

Greece Banks

Attractive Valuations, But Macro Weakness Weighs on Earnings

- Attractive valuations, But Earnings Headwinds** – Greek banks have corrected c.50% YTD and trade at 0.2x 1Y fwd. cons. P/B with 2021E RoE of 4.3%. 1Q20 results showed progress on NPE reductions. However, prolonged GDP drag from weak tourism sector is likely to pressure earnings, increase cash collection risks and possibly delay securitizations. We remain Neutral on the sector, but have a relative preference for Eurobank owing to its low NPE ratio, high coverage & better progress on NPE reduction.
- Prolonged GDP Weakness** – Greece has been relatively less impacted than other Euro countries by COVID-19 (fewer confirmed cases/deaths). However, it remains highly reliant on tourism (c.20% of GDP, direct/indirect). With international tourism flows likely to suffer, our economists believe Greece could suffer a longer period of below-normal activity, extending probably until year-end, if not into 2021. Citi expects GDP to contract c.8% in 2020, followed by rebound of c.7% in 2021, with activity returning to pre-crisis levels by 4Q21. Medium-term growth remains weak, unlikely to exceed 1% pa, given adverse demographics and very low household savings ([link](#)).
- Earnings Headwinds** – Banks are guiding flattish to mid-single digit decline in NII over 2020 and have a cautious tone on fee growth amid weak corporate sentiment. Stronger trading gains supported earnings in 1Q20, but these are unlikely to sustain through 2020. Banks are focusing on cost efficiencies to support core pre-provision income. Cost of risk (CoR) remains the biggest swing, with banks booking large collective ECL charges in 1Q20. Prolonged GDP weakness could keep CoR elevated.
- Securitizations, NPE Collection Risks** – We appreciate banks' progress on NPE securitizations in 1Q20, led by Eurobanks' Project Cairo (c.€7.5bn) expected closure in 2Q20. However, heightened uncertainty in 2020, could lead to delays in planned NPE reductions. Read across from NPL servicers/purchasers suggests near-term slowdown in NPL cash collections ([link](#)). Moreover, NPL collections also positively correlated to economic cycle (especially unemployment).
- Transfer Coverage, Earnings Revision. Remain Neutral/High Risk on all names** – With this report, we transfer coverage of Alpha Bank to Ronit Ghose and Eurobank, NBG and Piraeus to Kaiwan Master. Model updates include: 2019-1Q20 reported numbers, lower 2020-21E earnings (higher CoR, lower revenues) and higher CoE (13-15%). We have a Neutral/High Risk (2H) rating on all four Greek banks. TPs cut on the changes above and moving from a DDM to GGM valuation approach as we don't expect any dividend payments for the foreseeable future.

Kaiwan Master^{AC}

+44-20-7986-0241

kaiwan.hoshang.master@citi.com

Ronit Ghose, CFA^{AC}

+44-20-7986-4028

ronit.ghose@citi.com

Maria Semikhatova, CFA

+44-20-7986-4294

maria.semikhatova@citi.com

Ronak S Shah

+44-20-7986-3960

ronak.sharad.shah@citi.com

Company	Ticker	Currency	Price	Date & Time	Rating		Target Price		Div Yld (%)	ETR (%)	Last Rpt Year	Current Fiscal Year		Next Fiscal Year	
					Old	New	Old	New				EPS		EPS	
					Old	New	Old	New				Old	New	Old	New
Alpha Bank	ACBr.AT	€	0.71	22 Jun 17:20	2H	2H	1.90	0.80	0.0	13.1	Dec-19	0.17	0.01	0.21	0.13
Eurobank	EURBr.AT	€	0.43	22 Jun 17:20	2H	2H	1.00	0.50	0.0	17.0	Dec-19	0.10	0.07	0.11	0.09
National Bank of Greece	NBGr.AT	€	1.37	22 Jun 17:20	2H	2H	2.80	1.50	0.0	9.5	Dec-19	0.25	0.53	0.29	0.25
Piraeus Bank	BOPr.AT	€	1.69	22 Jun 17:20	2H	2H	3.30	1.90	0.0	12.4	Dec-19	0.34	-0.09	0.48	0.38

1 = Buy, 2 = Neutral, 3 = Sell, H = High Risk

Source: Citi Research

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Certain products (not inconsistent with the author's published research) are available only on Citi's portals.



See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Certain products (not inconsistent with the author's published research) are available only on Citi's portals.

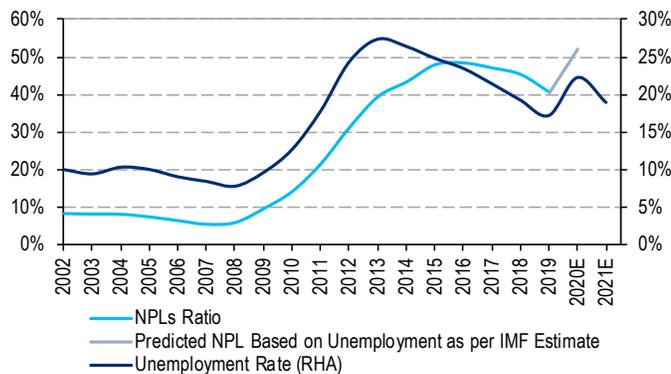
Figure 1. Greece: Economic Forecasts – Annual, 2019-24F

		2019	Forecast				
			2020F	2021F	2022F	2023F	2024F
Real GDP	YY	1.9	-7.8	7.3	2.3	1.5	1.5
Final Domestic Demand	YY	1.5	-4.2	6.7	1.8	1.2	1.2
Private Consumption	YY	0.8	-4.9	1.5	1.8	1.2	1.2
Public Consumption	YY	2.2	-0.2	0.5	0.6	0.3	0.3
Fixed Investment	YY	5.0	-7.7	10.2	3.9	2.9	2.6
Exports of Goods and Services	YY	4.9	-6.0	9.4	4.7	3.9	3.3
Imports of Goods and Services	YY	2.5	-7.2	4.8	3.2	3.3	2.6
HICP	YY	0.5	-0.2	0.4	0.5	0.7	0.9
Unemployment Rate	%	17.3	19.0	18.1	15.8	14.9	14.1
Current Account Balance	€ bn	-3.4	-2.4	-2.0	-1.6	-1.2	-1.0
	% GDP	-1.8	-1.4	-1.3	-1.0	-0.8	-0.7
General Government Balance	€ bn	2.5	-7.1	-2.2	-1.0	-1.0	-0.9
	% GDP	1.3	-4.1	-1.2	-0.5	-0.5	-0.5
Primary Balance	% GDP	4.3	-1.2	1.6	2.0	2.0	2.0

F Forecast. Percentage changes unless indicated. Link to report: [European Economic Forecast Monthly - May 2020](#)

