Greek banks:
A challenging road ahead

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GET INVOLVED Annual Conference at the Bank of Greece

Friday, December 13, 2019

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Greek banks: A challenging road ahead

I. Difficult times ahead for international banking

- Low risk
- Yet low profitability dominates valuations today

II. Greek banks in recovery mode from a much worse crisis

- Focus is on NPE reduction, yet sources of profitability is the issue

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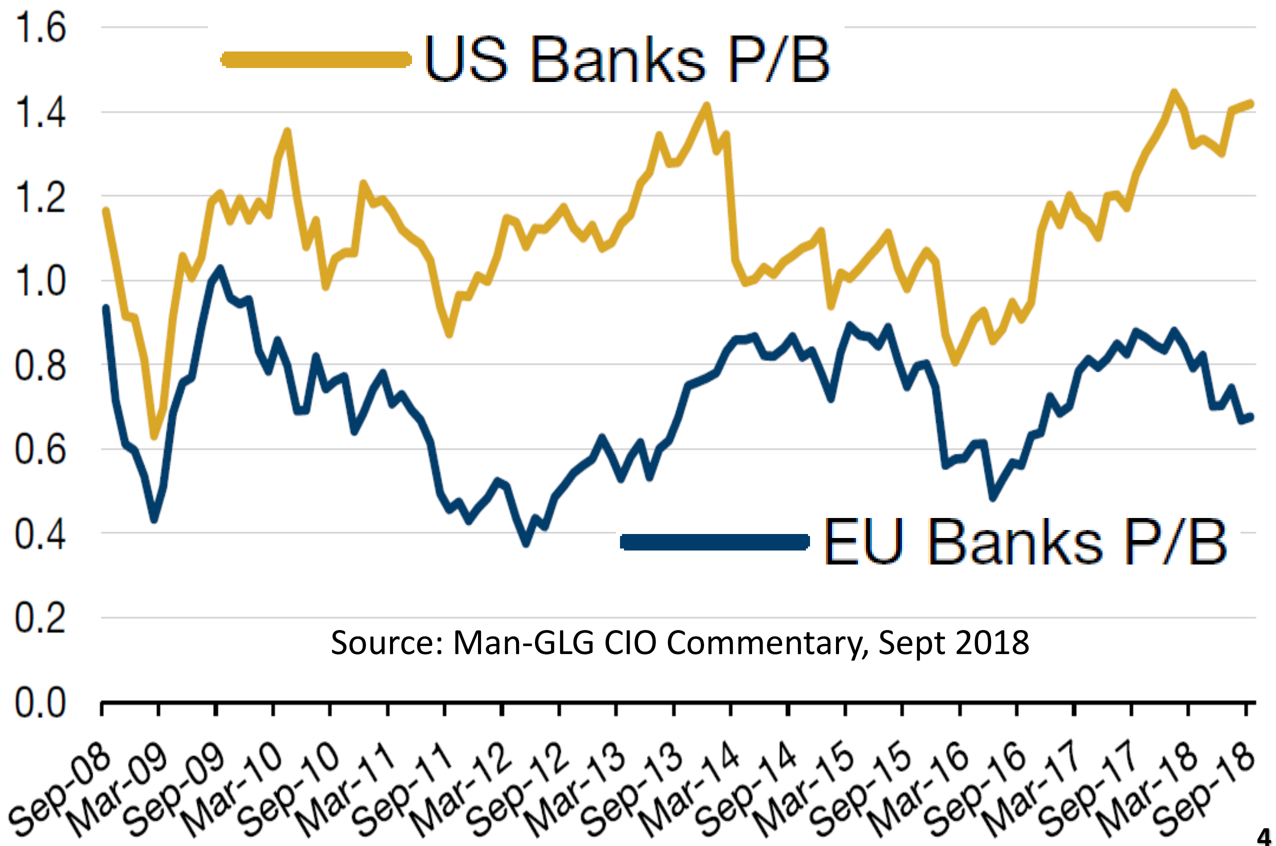
I. Depressed bank stock valuations everywhere

- ❑ Non-financial stocks in Europe perform strikingly better
- ❑ Compared to the US, Europe went through a second crisis with lower profitability, hence its bank stocks lagged behind US stocks
- ❑ Greek bank stock prices close to zero in early 2012 due to the PSI

