PERSPECTIVES OF EUROPEAN BANKS

EXCERPT FROM THE
EUROPEAN BANKING STUDY 2018

BRUSSELS, NOVEMBER 2018

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Agenda

Where do the largest 50 European banks stand today?

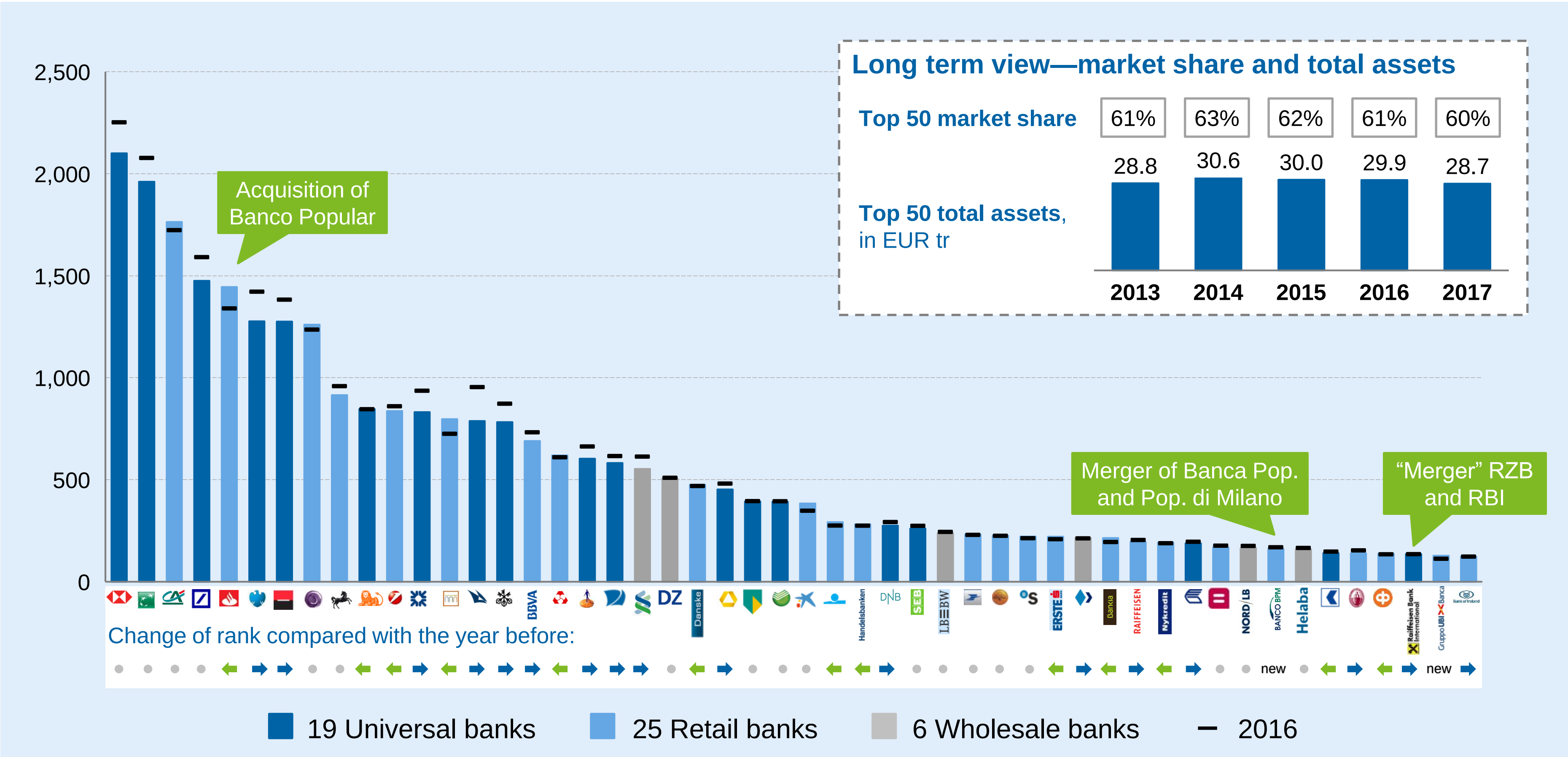
Which business models work well?

Is a national or pan-European consolidation the silver bullet?

Ranking of top 50 European banks changed over 2017 as a result of large mergers and new entrants—total assets have recently decreased slightly

Basis 2017[1], in EUR bn

50 LARGEST EUROPEAN BANKS BY TOTAL ASSETS

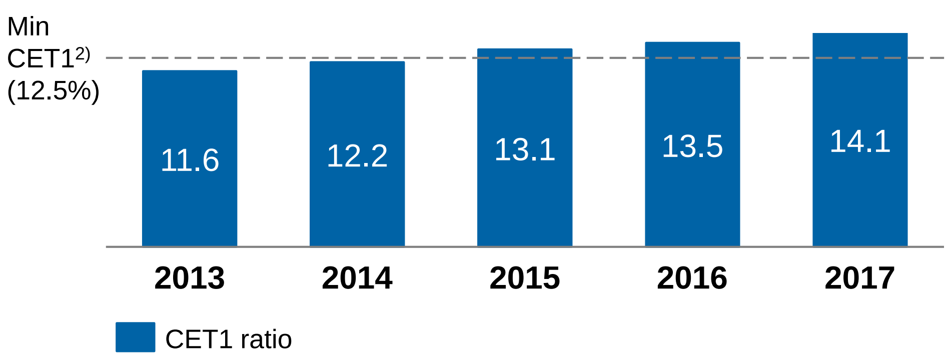


1) Sample contains 50 largest European banks by latest stated total assets, for 2017, all figures are based on full year numbers; Europe includes the 28 countries of the European Union, Norway, Russian Federation, Switzerland, Turkey; see backup for further details on the sample; Source: company reports, European Banking Federation, ECB, FitchConnect, zeb.research

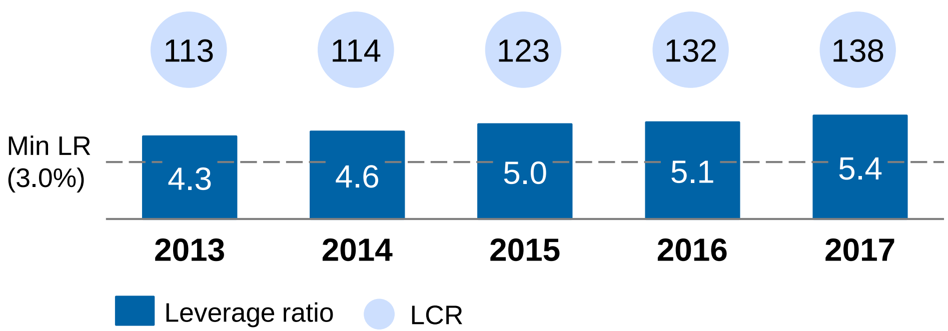
Ten years after the financial crisis, European banks are in their most resilient position ever—with Basel III finalized, regulatory timetable is set

Capital and liquidity of European top 50 banks

COMMON EQUITY TIER 1 (CET1) RATIO[1] (in %)



LEVERAGE RATIO (LR)[3] / LCR[4] (in %)