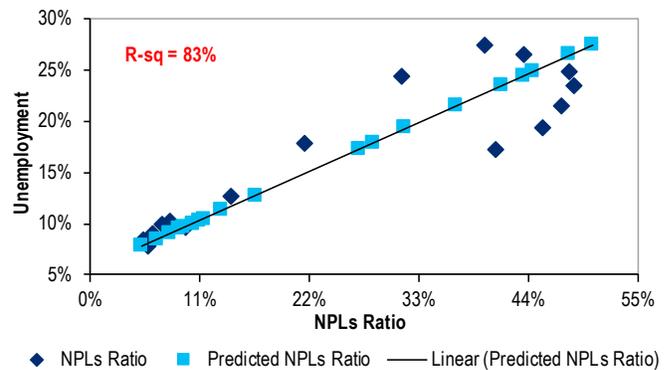
Sources: Bank of Greece, ECB, Elstat, Eurostat and Citi Research forecasts

Figure 2. Greece – Gross NPL Ratio vs. Unemployment Rate...



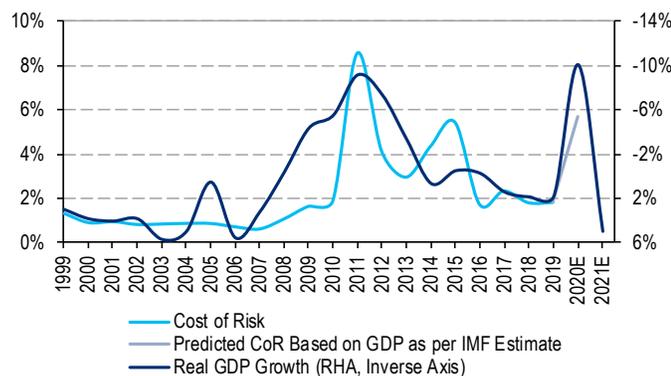
Source: Bank of Greece, IMF, World Bank, Citi Research Estimates

Figure 3. ...Linear Fit of Changes Greece



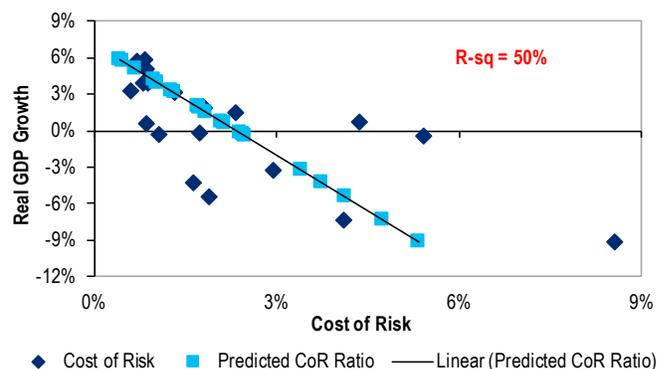
* Regression based on annual data from 2002-2019
Source: Bank of Greece, IMF, World Bank, Citi Research Estimates

Figure 4. Greece – Cost of Risk vs. GDP Growth Rate...



Source: IMF, World Bank, Company Reports, Citi Research Estimates

Figure 5. ...Linear Fit of Changes Greece



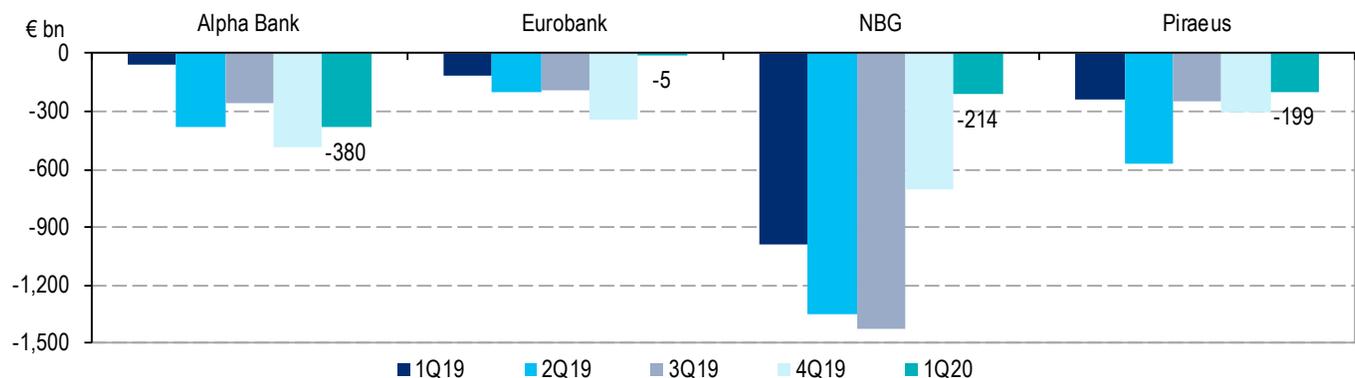
* Regression based on annual data from 1999-2019
Source: IMF, World Bank, Company Reports, Citi Research Estimates

Figure 6. Greek Banks – Key Ratios, 1Q20

As of 1Q20 Unless otherwise stated	Alpha Bank	Eurobank	National Bank of Greece	Piraeus Bank
Asset Quality				
Gross NPE ratio	44%	29%	31%	50%
NPE coverage	44%	55%	56%	46%
Net NPE ratio	24%	13%	14%	27%
Net NPEs % CET1 capital	241%	88%	109%	225%
Capital Ratios				
CET1 ratio (phased-in)	16.5%	15.4%	15.5%	13.2%
Total capital ratio (phased-in)	17.5%	17.8%	16.4%	15.2%
Total capital buffer	6.0%	6.8%	4.9%	0.9%
DTC benefit as % of shareholders' equity	35%	59%	91%	71%
1Q20 Pro forma Post Securitization				
NPE ratio	na	15.6%	na	na
NPE coverage	na	59.6%	na	na
CET1 ratio (phased-in)	na	12.1%	na	na
Total capital ratio (phased-in)	na	14.4%	na	na
12m Fwd. Cons. P/B (21 June 2020)	0.15x	0.28x	0.23x	0.13x

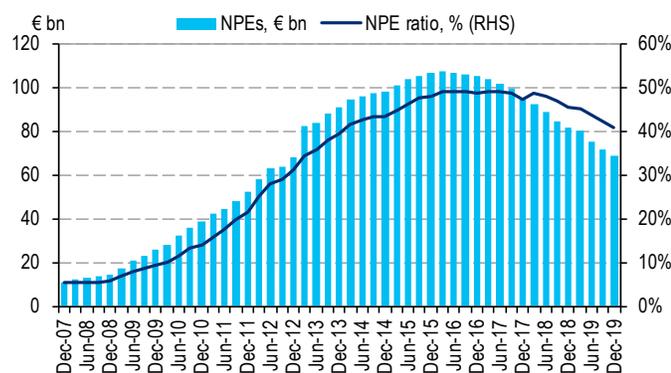
Note: Capital buffers calculated as total capital ratio minus overall capital requirements. Excludes any additional ECB flexibility provided in reaction to COVID-19 during 2Q20.
Source: Company Reports, DataStream IBES, Citi Research Estimates

