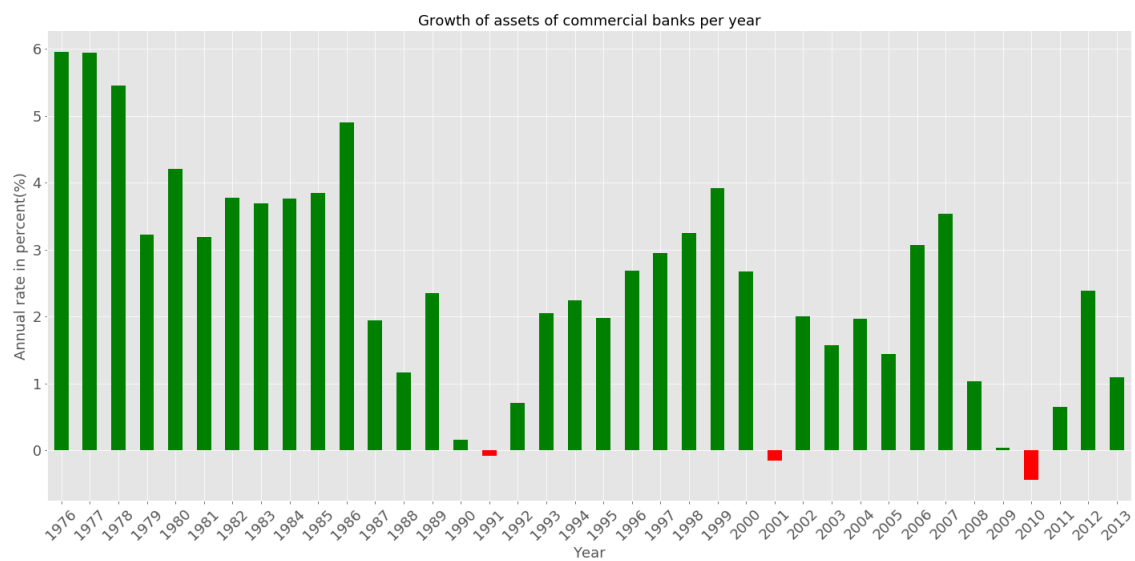


Figure 6: Loans

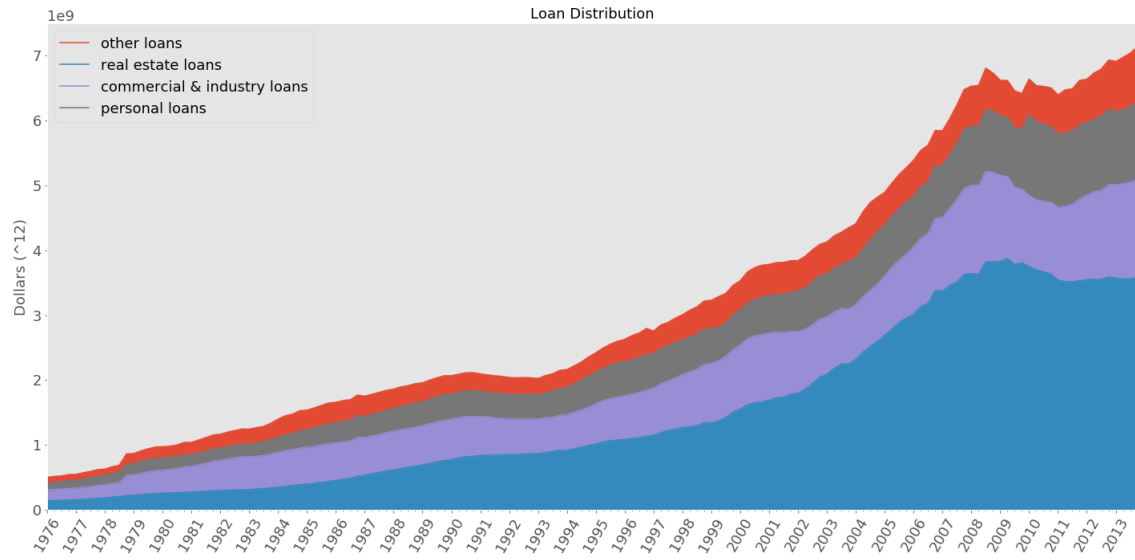


Figure 7: Loans by repricing maturity