COMMENTS

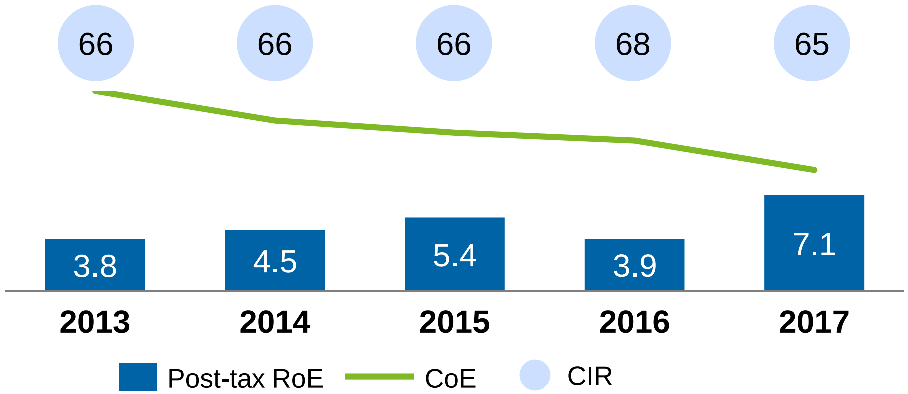
- Regulatory pressure has led to **increased CET1 and leverage ratios**
- 7 years after its agreement, the **Basel III** post-crisis reforms **were finalized in December 2017**
- **Full adoption of "Basel IV" rules by 2027**—long phase-in period for banks and more clarity about the full impact
- Still a **huge regulatory agenda**—numerous initiatives to be met but **no sign of any further fundamental "game changers"!**
- **Strength of regulatory requirements** regarding capitalization and liquidity remains to be tested during **financial crises**

1) CET1 ratio: CET1 capital to risk-weighted assets; 2014/15/16/17: transitional CET1 ratio, 2013: Tier 1 ratio; 2) Est. market avg., individual req. for each bank; avg. consists of 4.5% Pillar 1 req. + 2.5% capital conservation buffer + 1.0% avg. countercyclical buffer + 1.0% avg. systemic buffers (incl. G-SIB, syst. buffer) + 2.0% avg. SREP surcharge + 1.5% "maneuvering" buffer; 3) Based on reported figures, estimated if not available, see backup for details; 4) LCR: Liquidity Coverage Ratio, based on reported figures; Source: company reports, FitchConnect, zeb.research

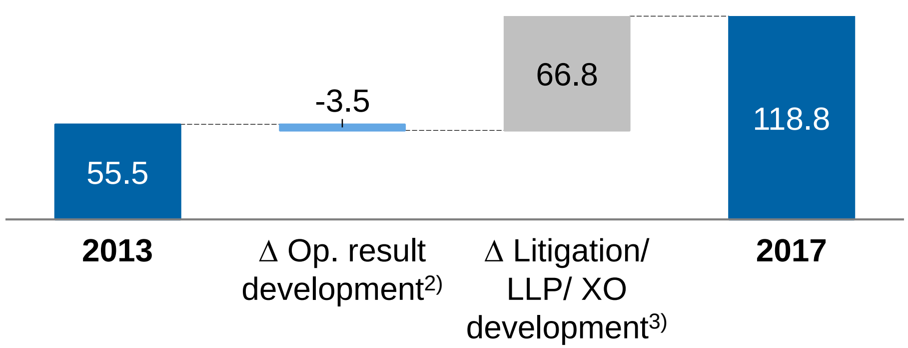
The profitability problem: returns have increased recently but remain below the cost of equity—no overall operational improvements

Profit after tax and key components of European top 50 banks

POST-TAX ROE / COST OF EQUITY / CIR[1] (in %)



POST-TAX PROFIT DEVELOPMENT (in EUR bn)



COMMENTS

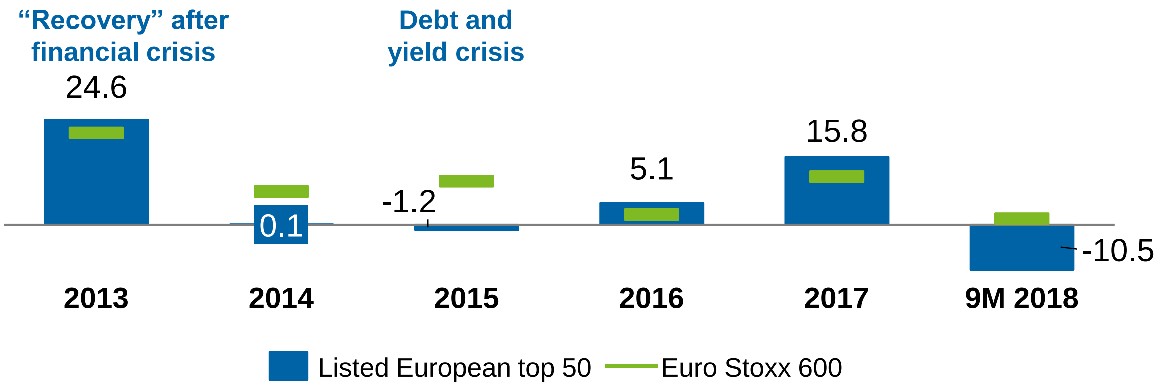
- RoE has improved since 2016, but **still below cost of equity**
- RoE increase is predominantly **driven by positive litigation, LLP and XO** developments—historically low levels in 2017
- However, positive litigation, LLP and XO developments are often **one offs** and **cannot be relied upon** every year
- **2016 drop** explained by a large **decline in operational profits** which could not be compensated by legacy items

1) Post-tax RoE (return on equity): post-tax profit to avg. total equity, cost of equity (CoE): 10-year moving average of European 10-year gov. bonds as risk-free rate plus risk premium of 5.5% multiplied by banks' individual beta; CIR (cost-income ratio): operating expenses to total earnings; 2) Includes total operating earnings and operating exp.; 3) Litigation costs, loan loss provisions (LLPs), extraord. result and profit / loss from discontinued operations (XO result) and tax; Source: Bloomberg, FitchConnect, zeb.research

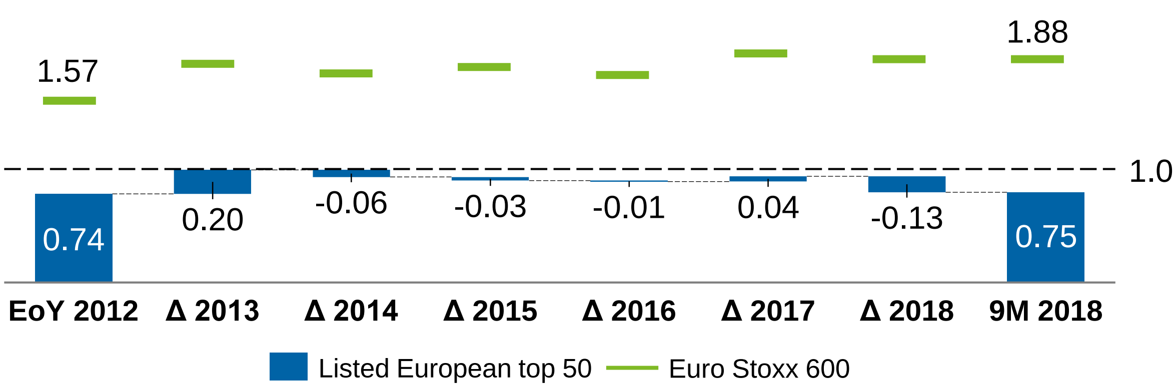
After good figures in 2016/17, capital markets turned negative again in the first half of 2018—average valuation of banks still on crisis level

Capital market performance and valuation

TSR[1)] OF LISTED EUROPEAN TOP 50 AND EURO STOXX 600 (IN % P.A.)