Figure 7. Greek Banks – New NPE Formation, 1Q19-1Q20



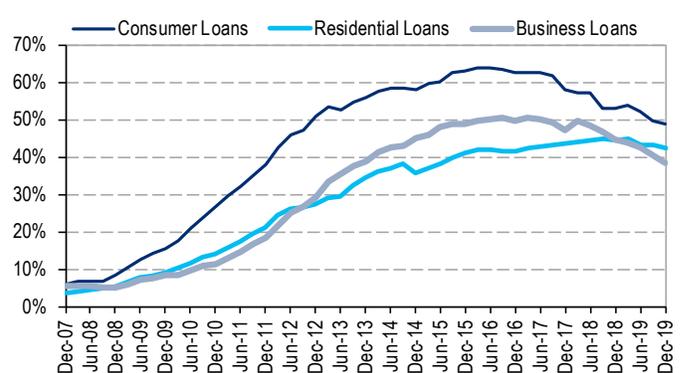
Source: Company Reports, Citi Research

Figure 8. Greek Banks – NPEs and NPE Ratio, 2008-19



Source: Bank of Greece, Citi Research

Figure 9. Greek Banks – NPE Ratio by Segment



Source: Bank of Greece, Citi Research

Figure 10. Greek Banks Under Coverage – NPE Sale and Securitizations

Bank	Project	Type	GBV (€ bn)	Closing Date	Post-Securitization Gross NPE ratio	Comments
Alpha Bank	Mars	Secured corporate & unsecured consumer	0.3	4Q17-1Q18		
	Venus	Unsecured consumer & small business	0.9	1Q18		
	Jupiter	SME secured by real estate	1.0	4Q18		
	Mercury	Unsecured SB and consumer	1.1	4Q18		
	Neptune	SME secured by real estate	1.8	1Q20		Held for sale
	Galaxy	Retail secured portfolios	7.6	2H20-1H21		
	Galaxy	Wholesale portfolio	3.0	2H20-1H21	<23%	
Eurobank	Eclipse	Unsecured consumer	0.6	4Q17		
	Zenith	Unsecured consumer	1.0	4Q18		
	Pillar	Securitization of residential mortgages	2.0	2019		
	Cairo	Securitization of corporate and retail loans	7.4	1H20	15.6%	
National Bank of Greece	Earth	Unsecured retail and small business	0.4	2Q18		
	Symbol	Secured SBL/SME	0.8	2019		
	Mirror	Unsecured retail, SB & small SMEs	1.0	2019		
	Sale	Secured SBL / corporate & SMEs	0.8	2019		
	Solar	SME loans	0.3	2020-22		
	Securitization	Residential mortgages & consumer/SBL	3.0	2020-22		
	Sale	Consumer, SBL and corporate	0.7	2020-22		
Piraeus Bank	Arctos	Unsecured personal loans and credit cards	0.4	4Q18		
	Amoeba	Secured large SME and corporate	1.4	4Q18		
	Nemo	Secured shipping loans	0.5	1H19		
	Iris	Personal loans & credit cards, SB loans, leasing exposures	0.6	3Q19		Held for sale
	Trinity	Secured large corporate	0.3	4Q19		Held for sale
	Phoenix	Residential mortgage	2.0	4Q20-1Q21		
	Vega	Commercial & residential portfolio	5.0	4Q20-1Q21		

Source: Company Reports, Citi Research

Company Focus

Alpha Bank A E (ACBr.AT) Strong Capital, But Macro Weighs on Earnings

- Target Price Change
- Estimate Change

Maria Semikhatova, CFA

+44-20-7986-4294
maria.semikhatova@citi.com

Ronit Ghose, CFA^{AC}

+44-20-7986-4028
ronit.ghose@citi.com

Neutral/High Risk

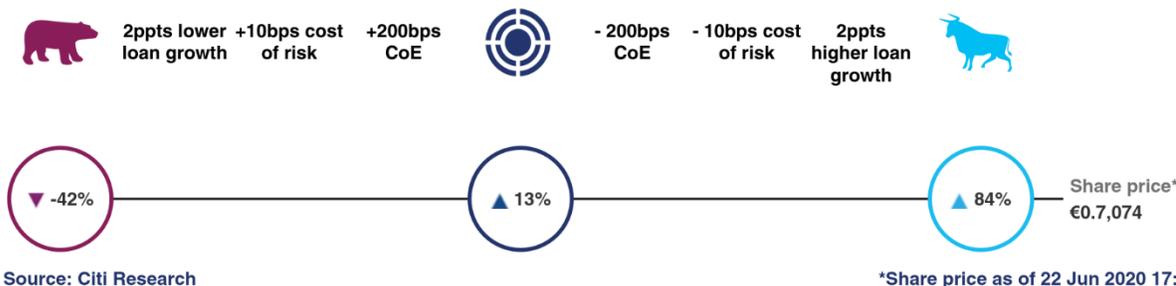
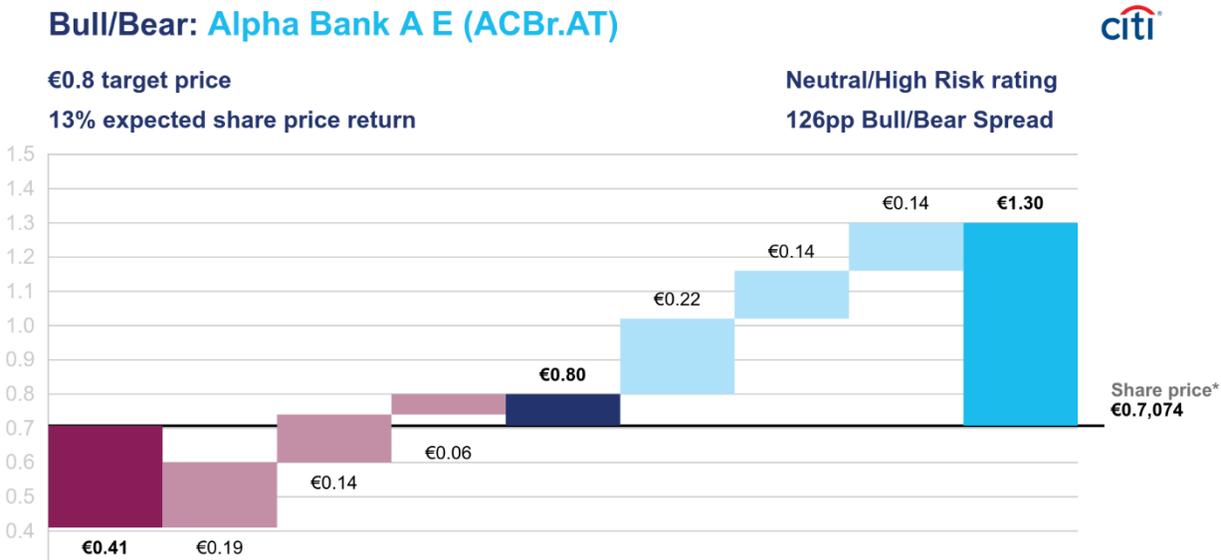
Price (22 Jun 20 17:20)	€0.71
Target price	€0.80
from €1.90	
Market Cap	€1,096M
	US\$1,225M
Expected share price return	12.7%
Expected dividend yield	0.0%
Expected total return	12.7%