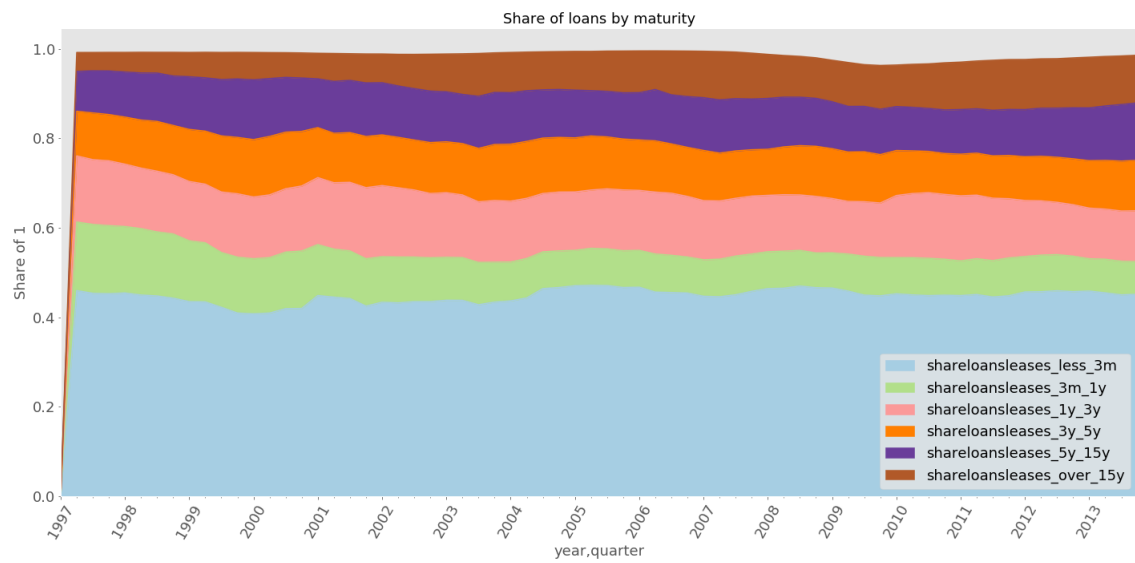


Figure 8: Residential Loans by repricing maturity

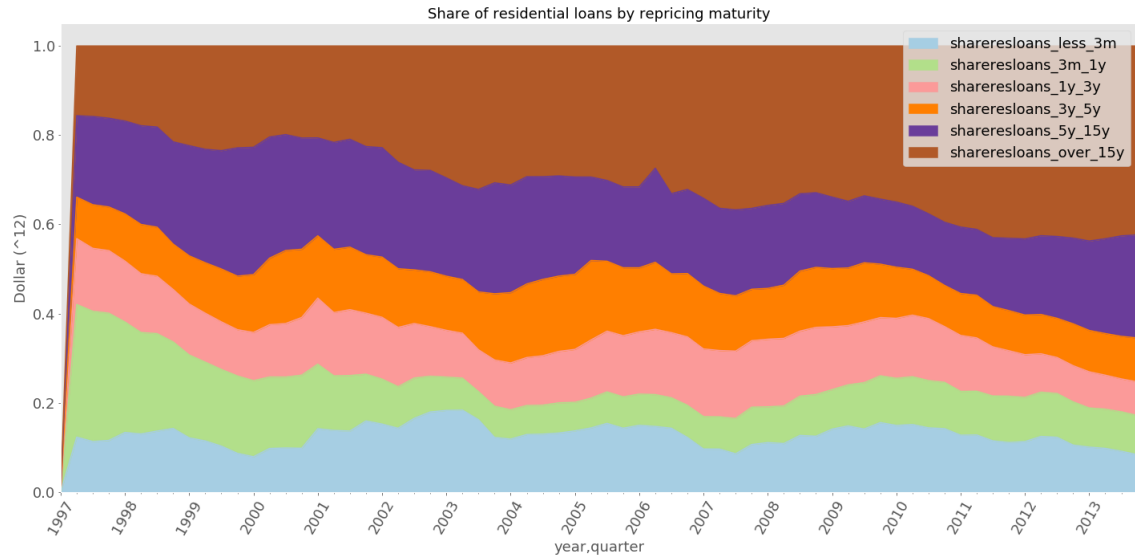


Figure 9: Aggregate assets by percentiles