I. European banks lag behind US banks in stock valuation

- ❑ Since the Great Financial Crisis of 2007-2009, Price–to–Book (P/B) ratios consistently below the US counterpart P/B ratios
- ❑ Today 21% of European banks have P/B > 1, compared to 81% in the US
- ❑ Two opposing forces on European bank valuations after 2007-2009:
  1) The negative force of low profitability
  2) The positive force of lower risk

- ❑ The negative force of profitability seems to have dominated valuations
- ❑ ROEs at 7% today compared to double digits a decade ago
- ❑ EBA worries banks' search for yield may increase risk taking



Source: Man-GLG CIO Commentary, Sept 2018

I. European banks today relative to 2007

- Balance sheets are now smaller and more robust (safer)
  - Asset size shrinks as credit growth declines and is negative for some time
  - Loans are now a larger fraction of their assets with NPLs down from €1 trillion in 2014 to €600bn in 2018
  - Liability side is stronger as share of deposits & core capital increase
- Regulation is now stricter: Basel III, biennial stress tests & annual SREP
  - Total core capital increased by ~40%
  - Risk weights increase in the denominator of the CAD ratio (although risk-weighted assets decline together with total assets)
  - In the top 20 banks, from approximately 8.2% Tier I CAD ratio in 2007 to ~ 13.8% Core Equity Tier I ratio in 2018, and from 3.6% leverage ratio in 2007 to 5.8% in 2018
- Profitability is lower as banks shy away from speculative trading and rely more on traditional lending activities. In the top 20 banks,
  - Total revenue declined -23% (Fees & commissions -22%, Trading Income -54%, whereas NII increased a bit to 12%)
  - Operating Expenses declined by less, -9%, and Cost-to-Income ratio increased from 55% to 62%
  - Hence Net Income down and ROE declined from above 20% to below 10%

I. European banks in the future

- Future risks remain contained - BREXIT risks (e.g. CCPs located in London) do not reverse this picture
- Yet profitability continues to be under pressure
  - Banks face even stricter regulation which affects profitability ↓
    - Pillar 2 of Basel III bites (P2R & P2G)
    - Basel IV in effect from 2022, fully loaded in 2027, expected impact of additional 5ppts on CAD ratio
    - G-SIBs face 16% CAD ratio & 6% leverage ratio (which rise to 18% & 6.75% in 2022)
    - EU Banking Union brings stricter provisioning rules on NPLs & MREL
  - Technology and new competitors bite on profitability
    - PSD2 puts pressure on fee income
    - Digital transformation brings competition from BIG Tech and need to invest in technology
  - An unusual environment of low interest rates, even negative rates
    - Difficult to earn profits when interest rates are low or negative

II.