- **1Q20 Results Trend** – Alpha reported a net loss from continuing operations of €11bn in 1Q20, dragged largely by elevated impairments. Core PPI increased 13% qoq backed by continued focus on cost initiatives (-26% qoq) despite revenues softening -7% qoq. NII declined marginally (-1.5% qoq) affected by lower contribution from loans and calendar effects. 1Q20 cost of risk (CoR) spiked to 2.5% or €307m, which includes €120m prudential Covid-19 provisions.
- **Asset Quality** – Stock of NPEs in Greece declined by €0.4bn qoq in 1Q20, driven by negative NPE formation (€0.38bn) and write-offs (€0.02bn). Domestic organic NPE formation was negative across segments. NPE ratio declined in 1Q20 to 43.5% (vs. 4Q19: 44.8%). The bank has initiated the hive-down of its Galaxy securitization in 2Q20 and targets completion by 4Q20. Focus for 2020 perimeter ranges from €7.5bn to €10bn (retail €7.6bn, wholesale €3bn).
- **Covid-19 Impact on Loans** – Nearly 30% of Alpha's performing loan book is to sectors significantly affected by Covid. These include hospitality, transportation, construction, and wholesale & retail. Additional 30% to sectors affected modestly (i.e. real estate, energy, agri-business, industry, consumer loans). Notably, Alpha has not witnessed any tangible impact from Covid-19 yet, but uncertainty persists. Govt. support measures could help mitigate some risks with c.18% exposures in most affected industries currently under payment moratoria.
- **Strongest Capital** – Alpha has the highest CET1 ratio amongst Greek banks (1Q: 16.5%) and low proportion of DTC benefit (c.35% % of equity). In 1Q20, CET1 ratio dropped from 17.9% to 16.5%, led by phasing of IFRS9, Basel III amortization, other DTA (-77bps) and FVOCI (-53bps). Alpha also issued €500m tier 2 capital in 1Q20, which boosted total capital ratio by +104bps to 17.5%, well above SREP requirement of 11.5%. FL CET1 ratio at 14.0% (-90bps qoq).
- **2020 Guidance** – NII likely flattish, with rise in credit drawdowns (2Q20) and lower TD rates, offset by lower income on GGB's and non-performing exposure. Fees down 5-7% from lower transactional activity (reduced tourist arrivals, lower asset mgmt.). Recurring opex down c.4% and CoR of 180-190bps in 2020.
- **Reiterate Neutral/High Risk** – Alpha's share price has declined 63% YTD and trades at 0.14x 1Y fwd. P/B. We like Alpha's strong capital (1Q20 CAR buffer 6.0%) and low share of DTC. But rise in macro uncertainty, coupled with Alpha's high NPE ratio (1Q: 43.5%), could pose a challenge to NPE reductions. We revise our 2020-21E earnings -92% & -39%, largely due to higher CoR of 2.27% and 1.83% respectively (revenues c.+2%, opex flat). We have Neutral/High Risk rating with EUR0.80 target using the GGM approach (2021E RoE 2.4%, CoE 13.6%, growth 0%). We transfer coverage of Alpha Bank to Ronit Ghose.

Alpha Bank A E (EUR)

Year to 31 Dec	2018A	2019A	2020E	2021E	2022E
Net Income (€M)	53.1	97.0	19.9	200.6	267.4
Diluted EPS (€)	0.03	0.06	0.01	0.13	0.17
Diluted EPS (Old) (€)	0.03	0.17	0.17	0.21	na
PE (x)	20.6	11.3	55.0	5.5	4.1
P/BV (x)	0.1	0.1	0.1	0.1	0.1
DPS (€)	0.00	0.00	0.00	0.00	0.00
Net Div Yield (%)	na	na	na	na	na
ROE (%)	0.6	1.2	0.2	2.4	3.1

Bull/Bear: Alpha Bank A E (ACBr.AT)



- Bull Scenario (€1.3)**
- 2ppts higher loan growth
 - -10bps loan loss ratio (cost of risk)
 - -200bps cost of equity (CoE)

- Target Scenario (€0.8)**
- Average -1% loan growth 2020-22E
 - Average 1.9% cost of risk 2020-22E
 - 13.6% cost of equity (CoE)

- Bear Scenario (€0.41)**
- 2ppts lower loan growth
 - +10bps loan loss ratio (cost of risk)
 - +200bps cost of equity (CoE)

Alpha Bank A E

Company description

Alpha Bank AE attracts deposits and provides retail and commercial banking services. It offers lease financing, corporate banking, asset management, private banking, investment banking and securities brokerage, venture capital, portfolio management, payment systems, consulting and real estate management services.

Investment strategy

We rate Alpha Bank Neutral/High Risk (2H). We like Alpha's strong capital (1Q20 CAR buffer 6.0%) and low share of DTC. However, increased macro uncertainty, coupled with Alpha's high NPE ratio (1Q: 43.5%), elevate the execution risk related to planned NPE reductions.

Valuation

We use a GGM approach to value Alpha Bank. Our model assumes 2021E terminal RoE of 2.4%, CoE of 13.6% and 0% growth rate. This helps us arrive at a TP of EUR0.80 for Alpha.

Risks

We rate Alpha Bank High Risk to reflect the high level of execution risks and macro uncertainties. A number of risks could prevent Alpha's share price achieving our target price:

- (1) Better or worse than expected revenue development trends, driven by margins, volume trends, ability to impose fees to clients.
- (2) Higher provisions due to deterioration in market conditions and/or regulatory pressure.
- (3) Faster than expected NPE reduction supported by the implementation of system-wide solutions being developed by the HFSF and the Bank of Greece given strong quality of capital and highest CET1 buffer among peers.