P/B RATIO[2)] DEVELOPMENT OF LISTED EUROPEAN TOP 50



COMMENTS

- Top 50 banks outperformed the market over the last two years
- **P/B ratios** of top 50 **below** the important hurdle of **1.0x and well behind the market average**
- Current **valuation** nearly **unchanged compared to post-crisis period 2009/2010**
- Spread between top 50 banks and the market has actually widened
- Investors still display **low confidence** in banks' value generation
- During **first half of 2018**, stocks of most European banks fell into **bear market**

1) Total shareholder return; 2) Price-to-book ratio; Source: Bloomberg, Thomson Reuters Datastream, zeb.research

No fundamental changes in the foreseeable future—profitability remains the key issue as the overall capital situation is positive

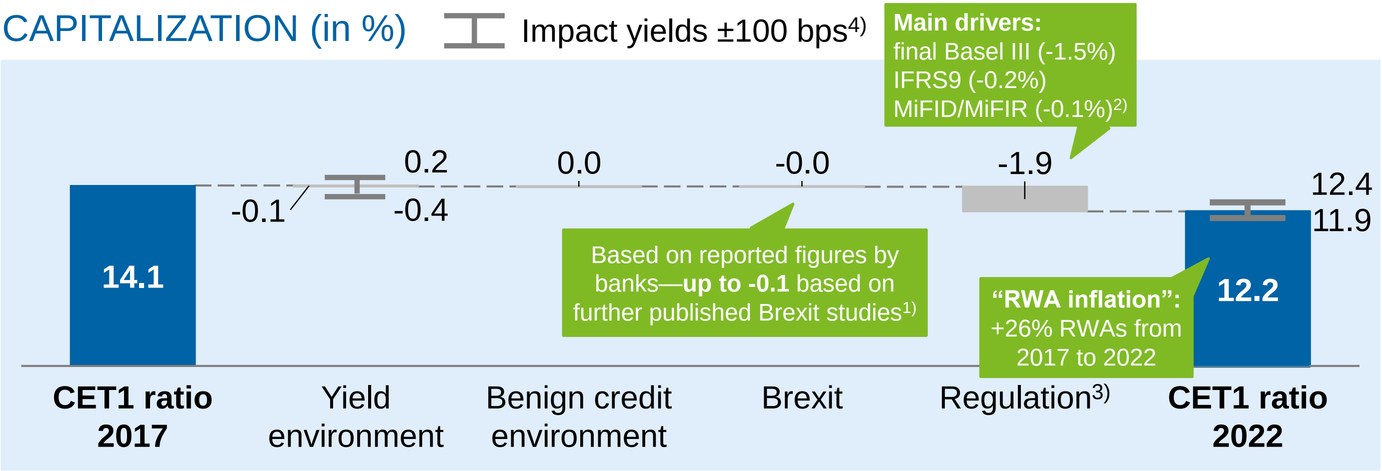
Outlook of European top 50 banks

See backup for further details

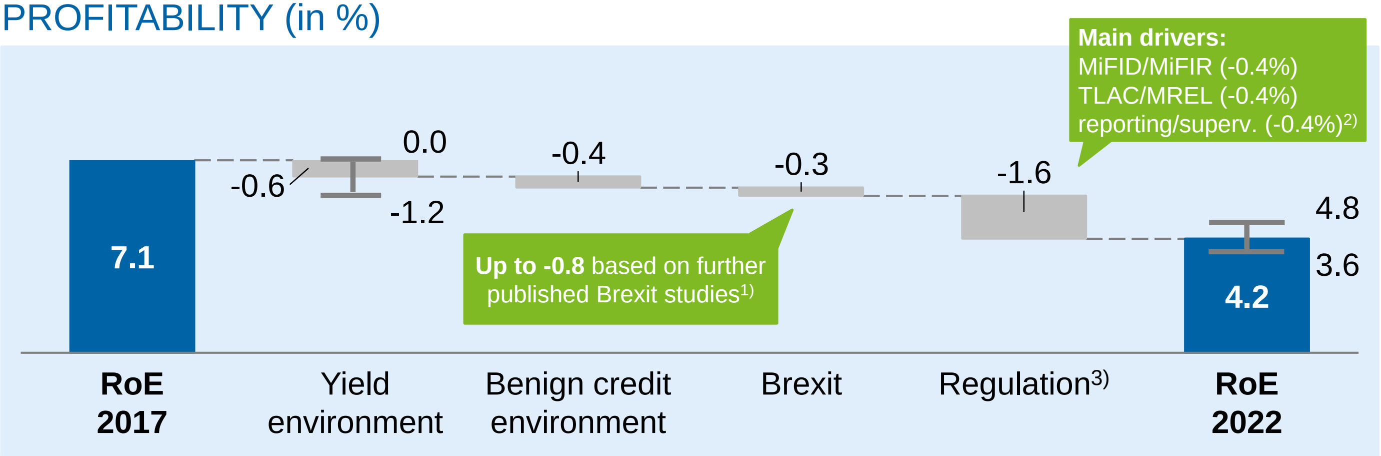
APPROACH

- **Holistic simulation** based on B/S and P&L figures of top 50 banks
- **No management actions**
- Const. B/S and P&L, market environm. and regulatory implement.
- **Baseline scenario:** constant yields as of 12/31/2017
- Implementing **most important regulatory initiatives** (based on cost / business impact) through assumed bank-specific impacts on P&L, B/S and capital

CAPITALIZATION (in %)



PROFITABILITY (in %)



1) Based on reported figures/calculations from other published Brexit studies; 2) Remaining driver capitalization: reg. rep./supervision (-0.1%), other approx. zero; profitability: final Basel III (-0.3%), ring-fencing UK/ US (-0.2%), other approx. zero; 3) Incl. MiFID/MiFIR, TLAC/MREL, ring-fencing UK/ US, final Basel III calc. fully phased-in (incl. Rev. SA/IRBA, SA-CCR, CVA, SEC, FRTB and rev. SA op. risk), IFRS 9, regulatory reporting and supervision (incl. AnaCredit and new disclosure requirements, stress test and SREP); 4) Estimated impact of a short-term, parallel shift of the yield curve by +/- 100bp based on banks' reported net interest income sensitivities; Source: zeb.research

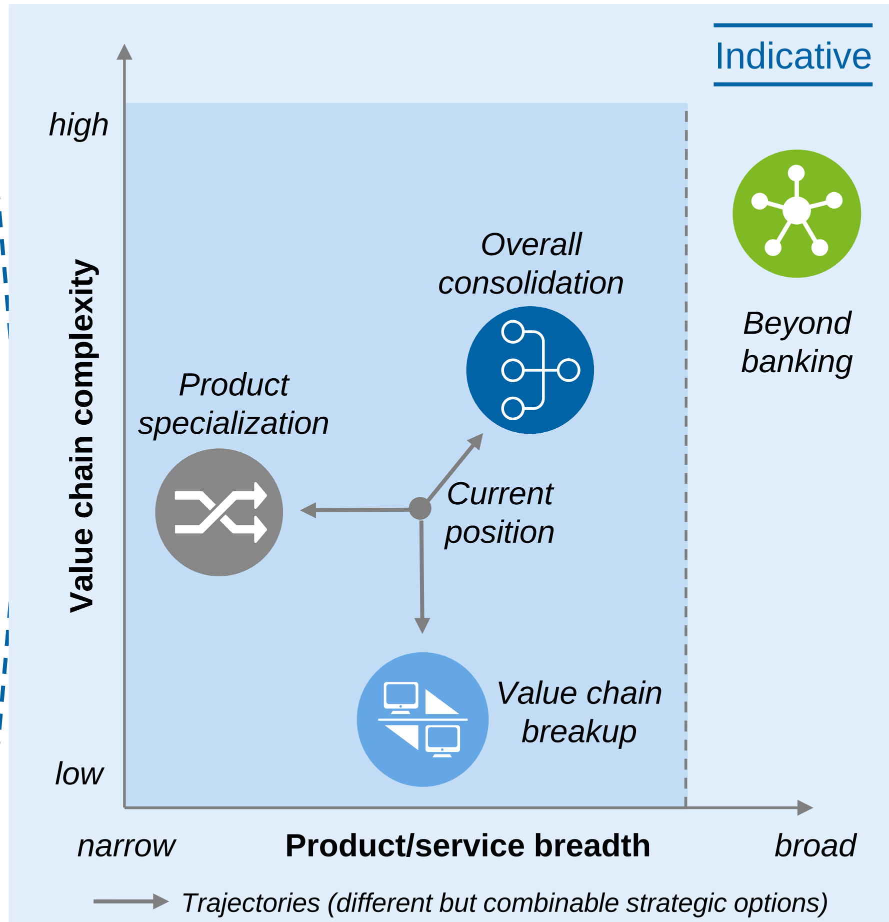
Based on the current situation, European banks have several strategic options to develop their existing business models

Major market trends

SITUATION…

Current situation as well as future projections of European top 50 banks reveal **a need for urgent action** in order to meet current challenges of the European banking industry

…OPTIONS FOR CLASSIC BANKS…



… AND RESULTING TRAJECTORIES

1
- Keep the existing business model
- Gain **economies of scale**

2
- Focus on certain products/channels
- "**Disintermediation**" of the bank

3
- Implement state-of-the-art **IT infrastructure**
- Digitalize processes and reduce legacy systems

4
- Maximize the customer relationship value through add. services
- Build/join **ecosystems**

Agenda

Where do the largest 50 European banks stand today?