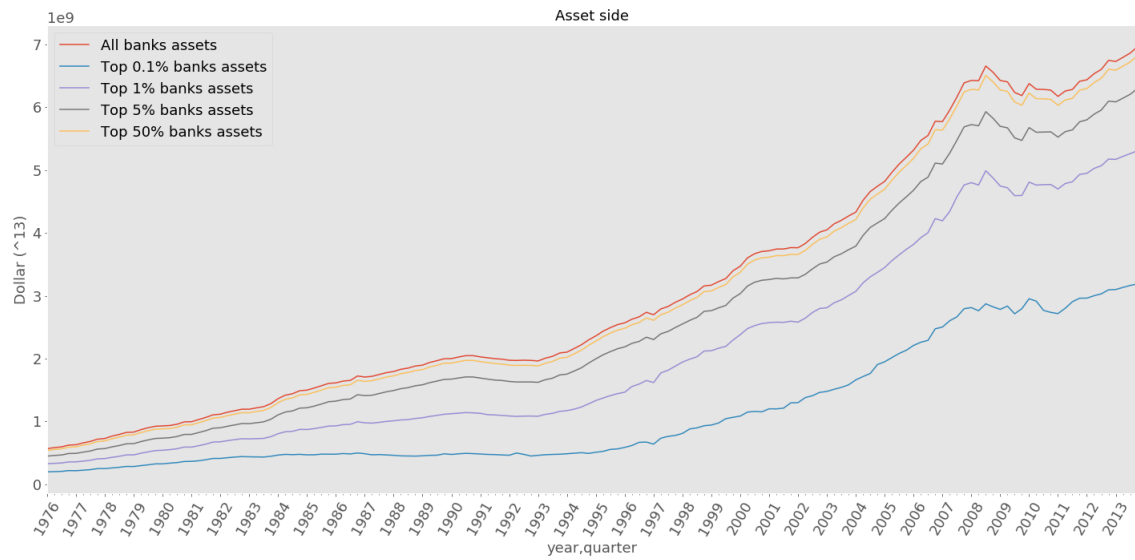


Figure 10: Top 10 banks assets vs rest

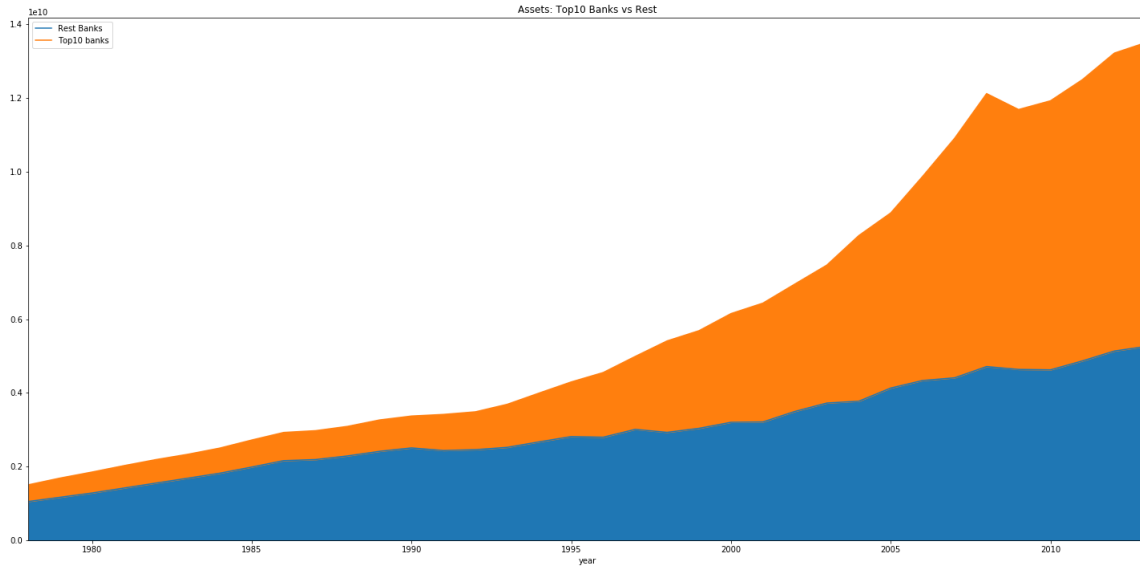
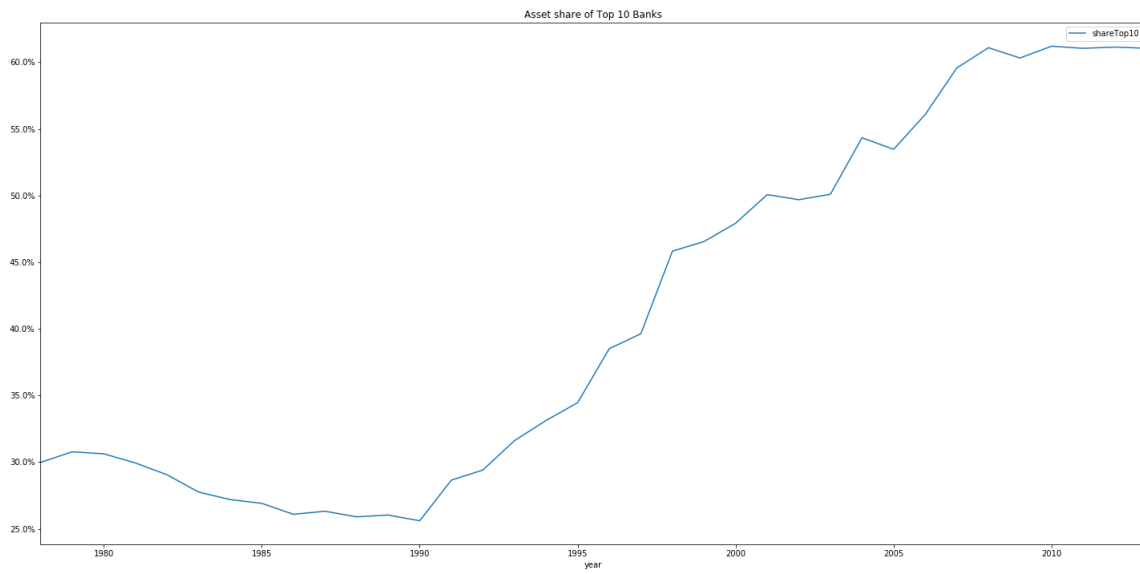