Company Focus

Eurobank (EURBr.AT)

Good Progress on NPE Reductions; Positives Priced-In

- Target Price Change
- Estimate Change

Maria Semikhatova, CFA

+44-20-7986-4294
maria.semikhatova@citi.com

Kaiwan Master^{AC}

+44-20-7986-0241
kaiwan.hoshang.master@citi.com

Neutral/High Risk

Price (22 Jun 20 17:20)	€0.43
Target price	€0.50
from €1.00	
Market Cap	€1,595M US\$1,783M
Expected share price return	16.3%
Expected dividend yield	0.0%
Expected total return	16.3%

- **1Q20 Results Trend** – Eurobank reported a net profit before one-offs of €57m (+29% qoq, +148% yoy) backed by slightly better non-bank service revenues and lower costs; whilst annualized CoR was stable at 1.24% (4Q19: 1.13%, 1Q20: 1.52%). Core PPI was up 10% yoy, stable qoq.
- **Low NPE Ratio, High Coverage** – Negative NPE formation in 1Q20, albeit at slower pace (1Q20: €5m, 4Q19: 342m), from softer outflows. By segment, Greek NPE formation negative for mortgages (-€67m), consumer (-€10m); positive for small business (+€3m), corporate (+€80m). NPE stock flat at €13bn with NPE ratio at 29% (lowest amongst peers). NPE coverage 55% (peer high-end).
- **Cairo Hive-Down Near Completion** – Significant hive-downs in 2020 with Project Cairo securitization of c.€7.5bn expected to be closed with doValue in 2Q20. Proforma gross NPE ratio post-Cairo securitization falls to 15.6% (1Q20: 28.9%), lowest amongst peers. NPE coverage expected to increase to c.60% (1Q20: 56%). Additionally, the group is working on FPS sale, also likely in 2020.
- **Capital** – CET1 ratio declined from 16.7% to 15.4% in 1Q20, owing to investment securities MTM and RWA increase. FL CET1 at 13.7% (-90bps qoq). Additional capital hit from Cairo/FPS hive-downs expected at 340bps. Total CAR at 17.8% (14.4% ex-Cairo/FPS) still well above 11.0% 2020 SREP requirement.
- **2020 Guidance** – Mgmt. has guided a fairly resilient outlook for 2020 with core PPI at €840m (2019: €830m). NII expected to decline low single-digit; whilst fees grow at low single-digits yoy in 2020. Efforts to reduce opex to be intensified with growth likely decreasing by a low single-digit rate in 2020. CoR at 140-160bps for 2020. NPE formation likely to remain flattish in 2Q20 due to existence of moratoria. Clarity on clients' ability to serve loans likely to emerge in 4Q20-1Q21.
- **Earnings Revision** – We revise down 2020-21E earnings by -32/-17%, on higher CoR of 1.35% & 1.15% respectively, partially offset by better opex (7-8%).
- **Neutral/High Risk with EUR0.50 Target** – Ongoing securitization programs are likely to further help Eurobank reduce its NPE ratio to c.16% in 2Q20, which is the sector lowest. Group targets NPE ratio of c.5% by 2022E. However, with the stock trading at 0.3x fwd. PB, a 33% premium to other Greek banks, we believe the positives are likely priced in. We have a Neutral/High Risk rating on Eurobank with a EUR0.50 target using the GGM approach (2021E RoE 6.3%, CoE 14.5%, growth 0%). We transfer coverage of Eurobank to Kaiwan Master.

Eurobank (EUR)

Year to 31 Dec	2018A	2019A	2020E	2021E	2022E
Net Income (€M)	220.0	217.0	271.6	332.6	383.2
Diluted EPS (€)	0.10	0.07	0.07	0.09	0.10
Diluted EPS (Old) (€)	0.07	0.09	0.10	0.11	na
PE (x)	4.3	5.9	5.9	4.8	4.2
P/BV (x)	0.2	0.2	0.3	0.3	0.3
DPS (€)	0.00	0.00	0.00	0.00	0.00
Net Div Yield (%)	na	na	na	na	na
ROE (%)	3.9	3.7	4.6	6.3	6.8

Bull/Bear: Eurobank (EURBr.AT)

Bull/Bear: Eurobank (EURBr.AT)



€0.5 target price

17% expected share price return

Neutral/High Risk rating

89pp Bull/Bear Spread



2ppts lower loan growth
+10bps cost of risk
+200bps CoE



2ppts higher loan growth
-10bps cost of risk
-200bps CoE



Share price*
€0.4,272

Source: Citi Research

*Share price as of 22 Jun 2020 17:20



€0.73

- 2ppts higher loan growth
- -10bps loan loss ratio (cost of risk)
- -200bps cost of equity (CoE)



€0.5

- Average -4% loan growth 2020-22E
- Average 1.2% cost of risk 2020-22E
- 14.5% cost of equity (CoE)



€0.35

- 2ppts lower loan growth
- +10bps loan loss ratio (cost of risk)
- +200bps cost of equity (CoE)

Eurobank

Company description

Eurobank is the fourth largest bank in Greece by assets. It was established in 1990 and seen strong growth and international expansion in the 2000s. It offers a diverse range of products including retail, corporate, private banking, asset management, insurance and capital markets.

Investment strategy

We rate Eurobank Neutral/High Risk (2H). Ongoing securitization programs are likely to further help Eurobank reduce its NPE ratio to c.16% in 2Q20, which is amongst the lowest in the sector. The group targets NPE ratio of c.5% by 2022E. However, with the stock trading at a premium to other Greek banks (0.3x 1Y fwd. PB), we believe the positives are likely priced in.

Valuation

We use a GGM approach to value Eurobank. Our model assumes 2021E terminal RoE of 6.3%, CoE of 14.5% and 0% growth rate. This helps us arrive at a TP of EUR0.50 for Eurobank.

Risks

We rate Eurobank High Risk to reflect the high level of execution risks related to the corporate transformation and NPE reduction strategies as well as macro vulnerabilities. A number of risks could prevent Eurobank's share price achieving our target price:

- (1) Better or worse than expected revenue development trends, driven by margins, volume trends, ability to impose fees to clients.
- (2) Higher provisions due to deterioration in market conditions and/or regulatory pressure.
- (3) Bigger or smaller impact on the capital position from de-recognition of NPEs.