Which business models work well?

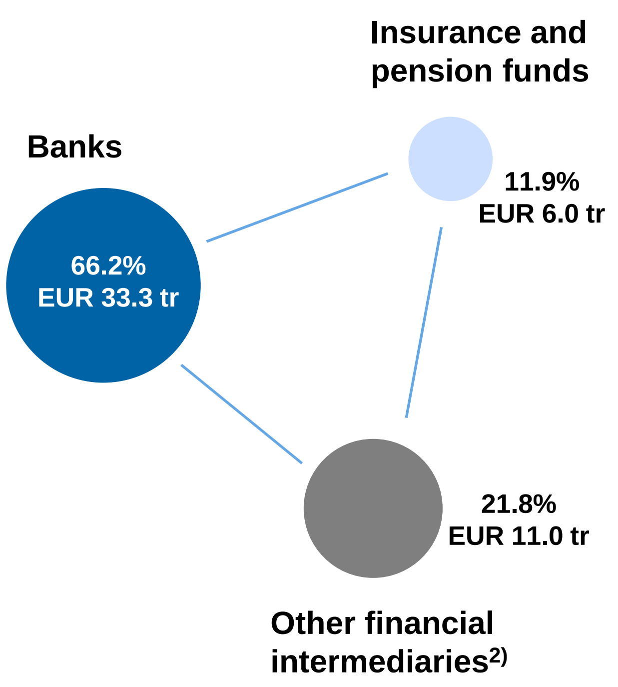
Is a national or pan-European consolidation the silver bullet?

The disintermediation problem: as other players emerge, the role of banks is diminishing—banks are losing market share in a growing market

The "solar system" of the eurozone's financial sector[1)]

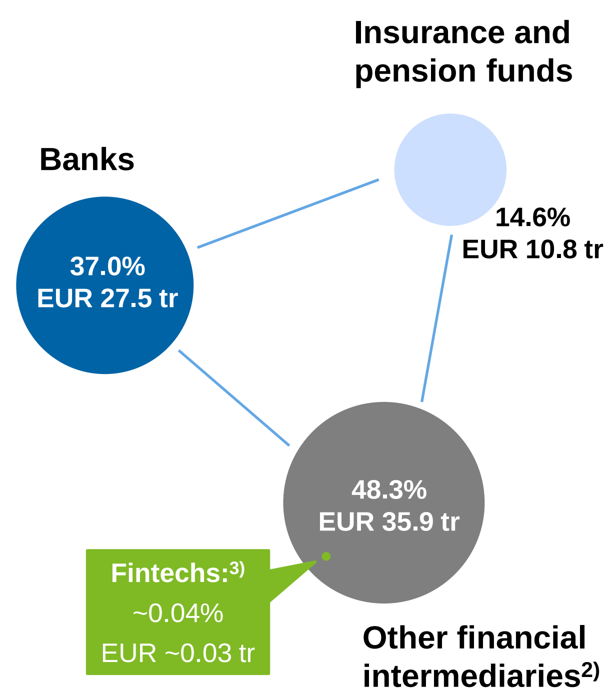
2008

Total market (total assets): EUR 50.3 tr



2017e

Total market (total assets): EUR 74.2 tr



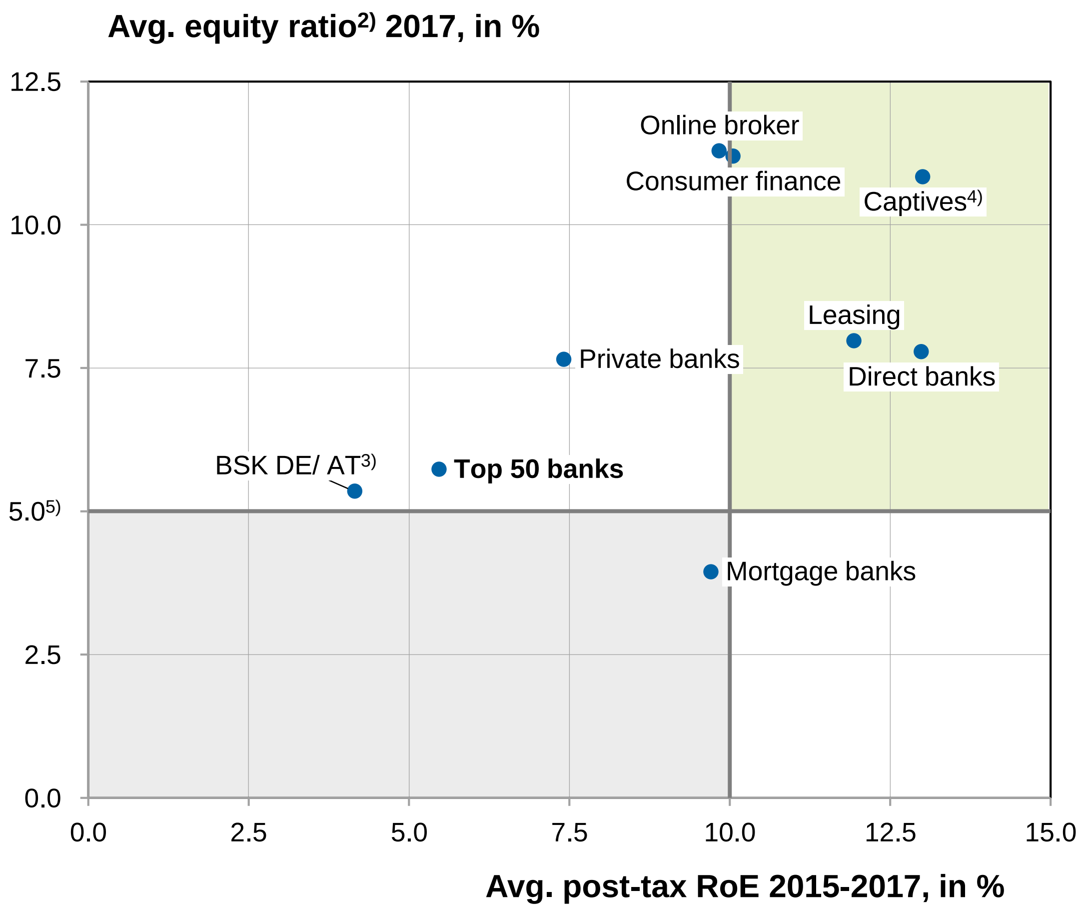
COMMENTS

- Since the financial crisis, banks have been receding within the fin. sector
- The share of the **non-bank financial sector** has been steadily increasing
- Key reasons: net money inflows, rising valuations
- A "wait-and-see" approach by banks is leading to a further loss in relevance
- Despite negligible size, **Fintechs and TechTitans** are an important threat to banks
- Their competencies are **outside the B/S** and typical banking measures

1) Data for all Euro zone countries; figures for 2017 estimated based on 2016 full year numbers and averaged annual growth rate 2012-2016; 2) OFIs, includes e.g. money market funds, hedge funds, real estate funds, equity funds, companies engaged in financial leasing and holding of securitized assets, dealing in securities and derivatives, e.g. venture capital corporations and development capital companies; 3) Rough estimation; Source: Bundesministerium der Finanzen Germany; ECB, zeb.research