I. Difficult times ahead for international banking

- Low risk
- Yet low profitability dominates valuations today

II. Greek banks in recovery mode from a much worse crisis

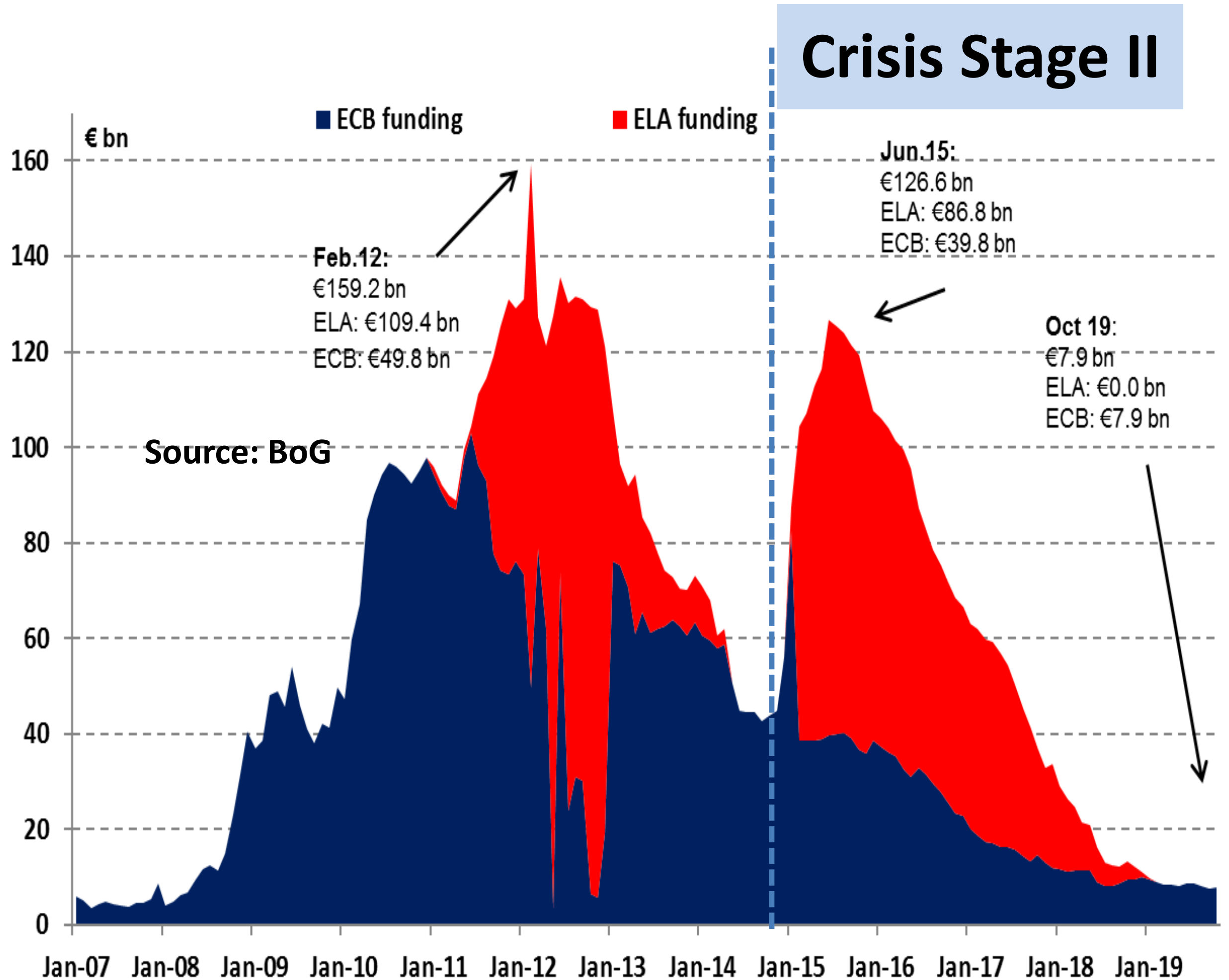
- Focus is on NPE reduction, yet sources of profitability is the issue

II. The special Greek banking challenges

- ❑ Greek banks have been in crisis for long time, losing twice ~100% of their stock value,
  - once in February 2012 (due to the PSI)
  - and then in November 2015 due to the BRAVADO recession
- ❑ The Greek political irony: Center-right governments nationalized the banks with borrowed (mainly) European funds, and subsequently a leftist government privatized them
- ❑ Now banks are pressed to quickly shed their NPEs under two major constraints:
  1) Regulatory constraint: Capital reduction due to NPE reduction may hit the regulatory CET1 lower bound
  2) Private Investor constraint: Profitability reduction due to higher provisioning may become negative and trigger DTC
- ❑ DTC is the little-advertised success story of the Fall 2014 government
- ❑ Risks are contained yet profitability under pressure due to stricter regulation, technology and competition

II. The two stages of the Greek crisis are revealed in the Eurosystem dependence of domestic banks

- Prior to the Int/nal crisis little use of ECB borrowing
- Lehman episode froze the interbank market, raising borrowing to €55bn.
- Greek crisis raised dependence to above €100bn.
- Since July 2011 Emergency Liquidity Assistance (ELA)
  - Max value in 11/2012
  - Down to ZERO in 11/2014
  - Back to €87bn in 6/2015
  - Oct 2019: ELA zero (10th consecutive month), €7.9bn in ECB funding, €23.3bn in interbank funding (Aug-15: €6.3 bn)