Company Focus

National Bank of Greece SA (NBGr.AT) Low NPEs, Good NPE Coverage but Trades at a Premium

- Target Price Change
- Estimate Change

Maria Semikhatova, CFA

+44-20-7986-4294
maria.semikhatova@citi.com

Kaiwan Master^{AC}

+44-20-7986-0241
kaiwan.hoshang.master@citi.com

Neutral/High Risk

Price (22 Jun 20 17:20)	€1.37
Target price	€1.50
	from €2.80
Market Cap	€1,253M US\$1,401M
Expected share price return	9.5%
Expected dividend yield	0.0%
Expected total return	9.5%

- **1Q20 Results Trend** – NBG reported strong net income of €308m in 1Q20 (+235% yoy) led by trading gains, despite being partially offset by higher provisioning. Core PPI was broadly flat qoq at €137m as lower core income was offset by lower costs. 1Q20 CoR was elevated at c.5.6% (annualized) or €486m, of which €416m for anticipated Covid-19 related provisions.
- **Good Asset Quality, Stable in 1Q20** – Negative NPE formation (-€0.2bn) in 1Q20 as curing, debt forgiveness & recoveries exceeded inflows across most sectors, ex-impact of moratorium. There were no NPL sales/liquidations in the quarter. Pace of change slower vs 4Q19: -€0.7bn and 1Q19: -€1.0bn. Domestic NPE stock declined 2% qoq to €10.6bn, NPE ratio 31.8%, coverage 56%.
- **20% Loan Book Affected by Covid** – NBG estimates c.19% of its performing corporate clientele is highly affected by Covid-19 (i.e. accommodation, transport, media, retail trade, machinery & equipment sectors). Meanwhile 56% remains moderately affected and c.25% less affected.
- **Good Deposit Franchise** – NBG enjoys a good deposit franchise (1Q20 LDRs 64% vs. 80% peers), led by a higher retail segment. This has helped NBG enjoy lower funding costs with avg. Greek deposit yields at just 29bps (1Q20).
- **Capital** – CET1 ratio declined 50bps qoq to 15.5% largely driven by IFRS9 transitional adjustment. This compares to 2020 SREP requirements of 11.5%. FL CET1 ratio at 12.6% (-20bps qoq). On a proforma basis, disposal of international subsidiary is expected to lift CET1 ratio by 18bps to 15.6%.
- **2020 Guidance** – NII growth likely down low single digit rate. Fees 10-15% yoy lower, particularly corporate. Core PPI slightly down vs 2019, but partially covered by opex savings. CoR of c.100bps/quarter for remainder of 2020, after elevated levels in 1Q20 (5.5% ann.). NPE reduction plans likely to face delays.
- **Earnings Revision** – We increase 2020E earnings by 116% to reflect one-offs trading gains of €0.8bn reported in 1Q20, albeit partially offset by higher CoR. Our 2021E earnings are down 16% owing to lower revenues, higher CoR.
- **Neutral/High Risk with EUR1.50 Target** – Share price has declined 55% YTD and we like NBG's high NPE coverage (1Q: 56%), relatively low NPE ratio (1Q: 31%). However, we believe this is reflected in prices, with NBG trading at fwd. cons. P/B of 0.23x, which is a significant premium to Alpha/Piraeus' P/B of 0.12x. Increased uncertainty/possible delays in NPE reductions in 2020 are added risks. We have a Neutral/High Risk rating on NBG with a EUR1.50 target using the GGM approach (2021E RoE 4.1%, CoE 13.9%, growth 0%). We transfer coverage of NBG to Kaiwan Master.

National Bank of Greece SA (EUR)

Year to 31 Dec	2018A	2019A	2020E	2021E	2022E
Net Income (€M)	-41.4	239.3	484.0	225.4	320.4
Diluted EPS (€)	-0.05	0.26	0.53	0.25	0.35
Diluted EPS (Old) (€)	-0.09	0.15	0.25	0.29	na
PE (x)	-30.3	5.2	2.6	5.6	3.9
P/BV (x)	0.3	0.2	0.2	0.2	0.2
DPS (€)	0.00	0.00	0.00	0.00	0.00
Net Div Yield (%)	na	na	na	na	na
ROE (%)	-0.7	4.7	9.1	4.1	5.6

Bull/Bear: National Bank of Greece SA (NBGr.AT)

Bull/Bear: National Bank of Greece SA (NBGr.AT)

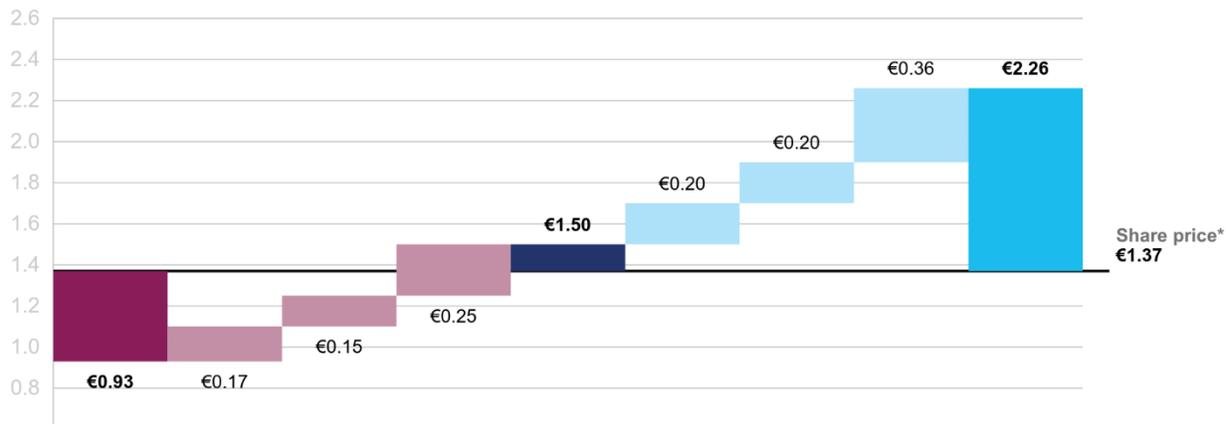


€1.5 target price

Neutral/High Risk rating

9% expected share price return

97pp Bull/Bear Spread



+200bps CoE

+10bps cost of risk

2ppts lower loan growth



2ppts higher loan growth

-10bps cost of risk

-200bps CoE



Share price*
€1.37

Source: Citi Research

*Share price as of 22 Jun 2020 17:20



€2.26

- 2ppts higher loan growth
- -10bps loan loss ratio (cost of risk)
- -200bps cost of equity (CoE)



€1.5

- Average -1% loan growth 2020-22E
- Average 1.4% cost of risk 2020-22E
- 13.9% cost of equity (CoE)



€0.93

- 2ppts lower loan growth
- +10bps loan loss ratio (cost of risk)
- +200bps cost of equity (CoE)

National Bank of Greece SA

Company description

National Bank of Greece S.A. offers retail and corporate banking services. The Bank accepts deposits and offers loans, lease financing, mortgages, and investing and insurance services to industrial, commercial, and consumer clients. National Bank of Greece operates domestically and overseas.