Product specialization indicates comparative advantages—European top product specialists and online banks clearly outperform top 50 institutions

Profitability and capitalization of banks and product specialists[1]



COMMENTS

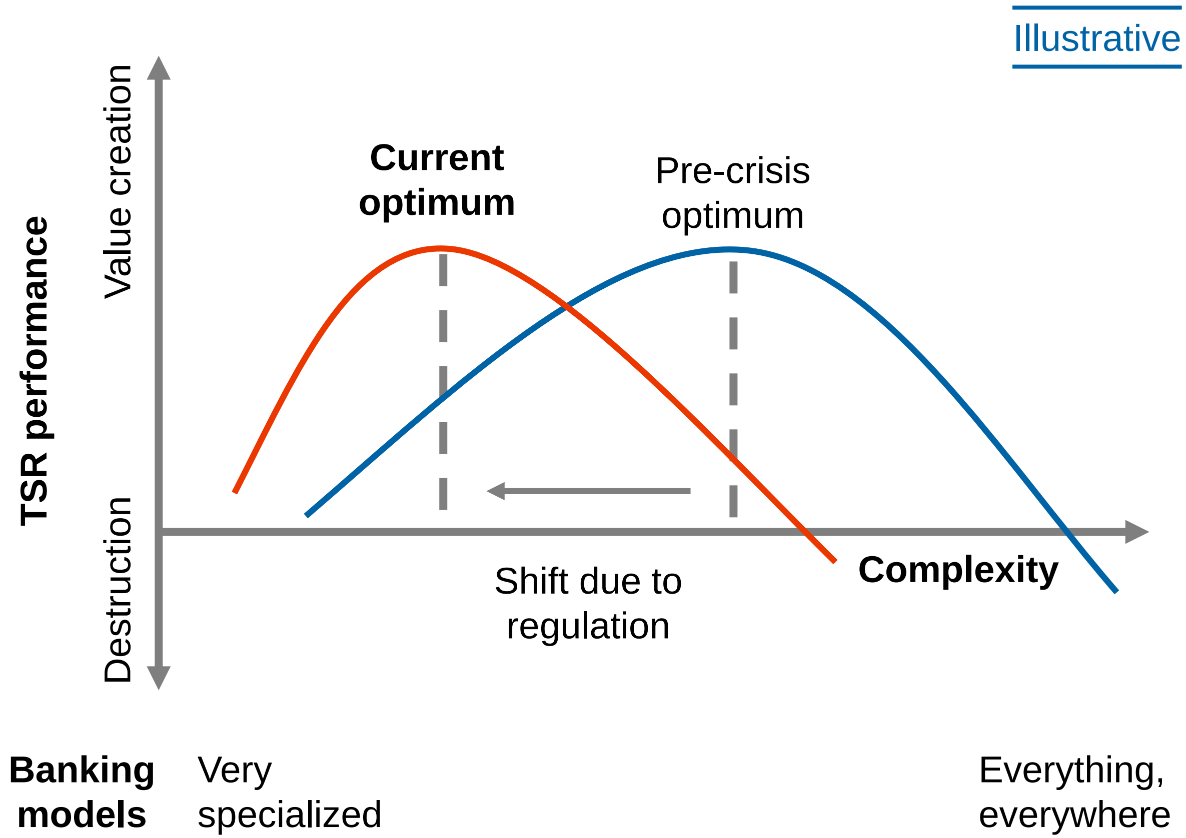
- **Higher capitalization** of specialist banks due to focus on less capital intensive businesses
- In particular, product specialists have **higher profitabilities** than European top 50 banks
- **General question:** Why are the **advantages of specialization** (re. products, channels) higher than **advantages from potential synergies** (through cross-selling, risk diversification, econ. of scale)?

1) Largest companies in Europe (top 5: consumer finance specialists, leasing companies, online broker, top 10: all other specialists), see backup for further details; 2) Total equity to total assets; 3) BSK: Bausparkassen; 4) Due to their strong connection to an industrial group, captives are “subsidized” in some terms which might lead to (on average) higher returns / lower equity ratios; 5) Correlates on average to a banking CET1 ratio of 12.5% (40%); Source: company reports, FitchConnect, zeb.research

Shift in trade-off between complexity and diversification benefits favors specialists—time to refocus on core qualities

Specialization vs. diversification of banks

LEVEL OF SPECIALIZATION AND COMPLEXITY[1)]



COMMENTS

- Post-crisis regulation leads to **higher complexity costs and lower potential synergies**
- Optimal level of complexity and size shifts downwards favoring **specialized banking models or less regulated institutions**
- Large universal banks do not necessarily have to become product specialists!
- Implementing clearly **separated entities/specialists** can lead to very good results even within a large universal banking group
- Situation **might change in the future** due to lower regulation or higher synergetic potential

1) Of course, the optimal level of specialization and complexity is different for each individual bank and the result of a bank's individual situation which includes market position, business and operating model, product/service portfolio, IT systems/infrastructure and other factors; Source: zeb.research

Agenda

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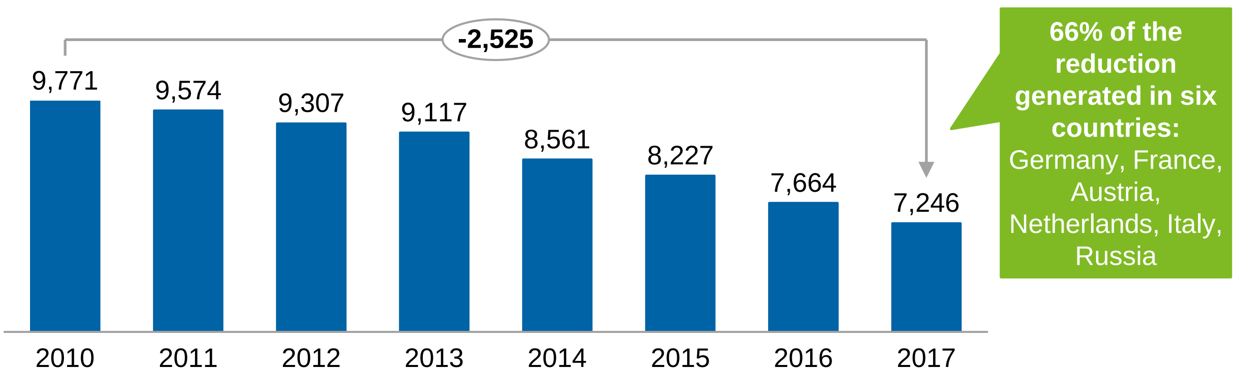
Is a national or pan-European consolidation the silver bullet?