Figure 11: Rise of top 10 banks asset share



Banks by asset size

Figure 12: 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

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

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

Small bank: $< 10^5$

Medium bank: $< 10^6$

Large bank: $> 10^6$

Figure 13: Asset size by bank

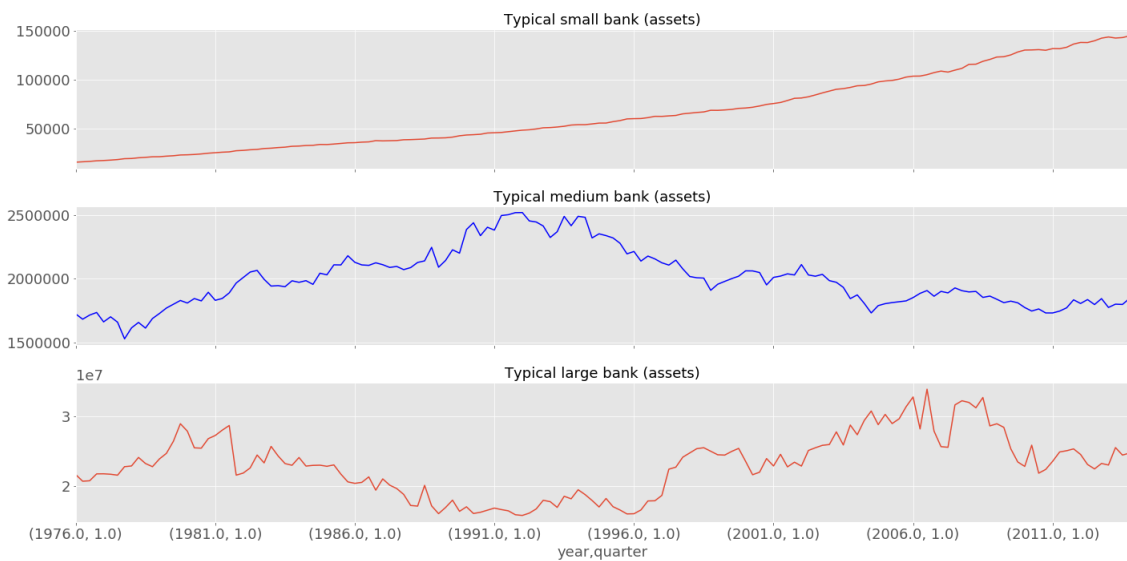


Figure 14: Medium vs large bank by asset size

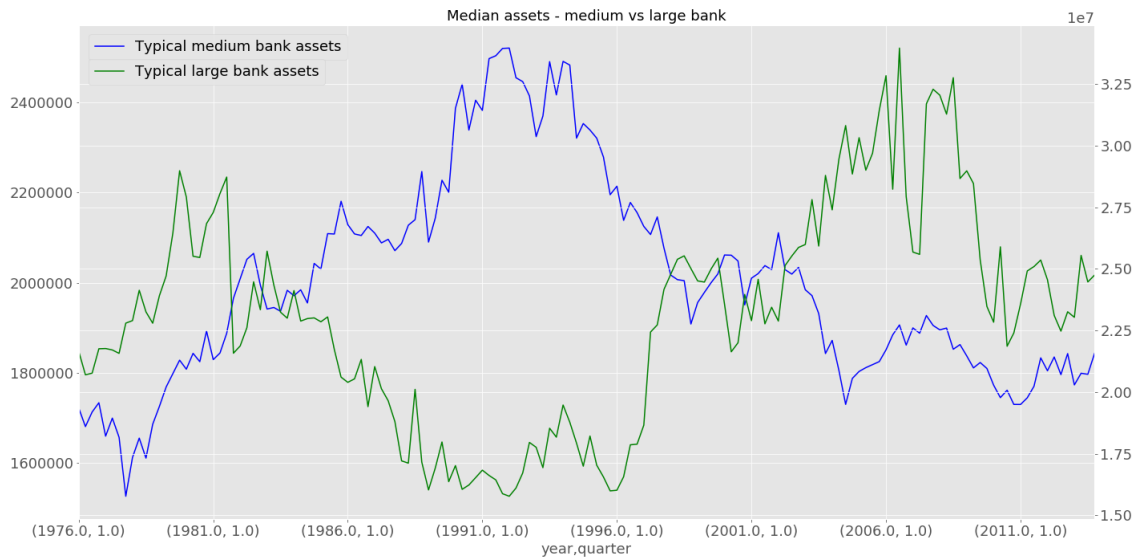


Figure 15: Small bank: liability side

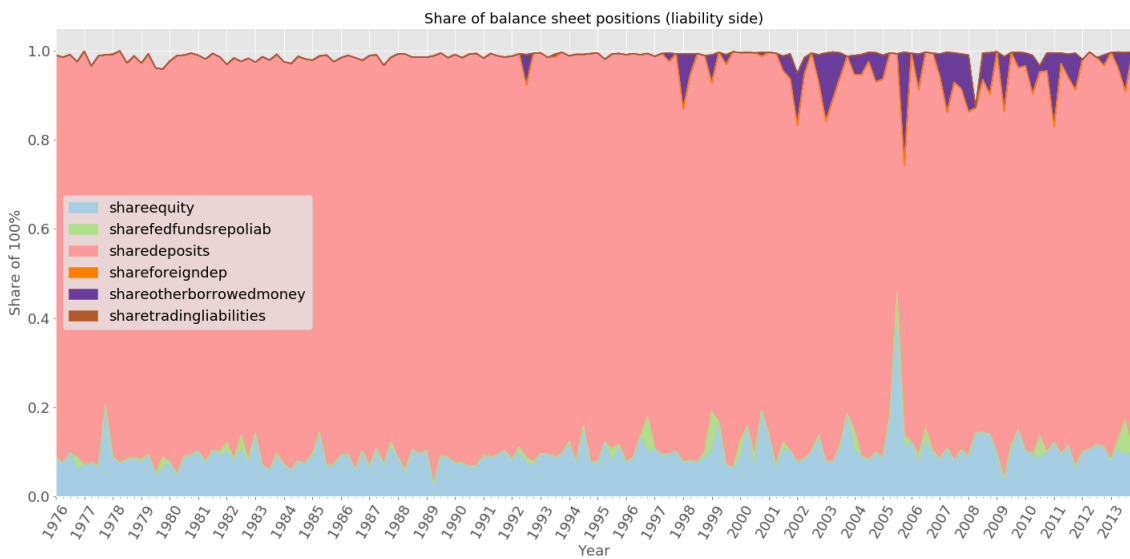


Figure 16: Medium bank: liability side

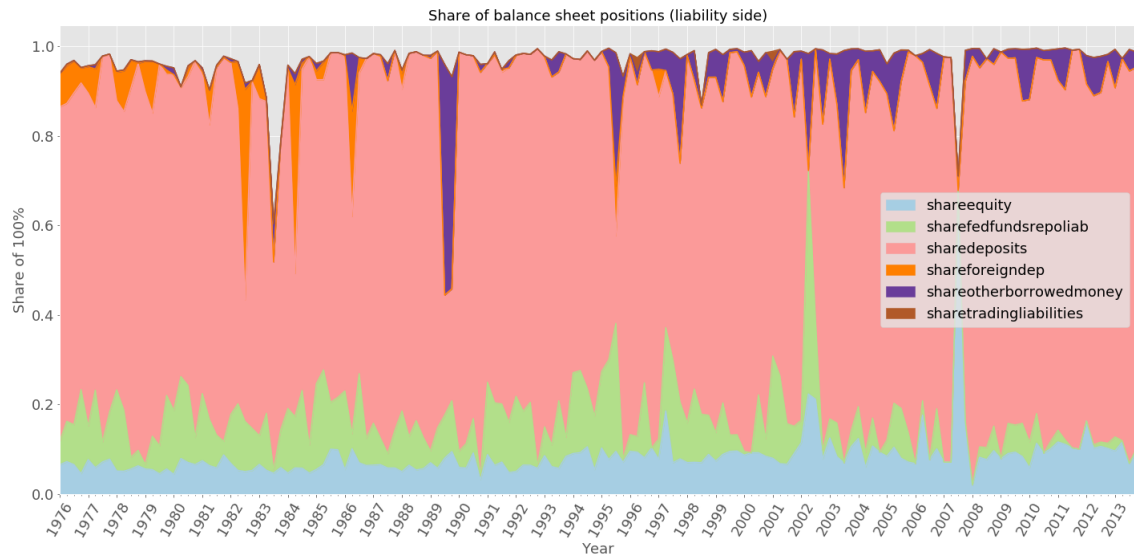
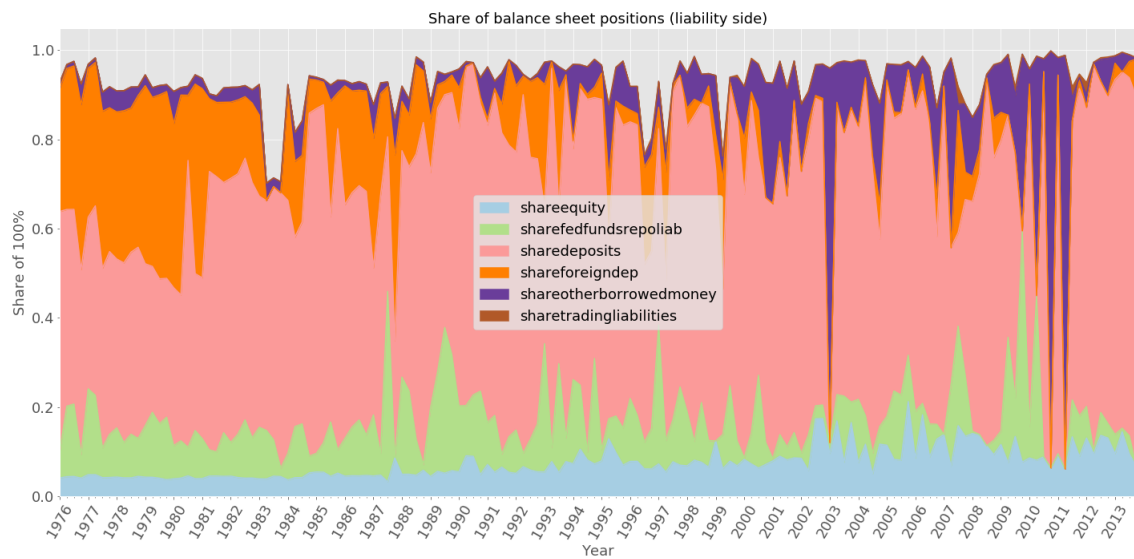