- ELA borrowing costs 1.5% more due to low quality collateral

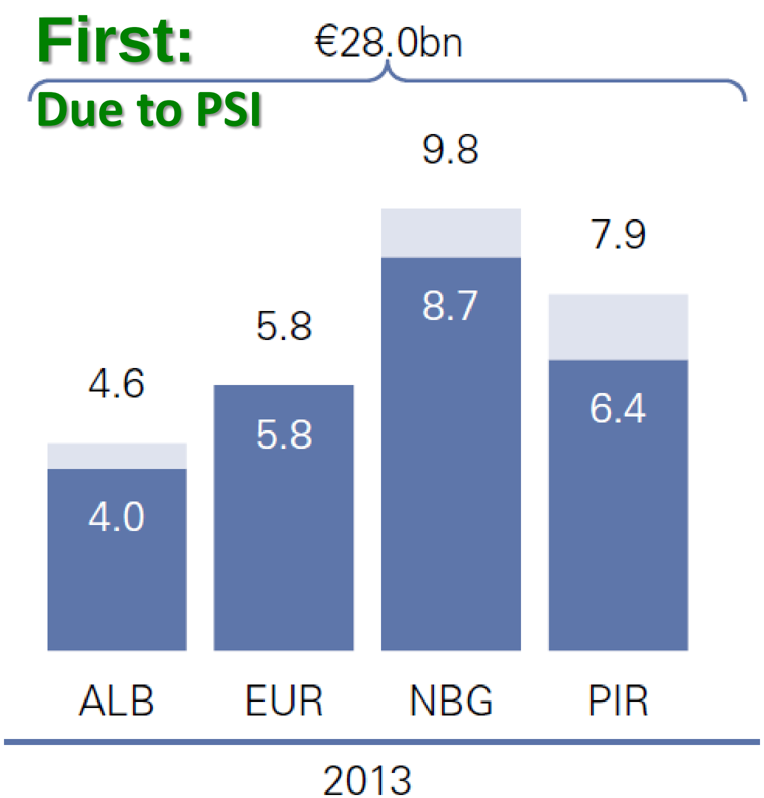
II. Bank troubles began after the 2012 PSI

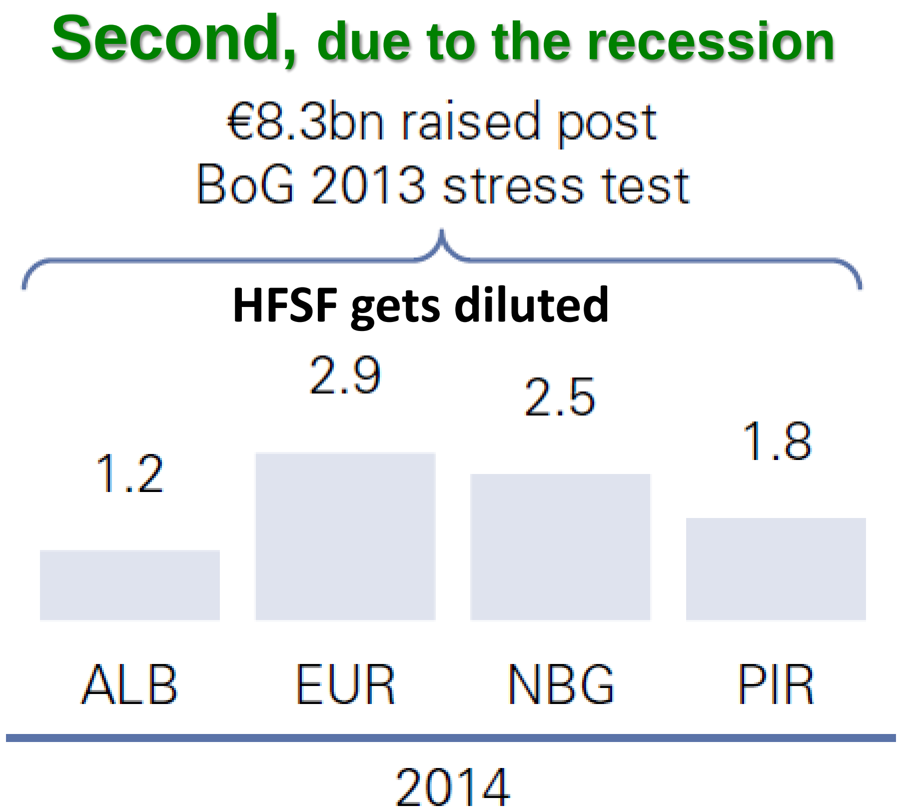
Table II.1 Impairment losses on Greek government bonds (GGBs) and state-related loans under the PSI (million euro) **: Average 78% NPV loss**