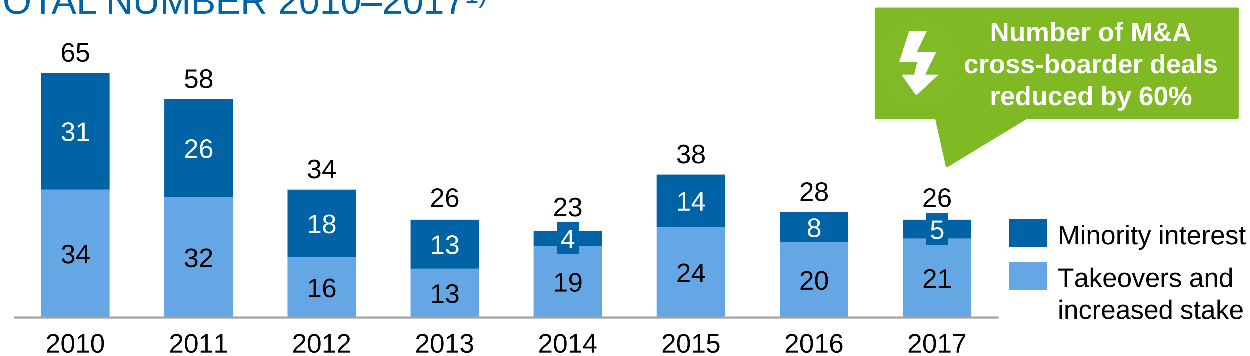
1 Consolidation is a huge topic in European banking, however more on a domestic level as fewer cross-border M&A deals in recent years

M&A activity and number of banks

NUMBER OF COMMERCIAL BANKS 2010–2017



M&A CROSS-BORDER DEALS IN EUROPEAN BANKING, TOTAL NUMBER 2010–2017[1)]



EVALUATION

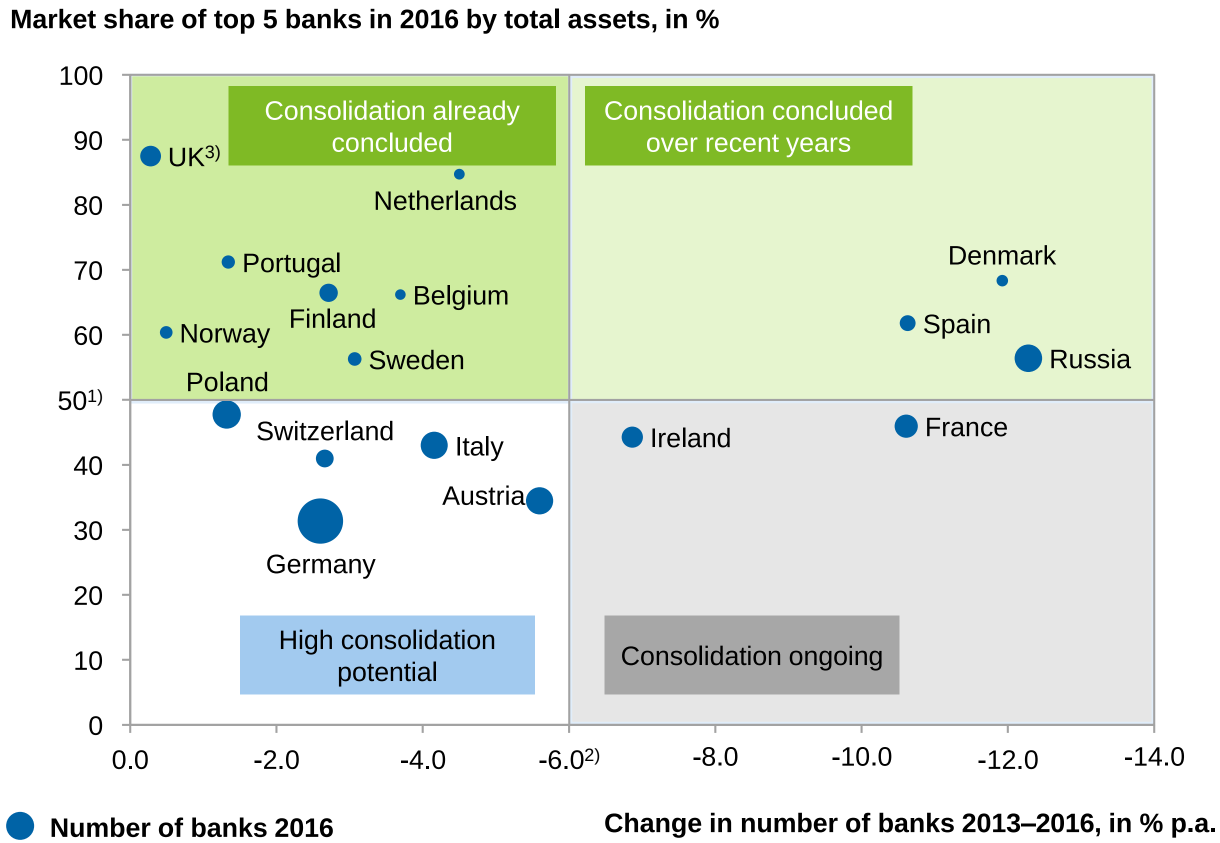
- Strong reduction in the number of European banks indicates **increasing consolidation**
- Current situation: most **mergers on domestic level** and within **banking sectors**
- **Decreasing cross-border M&A activity** over the past few years
- **Less outright mergers,** rather sales of separate busin. lines have been seen
- Persistent rumors of big **pan-European bank mergers** indicate growing **need and search for consolidation**

1) Includes deals between two banks (acquirer and target), target in Europe, deal types: outright purchase, majority interest, minority interest, increased controlling stake, remaining interest; Europe: EU28, Norway, Russia, Switzerland, Turkey, Source: Dealogic, European Banking Federation, ECB, zeb.research

Vastly different degrees of consolidation between European countries—DACH region with especially low concentration

Consolidation phases of European banking sectors

CONSOLIDATION PHASES



FUTURE PROJECTIONS

- Several large European markets (like DACH) show high consolidation potential
- Clearly **separated banking sectors** (e.g. savings / coop. banks, etc.) will show **strong sectoral consolidation**
- Domestic consolidation restricted by emerging **monopolistic structures**
- **Cross-border activities** only way for further growth but fraught with many **"hidden" costs and asymmetries**
- However, even in countries with concluded consolidation, **no truly pan-European bank has emerged** yet

1) Estimated average hurdle for an oligopolistic banking market; 2) Average European consolidation rate p.a. between 2013 and 2016; 3) Based on the number of current accounts in order to exclude London based international investment banking assets; Source: European Central Bank, European Banking Federation, zeb.research

Pure size of banks is no reasonable explanation for success

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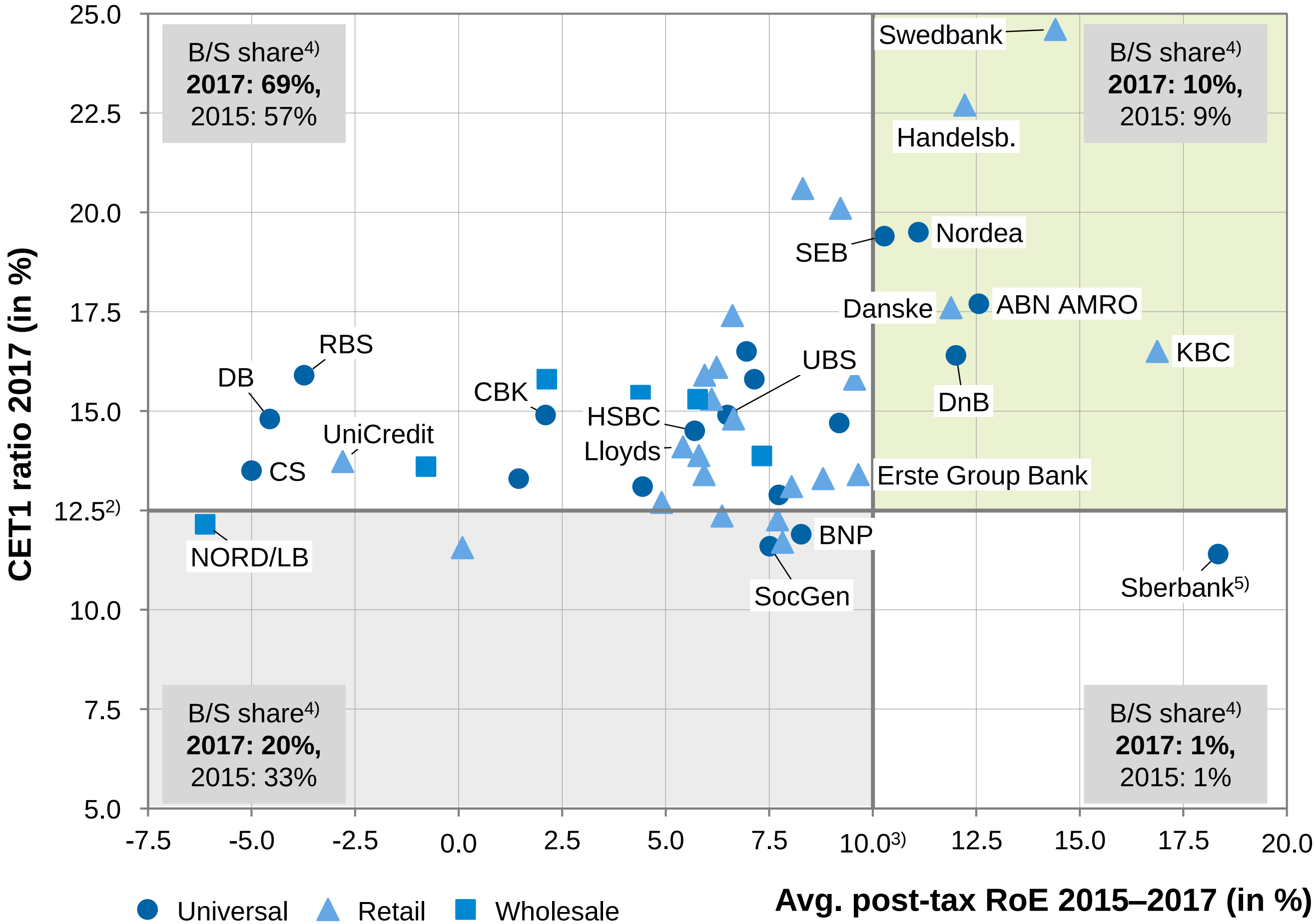
Profitability and capitalization of European top 50 banks[1)]