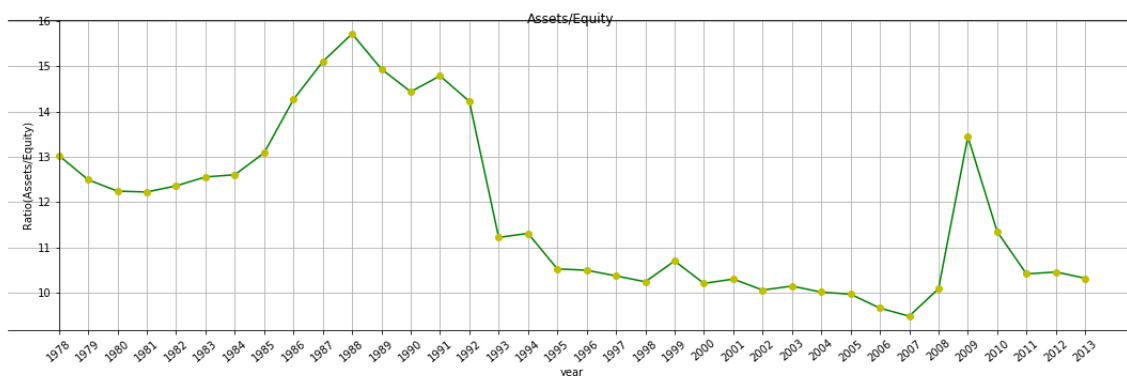
Figure 17: Large bank: liability side



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 18: Average Leverage over all years

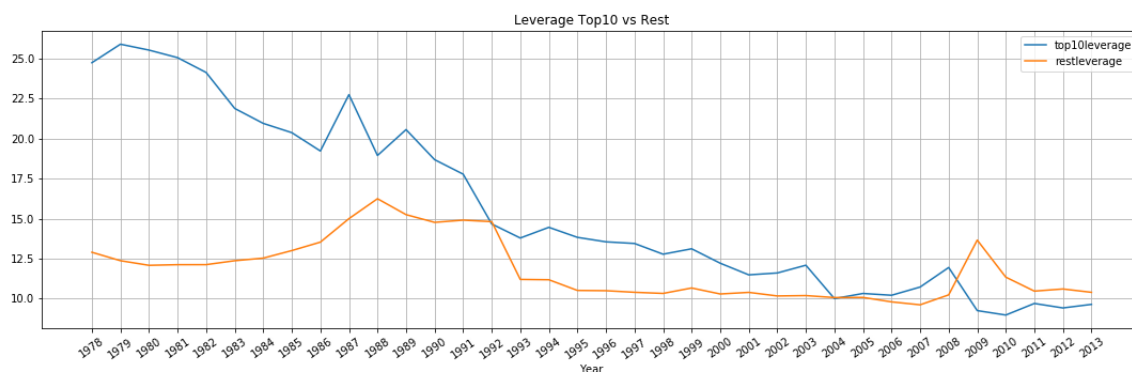


Graph description: The graph shows the average leverage (assets/equity) for every year over all banks. Banks with equity or assets below zero are excluded.