Banks	Face amount of GGBs (1)	Face amount of state - related loans (2)	Total face amount (3)=(1)+(2)	PSI loss of GGBs (4)	PSI loss of state - related loans (5)	Total gross PSI loss (6)=(4)+(5)	Total gross PSI loss / Core Tier 1 (Dec 2011) (%) (7)	Total gross PSI loss / Total Assets (Dec 2011) (%) (8)
NBG	13,748	1,001	14,749	10,985	751	11,735	161.0	11.0
Eurobank	7,001	335	7,336	5,517	264	5,781	164.5	7.5
Alpha	3,898	2,145	6,043	3,087	1,699	4,786	105.7	8.1
Piraeus	7,063	280	7,343	5,686	225	5,911	226.0	12.0
Emporiki	351	415	766	270	320	590	40.3	2.7
ATEbank	5,164	608	5,772	3,873	456	4,329	1,144.2	17.1
Postbank	4,197	175	4,372	3,306	138	3,444	618.3	24.8
Millennium	185	0	185	137	0	137	29.0	2.2
Geniki	384	7	391	287	5	292	78.1	8.9
Attica	199	0	199	142	0	142	38.8	3.4
Probank	415	0	415	295	0	295	105.1	8.7
New Proton[1]	934	0	934	216	0	216	378.8	12.6
FBB	70	0	70	49	0	49	33.8	3.1
Panellinia	34	0	34	26	0	26	31.7	3.5
Total	**43,643**	**4,966**	**48,609**	**33,876**	**3,857**	**37,733**	**170.6**	**10.1**

[1] For New Proton Bank, part of the impact has been funded through the resolution of Proton Bank