COMMENTS

- **Successful institutions:** retail banks or "focused universal banks" operating in consolidated markets
- Profitability of the very large players around the overall average—at best
- In recent years, there has been a **clear ("regulatory driven") shift**
- Banks are going from lower squares to upper left quadrant by increasing capital bases

1) Transitional CET1 ratio, figure without Banca M. d. P. di S. (RoE: -25.5%, CET1 ratio: 14.8%); 2) Estimated market average, individual requirements for each bank; average consists of 4.5% Pillar 1 req. + 2.5% cap. conserv. buffer + 1.0% avg. countercyclical buffer + 1.0% avg. systemic buffers (incl. G-SIB, systemic risk buffer) + 2.0% avg. SREP surcharge + 1.5% "maneuvering" buffer; 3) Average cost of equity; 4) Percentage of total assets held by banks in each quadrant; 5) Tier 1 ratio used; Source: FitchConnect, reports, zeb.research

Considering possible M&As, a look at the largest European banks reveals very different starting positions regarding market valuation and size

Overview top 15 European banks 2017

Institute	TOTAL ASSETS[1] in EUR bn	EQUITY in EUR bn	PROFIT AFTER TAX in EUR bn	MARKET VALUE[2] in EUR bn
HSBC	2,100	146	9.9	150
BNP Paribas	1,960	99	8.2	66
Credit Agricole	1,763	101	7.0	36
Deutsche Bank	1,475	63	-0.7	20
Santander	1,444	107	8.2	70
Barclays	1,277	62	-1.0	33
SocGen	1,275	55	3.4	30
Lloyds	915	49	4.0	47
ING	846	51	5.0	44
UniCredit	837	60	5.8	29
RBS	831	48	1.6	34
Intesa	797	57	7.4	39
UBS	782	44	1.0	53
BBVA	690	53	4.8	37
Credit Suisse	681	36	-0.8	33
TOTAL	17,674	1,032	63.6	719

1) Consolidated financial statements incl. foreign assets; 2) As of September 30, 2018; Source: Company reports, Thomson Reuters Datastream, zeb.research

Several key obstacles hamper pan-European mergers between large players—finalization of banking union will not solve all problems

Obstacles for pan-European mergers

MAIN OBSTACLES TO CONSOLIDATION

Legal and regulatory environment

- **Domestic regulatory differences:** single rules, deposit protection schemes
- **Legal and fiscal specifics:** tax systems, bankruptcy rules, credit reference schemes, consumer protection, collateral environment, insolvency rules

Customer behavior

- **Product differences:** product specifics such as interest rate fixation, fixed/floating issues, amortizing/bullet
- Differences in **language**, **culture** and **domestic conventions** (branch vs. online banking)

Bank specifics and structural aspects

- **IT legacy systems:** existence of numerous different IT systems without any (with low) integration chance
- **Domestic importance:** close relations to authorities / other banks (buyer of sovereign bonds, econ. "responsibility")

WHAT NEEDS TO BE DONE (POLITICAL AGENDA)

1. **Harmonization of laws, domestic regulation,** esp. with regard to insolvency and customer protection
2. **Finalization of banking union** as common rules set for capital, guarantee schemes, rec. & resolution
3. **Development of an overarching European industrial policy** for the banking sector

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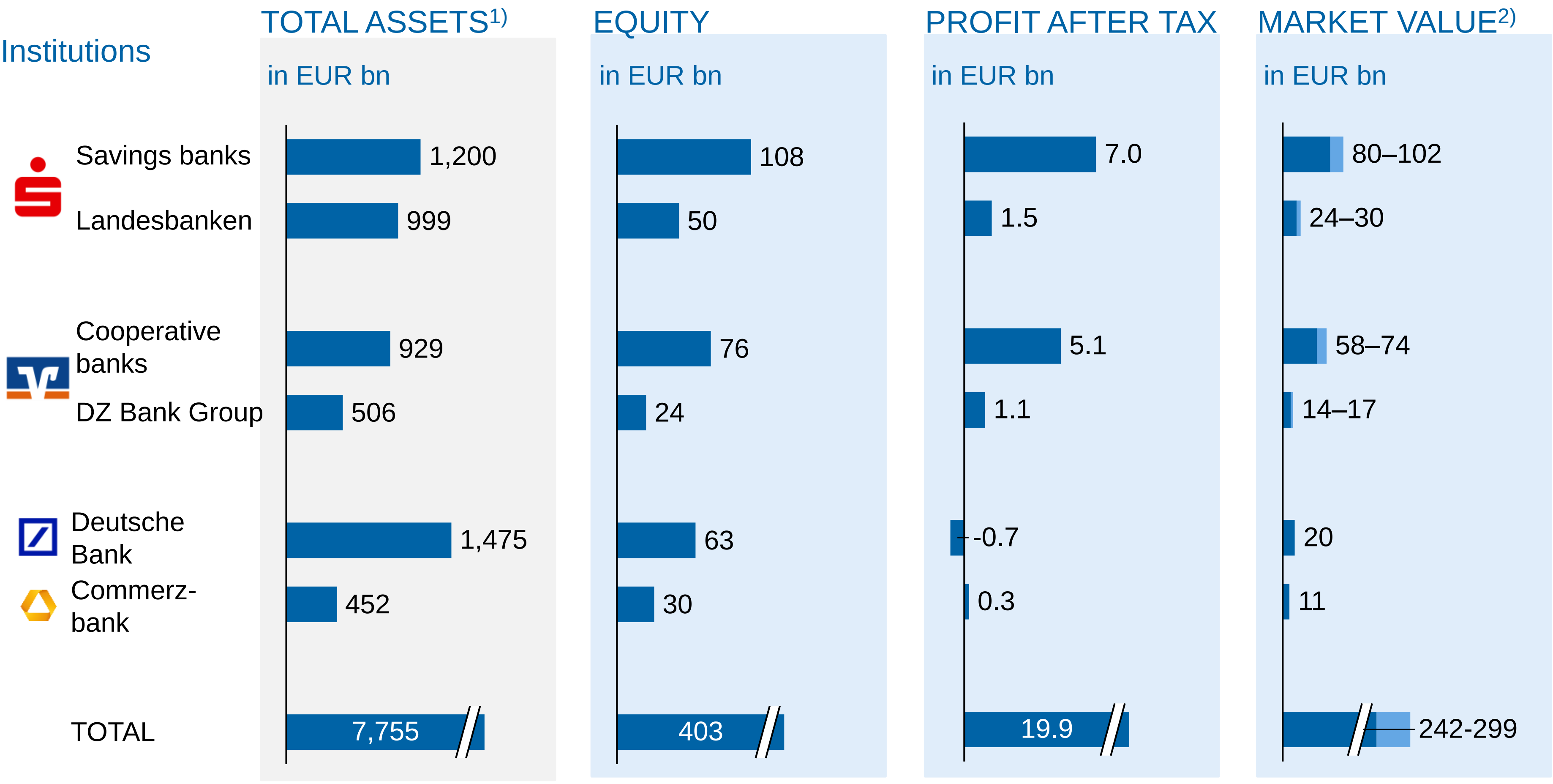
360° CONSULTING FOR FINANCIAL SERVICES—FROM THOUGHT TO ACTION