Key Observations:

- Overall Leverage did fall over time
- 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 19: Leverage Top 10 vs Rest over all years



Graph description: Since the top 10 banks share of assets did rise up to 60% in 2013, it is important to differentiate. The graph shows the average leverage (assets/equity) for every year quarter 4.

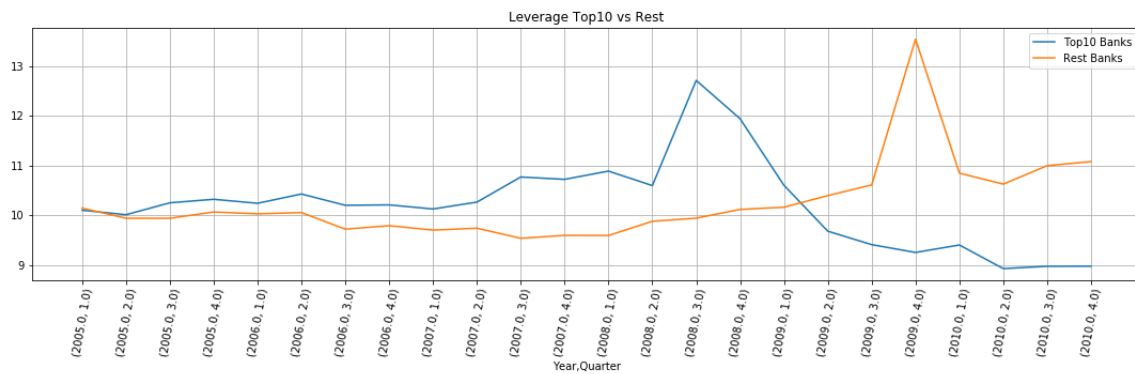
Blue Line: Top 10 Banks by assets

Orange Line: All banks beside the top 10

Key Observations:

- Leverage of top 10 banks tends to be higher
- Trend of falling leverage is similar

Figure 20: Leverage Top10 vs Rest detailed look into crisis

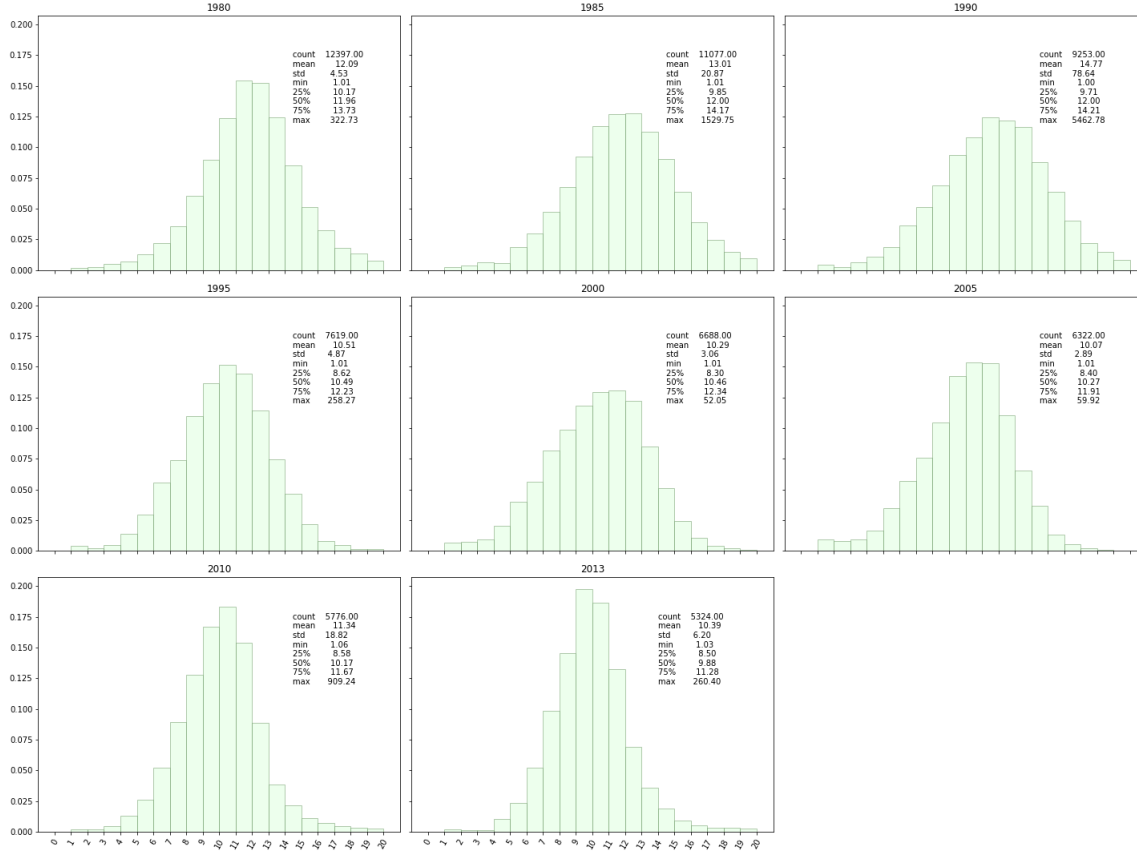


Key Observations:

- Top10 banks leverage peak in year 2008/3 before the rest banks leverage peak in year 2009/4 (theory of risky assets from big banks to small transfer?)