II. Two recapitalizations enable Greek banks to pass the Europe-wide AQR and Stress tests of October 2014





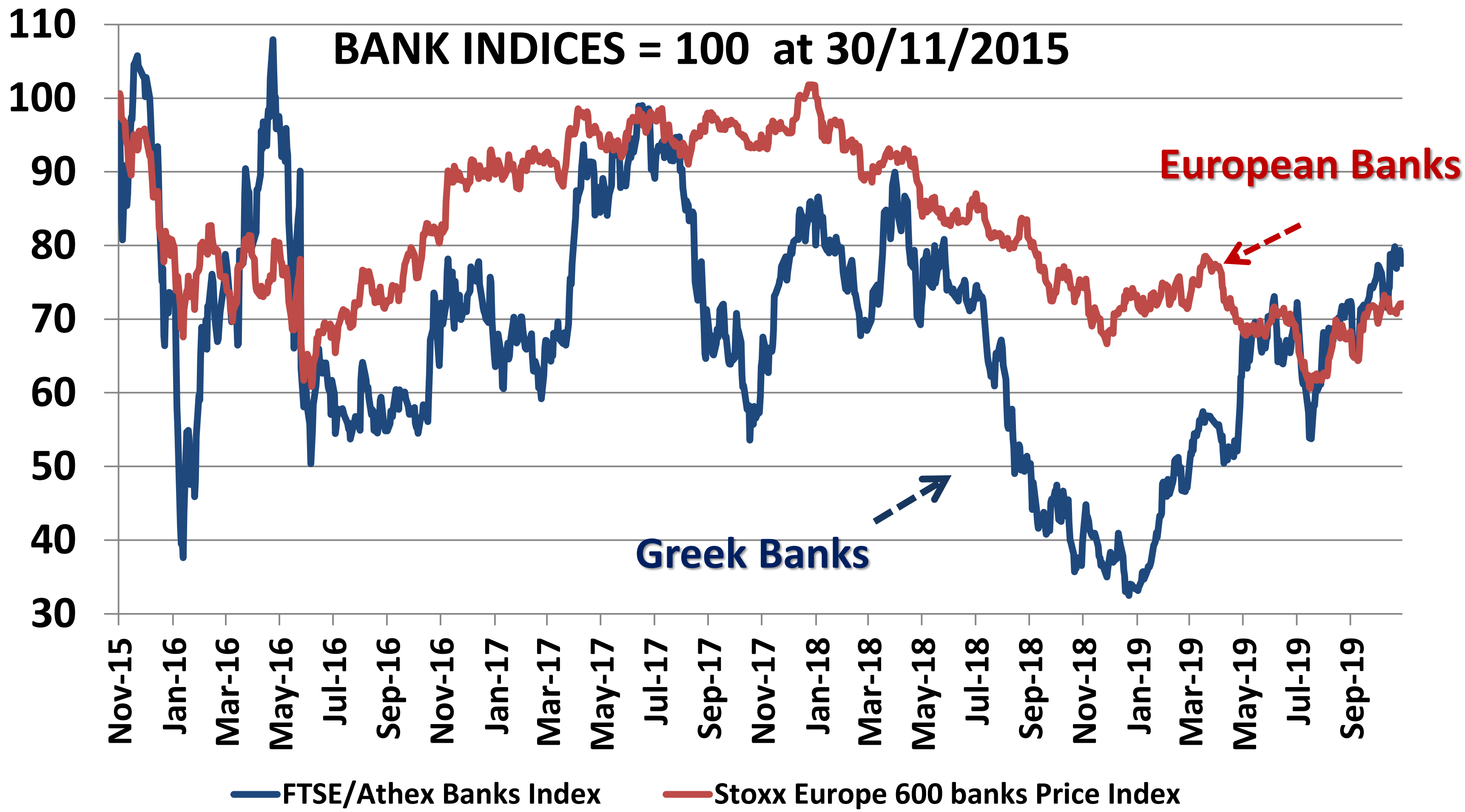
- The two recaps brought a total of €36,3bn in the 4 systemic banks
- In November 2014, SSM takes over supervision having conducted an Asset Quality Review and Stress Tests on 130 large European banks
- Thanks to DTC, Greek banks avoid a new (third) recapitalization

II. Private investors take over the banks in Nov 2015

- ❑ Bravado Recession brings the 2016 stress tests one year early
- ❑ Another AQR in a year
- ❑ Plus stricter CET1 target ratios relative to 2014
- ❑ Total requirement of €14.4 bn

- ❑ Plus banks were required to find private investors to cover the €4.4 capital shortfall of the baseline stress scenario – one bank barely failed
- ❑ Bank stocks at zero for a second time
- ❑ Hedge funds, which had entered in April 2014 and lost their money, decided to re-enter and acquire control of the banks
- ❑ HFSF ownership shrank to: Eurobank 2.4% , Alpha 11%, Piraeus 26.4%, NBG 40.4%

II. A roller coaster since November 2015



- After the third recapitalization, the Greek bank index fluctuated, declining even to 30%!
- After the May 2019 European elections prices are rising up to 80%

II. The great challenge of non-performing loans & exposures

Group level, Sept-2019	Eurobank	NBG	Alpha	Piraeus	Total
1. Total Loans - gross (€bn)	44.5	35.6	49.1	49.8	179.0
2. Non-Performing Exposures (€bn)	13.8	12.2	22.4	25.7	74.0
3. NPE ratio (%)	31.1%	34.2%	45.5%	51.6%	41.3%
4. Non-Performing Loans (€bn)	11.1	8.7	14.7	17.0	51.5
5. NPL ratio (%)	25.0%	24.4%	30.0%	34.1%	28.8%
6. Provisions (€bn)	7.6	6.6	9.8	11.8	35.8
7. Regulatory Capital CET1 (€bn)	6.8	6.2	8.7	6.7	28.3
8. Texas Ratio 1 = 4/(6+7)	77.4%	67.7%	79.7%	92.0%	80.3%
9. Texas Ratio 2 = 2/(6+7)	96.3%	94.8%	121.0%	139.2%	115.5%
10. CET1/RWAs	16.3%	16.4%	18.0%	15.2%	16.3%

Notes:

1. In the theoretical stress situation in which all NPL value is lost, all of four systemic banks survive because they all have a **Texas Ratio less than unity**. For NPEs, those ratios are larger than unity in two of the four banks.
2. About **55% of regulatory capital is DTC** and without it, no bank survives.
3. In January 2018, new IFRS-9 rules impose additional capital needs over the following five years, to the tune of €5.9bn. However this is gradually phased in over 5 years
4. 2018 stress tests did not result in recapitalization of the Greek banks

Source: *Calculations based on banks' published data*

II. An Ambitious NPE reduction plan

- HFSF HERCULES SPV scheme promises facilitation & acceleration of the effort
- NPE reduction will absorb capital

	NPEs (% of gross loans, million euro)				
Bank level	2018A	2019E	2020E	2021E	2022E
Eurobank[1]	37%	16%	13%	9%	
	16,700	6,400	5,100	3,400	
NBG	40%	32%	26%	14%	5%
	15,400	11,100	8,900	4,300	1,600
Alpha	n/av	n/av	20%	n/av	<10%
	21,700	18,500	7,000[2]	n/av	3,500
Piraeus	n/av	n/av	n/av	23%	
	26,400	22,900	16,500	11,300	
TOTAL	80,200	58,900	37,500	n/av	n/av
Note: Estimates and SSM submissions for 2019-22					

1. Group data only for Eurobank. For the remaining three banks, data refers to the solo bank without its subsidiaries.
2. Alpha's targeted NPE stock of €7bn in 2020E does not take into account organic NPE reduction.

II. September 2019 regulatory capital of Greek systemic banks

	Eurobank	NBG	Alpha	Piraeus	Total
1. Assets (€bn)	64.0	65.8	62.7	59.1	251.7
2. Risk Weighted Assets (€bn)	41.6	37.9	48.1	46.3	173.9
3. RWAs / Assets (%)	65.0%	57.6%	76.7%	78.3%	69.1%
4. Equity (€bn)	6.6[2]	5.9	8.5	5.6[1]	26.6
5. Tangible Equity (€bn)	6.1[2]	5.7	8.0	5.3[1]	25.2
6. Deferred Tax Credit (€bn)	3.9	4.5	3.2	3.9	15.4
7. DTC/CET1 Capital	57.0%	72.5%	36.9%	58.6%	54.6%
8. Regulatory Capital CET1 (€bn)	6.8[2]	6.2	8.7	6.7	28.3
9. CET1/RWAs	16.3%[2]	16.4%	18.0%	15.2%	16.3%

Notes: Tangible Equity ≡ Shareholders' Equity – Goodwill – Intangible Assets

a) Piraeus bank owns Conditional Convertible bonds (CoCos) €2,040 mn.

b) In 2018 Eurobank paid the Greek State its preferred stocks of €950 mn. and issued an equal amount of Tier II bonds, which were bought by the Greek State. Also in 2019 it merged with Grivalia, adding to its equity base €0.9bn

c) Regulatory equity (Core Equity Tier I ή CET1) may turn out to be smaller than Equity capital due to regulatory filters and other changes brought by capital regulation CRR 573/2013.

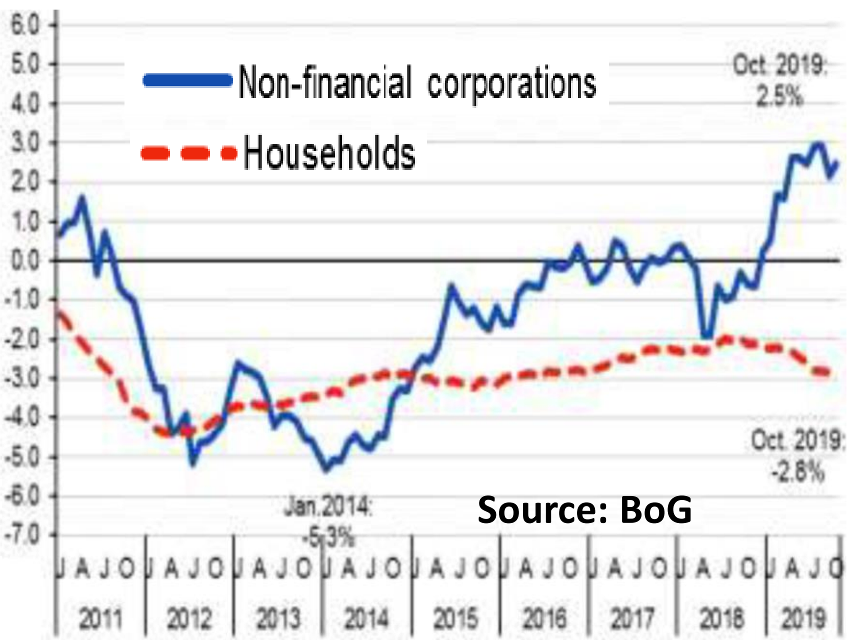
Source: *Calculations are based on official published data by the banks.*