In Germany, decentralized associations are dominant and hold an exceptional position

Overview German banking sector 2017

Backup



1) Consolidated financial statements incl. foreign assets; 2) As of September 30, 2018; the market value of unlisted institutions was estimated on the basis of multiples of international; Source: Company reports, Deutsche Bundesbank, Thomson Reuters Datastream, zeb.research

Overview of sample and business cluster

Key figures 2017 (1/3)

Bank	Country	Cluster	Total assets in EUR bn	Post-tax RoE[1)]	Cost-income ratio[2)]	CET1 ratio	Leverage ratio[3)]
HSBC Holdings plc	GB	Universal bank	2,100.1	7.0%	64.9%	14.5%	5.9%
BNP Paribas S.A.	FR	Universal bank	1,960.3	8.4%	69.4%	11.9%	4.6%
Credit Agricole	FR	Retail bank	1,763.2	7.1%	63.6%	14.8%	5.6%
Deutsche Bank AG	DE	Universal bank	1,474.7	-1.2%	91.6%	14.8%	4.1%
Banco Santander, S.A.[4)]	ES	Retail bank	1,444.3	7.9%	54.1%	12.3%	5.3%
Barclays plc	GB	Universal bank	1,276.7	-1.5%	69.4%	13.3%	4.8%
Societe Generale S.A.	FR	Universal bank	1,275.1	6.2%	75.3%	11.6%	4.3%
Groupe BPCE	FR	Retail bank	1,259.9	5.4%	71.1%	15.3%	5.1%
Lloyds Banking Group plc	GB	Retail bank	914.9	8.1%	58.7%	14.1%	5.1%
ING Group	NL	Universal bank	846.2	9.8%	55.5%	14.7%	4.7%
UniCredit S.p.A.	IT	Retail bank	836.8	11.2%	67.9%	13.7%	5.7%
The Royal Bank of Scotland	GB	Universal bank	831.5	3.3%	80.9%	15.9%	5.8%
Intesa Sanpaolo S.p.A.	IT	Retail bank	796.9	13.9%	69.4%	13.3%	6.4%
Credit Suisse Group AG	CH	Universal bank	787.7	-2.2%	87.4%	13.5%	5.6%
UBS Group AG	CH	Universal bank	782.5	2.1%	77.6%	14.9%	5.8%
BBVA, S.A.	ES	Retail bank	690.1	8.8%	53.6%	11.7%	6.7%

All figures based on latest available reports (FY/ 9M/ 6M); 1) Post-tax profit to average total equity; 2) Operating expenses to total earnings; 3) Based on reported figures; 4) Banco Santander merged with Banco Popular in June 2017; Source: company reports, FitchConnect, zeb.research

Overview of sample and business cluster

Key figures 2017 (2/3)

Bank	Country	Cluster	Total assets in EUR bn	Post-tax RoE	Cost-income ratio	CET1 ratio	Leverage ratio
Groupe Credit Mutuel-CM11	FR	Retail bank	619.2	6.0%	61.9%	17.4%	6.6%
Cooperatieve Rabobank U.A.	NL	Universal bank	603.0	8.2%	71.2%	15.8%	6.0%
Nordea Bank AB	SE	Universal bank	581.6	9.4%	53.4%	19.5%	5.2%
Standard Chartered PLC	GB	Wholesale bank	552.5	2.8%	71.0%	13.6%	5.9%
DZ BANK AG	DE	Wholesale bank	505.6	4.9%	58.2%	13.9%	4.6%
Danske Bank AS	DK	Retail bank	475.4	13.7%	51.2%	17.6%	4.4%
Commerzbank AG	DE	Universal bank	452.5	0.8%	77.4%	14.9%	5.5%
ABN AMRO Group N.V.	NL	Universal bank	393.2	15.0%	59.6%	17.7%	4.0%
Sberbank of Russia	RU	Universal bank	392.2	24.0%	35.5%	11.4%[1)]	11.4%
CaixaBank, S.A.	ES	Retail bank	383.2	7.1%	64.9%	12.7%	5.5%
KBC Group NV	BE	Retail bank	292.3	15.4%	52.9%	16.5%	6.1%
Svenska Handelsbanken AB	SE	Retail bank	281.4	11.6%	45.5%	22.7%	4.6%
DNB ASA	NO	Universal bank	274.7	11.1%	43.5%	16.4%	7.2%
SEB Bank	SE	Universal bank	260.3	11.4%	47.8%	19.4%	5.2%
LBBW	DE	Wholesale bank	237.7	3.2%	74.5%	15.8%	5.0%
La Banque Postale	FR	Retail bank	231.5	8.0%	81.2%	13.1%	4.5%
Swedbank AB	SE	Retail bank	225.1	14.7%	39.3%	24.6%	5.2%

1) Tier 1 ratio; Source: company reports, FitchConnect, zeb.research

Overview of sample and business cluster

Key figures 2017 (3/3)

Bank	Country	Cluster	Total assets in EUR bn	Post-tax RoE	Cost-income ratio	CET1 ratio	Leverage ratio
Banco de Sabadell	ES	Retail bank	221.3	6.1%	64.6%	13.4%	5.0%
Erste Group Bank AG	AT	Retail bank	220.7	10.0%	67.3%	13.4%	6.5%
Bayerische Landesbank	DE	Wholesale bank	214.5	6.5%	64.6%	15.3%	4.0%
Bankia S.A.	ES	Retail bank	213.9	3.7%	65.2%	13.9%	5.9%
Raiffeisen Group	CH	Retail bank	194.6	6.1%	66.5%	15.9%	7.1%
Nykredit Realkredit A/S	DK	Retail bank	191.6	11.4%	31.7%	20.6%	4.7%
Bank VTB (JSC)	RU	Universal bank	188.2	9.1%	42.7%	13.1%[1)]	9.1%
Belfius Bank SA/NV	BE	Retail bank	168.0	6.5%	57.2%	16.1%	5.6%
NORD LB	DE	Wholesale bank	165.4	2.2%	46.6%	12.2%	3.4%
Banco BPM SpA	IT	Retail bank	161.2	26.6%	67.0%	12.4%	5.6%
Helaba Bank	DE	Wholesale bank	158.3	3.2%	75.4%	15.4%	4.9%
Zuercher Kantonalbank	CH	Universal bank	140.1	7.1%	66.2%	16.5%	6.8%
Monte dei Paschi di Siena	IT	Retail bank	139.2	-41.5%	74.9%	14.8%	6.0%
OP Financial Group	FI	Retail bank	137.2	8.0%	58.5%	20.1%	7.9%
Raiffeisen Bank International	AT	Universal bank	135.1	12.6%	62.0%	12.9%	6.1%
Unione di Banche Italiane	IT	Retail bank	127.4	7.5%	70.4%	11.6%	5.9%
Bank of Ireland	IE	Retail bank	122.6	8.3%	69.5%	15.8%	7.0%

1) Tier 1 ratio; Source: company reports, FitchConnect, zeb.research