Investment strategy

We rate NBG Neutral/High Risk (2H). We like NBG's high NPE coverage (1Q: 56%) and relatively low NPE ratio (1Q: 31%). However, we believe this is reflected in prices, with NBG trading at 1Y fwd. cons. P/B of 0.2x, which is a significant premium to Alpha/Piraeus' P/B of 0.1x. Increased uncertainty/possible delays in NPE reductions in 2020 are added risks.

Valuation

We use a GGM approach to value NBG. Our model assumes 2021E terminal RoE of 4.1%, CoE of 13.9% and 0% growth rate. This helps us arrive at a TP of EUR1.50 for NBG.

Risks

We rate NBG High Risk to reflect the high level of execution risks and macro uncertainties. A number of risks could prevent NBG's share price achieving our target price:

- (1) Better or worse than expected revenue development trends, driven by margins, volume trends, ability to impose fees to clients.
- (2) Higher provisions due to macro uncertainty and/or new regulatory requirements.
- (3) The large portion of DTCs in the group capital.

Company Focus

Piraeus Bank (BOPr.AT) Higher Asset Quality Risk Reflected in Valuations

- Target Price Change
- Estimate Change

Maria Semikhatova, CFA

+44-20-7986-4294
maria.semikhatova@citi.com

Kaiwan Master^{AC}

+44-20-7986-0241
kaiwan.hoshang.master@citi.com

Neutral/High Risk

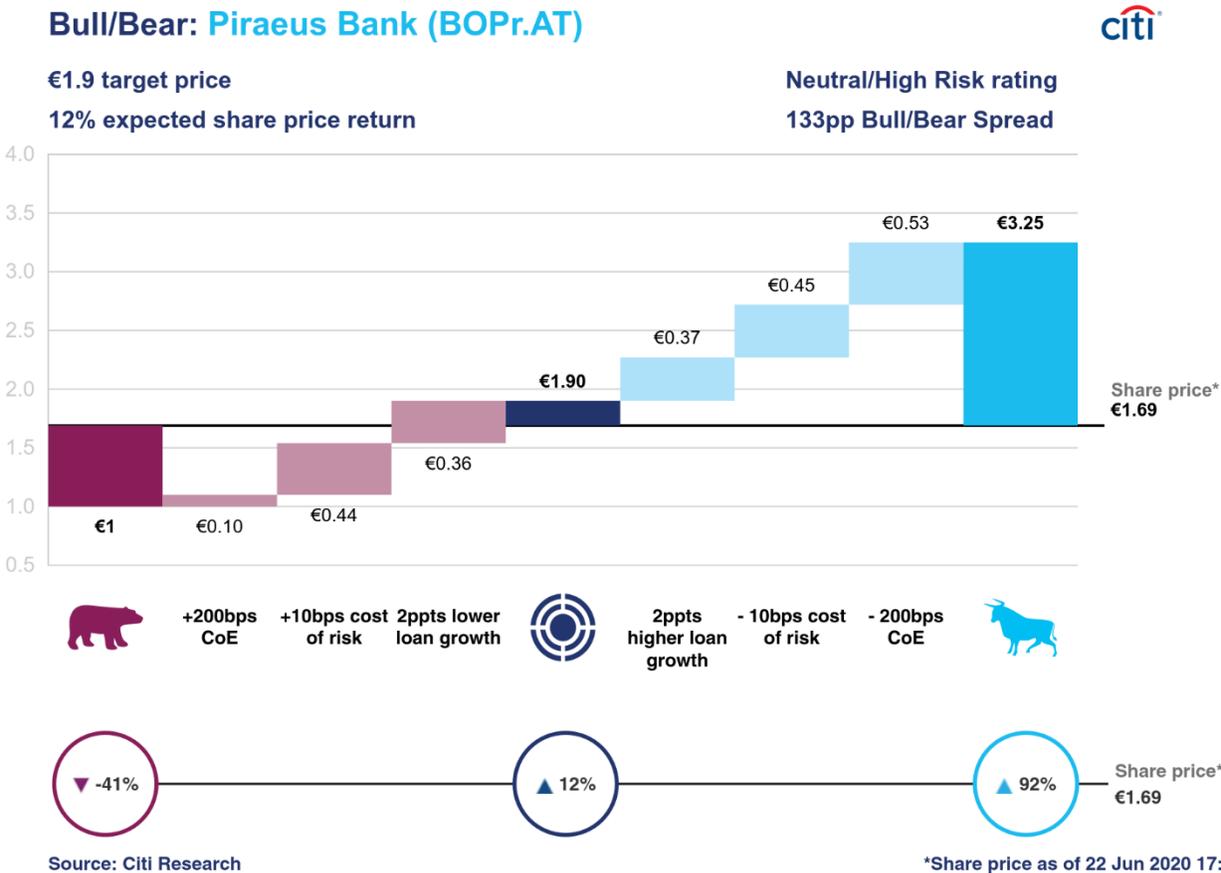
Price (22 Jun 20 17:20)	€1.69
Target price	€1.90
from €3.30	
Market Cap	€738M
	US\$831M
Expected share price return	12.4%
Expected dividend yield	0.0%
Expected total return	12.4%

- **1Q20 Results Trend** – Piraeus reported net loss of €230m in 1Q20, including an estimated Covid-19 impact of €370m. Significant earnings drag from elevated loan provisioning of €438m in the quarter, including collective ECL charge of €324m related to Covid-19. Recurring PPI of €185m, -13% yoy and -4% qoq backed by stable NII yoy, fees +3% yoy, and opex -2% yoy.
- **High NPEs, Low Coverage** – Piraeus Banks' Greek NPE stock was broadly stable at €24.1bn in 1Q20, declining just €0.35bn qoq (-1% qoq), driven by negative NPE formation (€0.20bn) and write-offs (€0.15bn). Domestic organic NPE formation negative across segments. NPE ratio broadly stable at 50% (highest amongst peers) with NPE coverage at 46% (peer lower-end).
- **Planned Hive-Down in 2020/21** – Piraeus plans to execute c.€7bn NPE securitization in 2020/21 – Project Phoenix (residential mortgage portfolio) and Project Vega (commercial & residential portfolio). The transformation balance sheet is expected to be approved by the board in 3Q20 and hive-down process completed by 1Q21. Capital hit from securitizations estimated at c.180bps. Marginal new sale transactions expected post-2020.
- **Relatively Low Capital** – Piraeus 1Q20 CET1 ratio at 13.2% (-160bps qoq), is lowest amongst peers, largely dragged down by Covid-19 impact (-80bps) and IFRS9 phasing (-50bps). Tier 2 issuance of €500m in 1Q20 boosted total capital to 15.2% (-50bps qoq). Amendments introduced by the European Commission in late April, likely to boost 2Q20 capital by 70bps. Forward looking, downside risk from securitizations, upside from IFRS phasing and organic capital generation.
- **2020 Guidance** – Piraeus expects 2Q20 NII to be fairly stable with tailwinds from new credit expansion (incl. disbursements of new govt. schemes), GGB contribution and funding cost support from new LTRO facility. 2020 fees likely flattish, opex reduction at mid-single digit. Underlying CoR at 180-190bps for the rest of 2020.
- **Earnings Revision** – We forecast 2020E loss of €41m (vs prior €150m profit) due to a higher CoR of 2.15% and pickup in opex. Our 2021E earnings are down 21% from higher CoR/opex, albeit partially offset by better revenues.
- **Neutral/High Risk with EUR1.90 Target** – Piraeus shares have corrected 45% YTD and the stock trades at 0.12x 1Y fwd. cons. P/B (lowest in sector). However, the bank has high reliance on deferred tax claims against the Greek state (c.70% of equity) coupled with relatively low capital (1Q CET: 13.2%), high NPE ratio (1Q: 50%) and mediocre NPE coverage (1Q: 46%). We have a Neutral/High Risk rating with a target of EUR1.90 using the GGM approach (2021E RoE 3.2%, CoE 14.8%, growth 0%). We transfer coverage of Piraeus Bank to Kaiwan Master.