1. *Does not include CoCos (€2.0bn)*
2. *Benefited by the Grivalia merger*

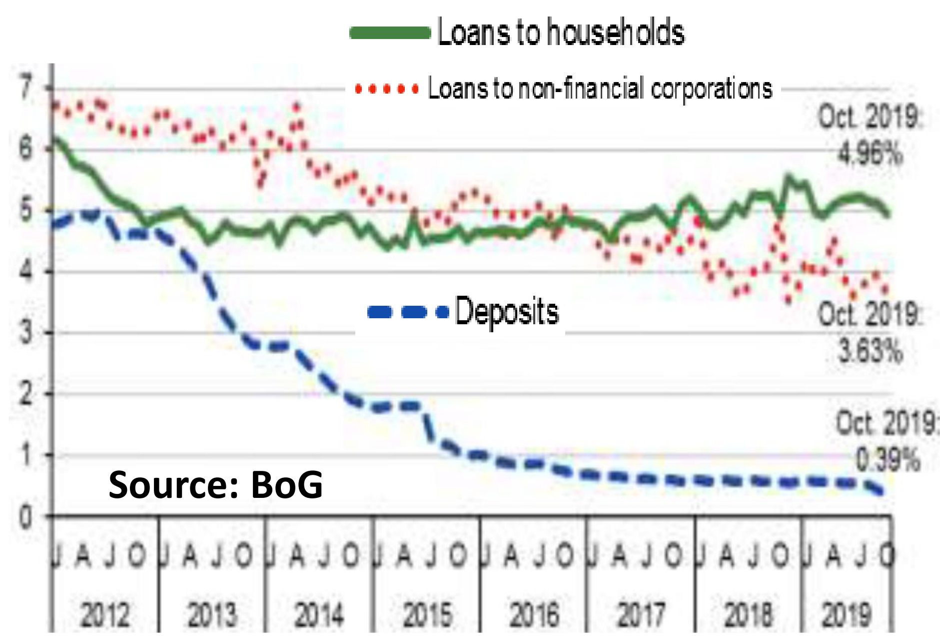
II. Signs of improvement in corporate credit conditions

- Credit growth for non-financial corporations turns positive in 2019, following 8 years of continuous decline
- Loan rates to non-financial corporations on a downward trend since 2012
- Yet household credit continues to shrink and loan rates remain steady
- Bank profitability is squeezed due to NPLs, regulation, IT competition in retail services

Credit growth (yoy)



Interest rates



II. Greek banks in the future

- Future risks remain contained
- Yet profitability continues to be under pressure
  - Banks face even stricter regulation which affects profitability negatively
    - Pillar 2 of Basel III bites
    - Basel IV in effect from 2022, fully loaded in 2027, expected impact of additional 5ppts on CAD ratios
    - EU Banking Union brings stricter provisioning rules on NPLs
  - Technology and new competitors bite on profitability
    - PSD2 puts pressure on fee income
    - Digital transformation brings competition from Fin Tech or Big Tech and the need to invest in technology
  - Negative interest rates pressure profitability

Summary

- The Greek financial sector was a prime victim of the Greek crisis
  - First the State “defaulted” on its bonds and banks’ capital was wiped out, and then the private sector borrowers began defaulting on their loans
  - For new lending to pick up momentum, NPEs have to decline
- The real economy will pick up
  - With 15% - 20% rates of investment growth & FDI
  - With an adequate flow of new credit
- Greek banks like their European counterparts face a profitability challenge and stiff competition from Big Tech

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