A look into the distribution of leverage

Figure 21: Distribution 1980-2013

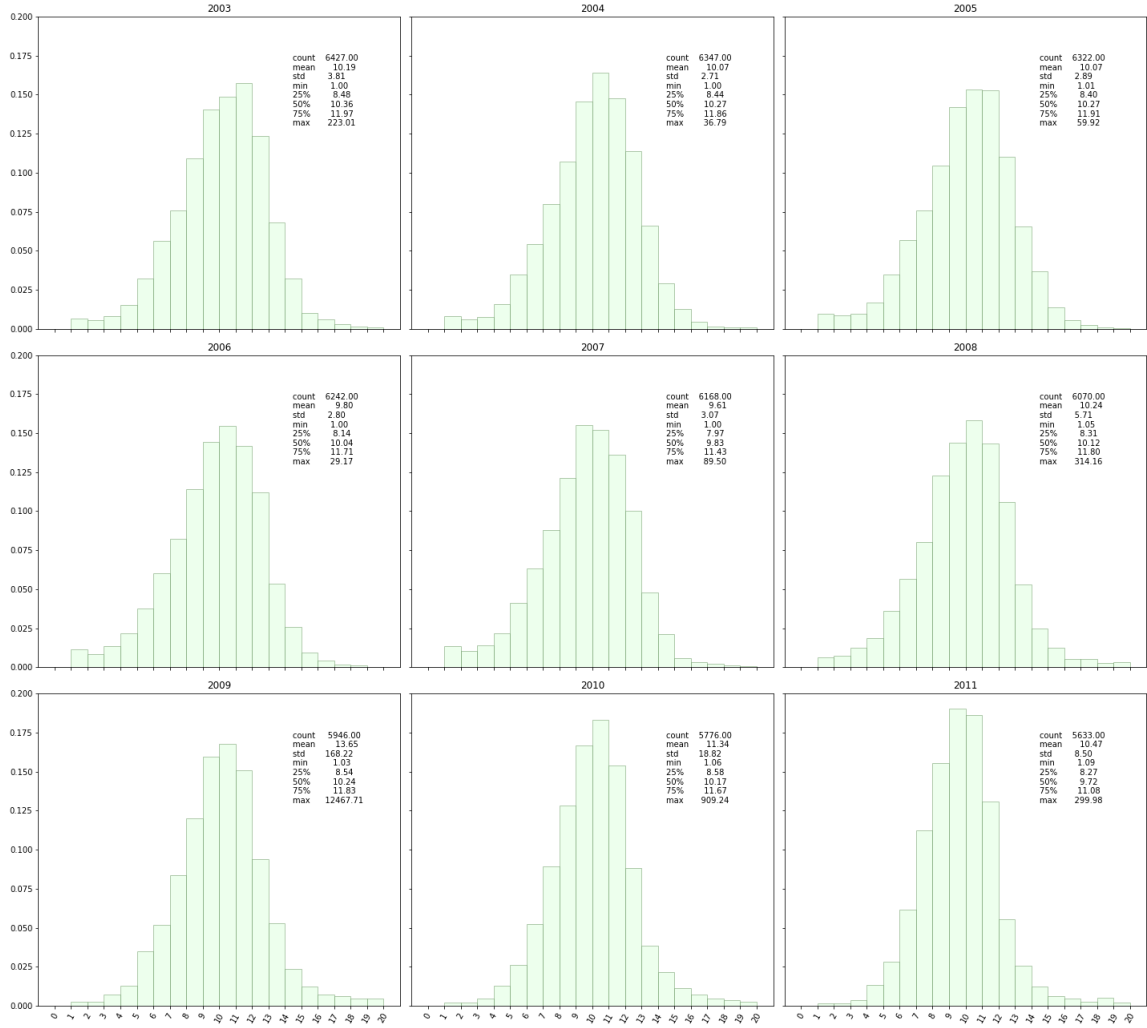


Graph description: Counts are normed to 1. Only leverage ratios between 0-20 are accounted for. The others are seen as outliers. Leverage ratios are always from quarter 4.

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 22: 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 homogeneity over time.
- extremely high standard deviation in year 2009 with 168.22

3 Conclusion