Piraeus Bank (EUR)

Year to 31 Dec	2018A	2019A	2020E	2021E	2022E
Net Income (€M)	-225.4	279.6	-40.6	164.6	226.9
Diluted EPS (€)	-0.52	0.64	-0.09	0.38	0.52
Diluted EPS (Old) (€)	-0.36	0.22	0.34	0.48	na
PE (x)	-3.3	2.6	-18.2	4.5	3.3
P/BV (x)	0.1	0.1	0.1	0.2	0.2
DPS (€)	0.00	0.00	0.00	0.00	0.00
Net Div Yield (%)	na	na	na	na	na
ROE (%)	-4.3	5.0	-0.7	3.2	4.8

Bull/Bear: Piraeus Bank (BOPr.AT)



€3.25

- 2ppts higher loan growth
- -10bps loan loss ratio (cost of risk)
- -200bps cost of equity (CoE)



€1.9

- Average -3% loan growth 2020-22E
- Average 2.0% cost of risk 2020-22E
- 14.8% cost of equity (CoE)



€1

- 2ppts lower loan growth
- +10bps loan loss ratio (cost of risk)
- +200bps cost of equity (CoE)

Piraeus Bank

Company description

Piraeus Bank offers retail and corporate banking services in Greece and overseas (primarily in the South Eastern European region). The Bank accepts deposits and offers loans, and investing and insurance services to corporate and household clients.

Investment strategy

We rate Piraeus Bank Neutral/High Risk (2H). The stock trades at 0.12x 1Y fwd. cons. P/B, amongst the lowest in the sector). However, the bank has high reliance on deferred tax claims against the Greek state (c.71% of equity) coupled with relatively low capital (1Q CET: 13.2%), high NPE ratio (1Q: 50%) and mediocre NPE coverage (1Q: 46%).

Valuation

We use a GGM approach to value Piraeus Bank. Our model assumes 2021E terminal RoE of 3.2%, CoE of 14.8% and 0% growth rate. This helps us arrive at a TP of EUR1.90 for Piraeus.

Risks

We rate Piraeus High Risk to reflect the high level of execution risks and macro vulnerabilities. A number of risks could prevent Piraeus's share price achieving our target price:

- (1) Better or worse than expected revenue development trends, driven by margins, volume trends, ability to impose fees to clients.
- (2) Higher provisions due to macro uncertainties and/or new regulatory requirements given highest amount of NPEs and second lowest NPE coverage.
- (3) Failure to execute planned capital actions.

Appendix A-1

Analyst Certification

The research analysts primarily responsible for the preparation and content of this research report are either (i) designated by “AC” in the author block or (ii) listed in bold alongside content which is attributable to that analyst. If multiple AC analysts are designated in the author block, each analyst is certifying with respect to the entire research report other than (a) content attributable to another AC certifying analyst listed in bold alongside the content and (b) views expressed solely with respect to a specific issuer which are attributable to another AC certifying analyst identified in the price charts or rating history tables for that issuer shown below. Each of these analysts certify, with respect to the sections of the report for which they are responsible: (1) that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc. and its affiliates; and (2) no part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

Eurobank (EURBr.AT)

Ratings and Target Price History
Fundamental Research

Analyst: Maria Semikhatova, CFA



	Date	Rating	Target Price	Closing Price
1	10-Oct-17 00:00:00	2H	*0.80	0.75
2	23-Apr-18 21:00:00	2H	*1.17	0.96

	Date	Rating	Target Price	Closing Price
3	10-Sep-18 00:00:00	*1H	*0.95	0.70
4	24-Apr-19 00:00:00	*2H	*0.85	0.74

	Date	Rating	Target Price	Closing Price
5	02-Aug-19 00:00:00	2H	*1.00	0.83

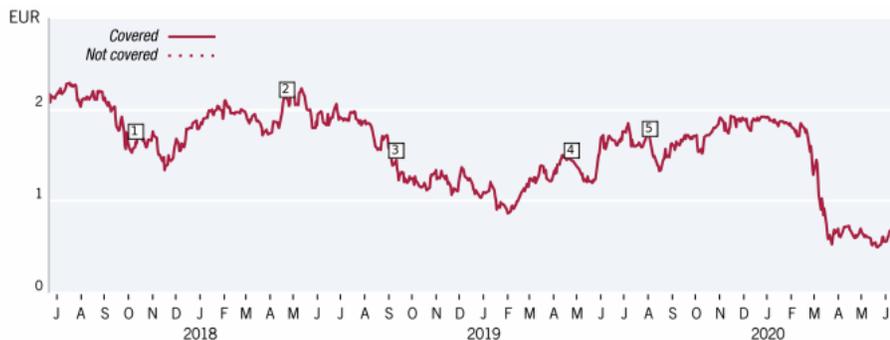
*Indicates Change

Rating/target price changes above reflect Eastern Time

Alpha Bank A E (ACBr.AT)

Ratings and Target Price History
Fundamental Research

Analyst: Maria Semikhatova, CFA



	Date	Rating	Target Price	Closing Price
1	10-Oct-17 00:00:00	*1H	*2.16	1.65
2	23-Apr-18 21:00:00	1H	*2.68	2.11

	Date	Rating	Target Price	Closing Price
3	10-Sep-18 00:00:00	1H	*1.87	1.45
4	24-Apr-19 00:00:00	*2H	*1.76	1.44

	Date	Rating	Target Price	Closing Price
5	02-Aug-19 00:00:00	2H	*1.90	1.68

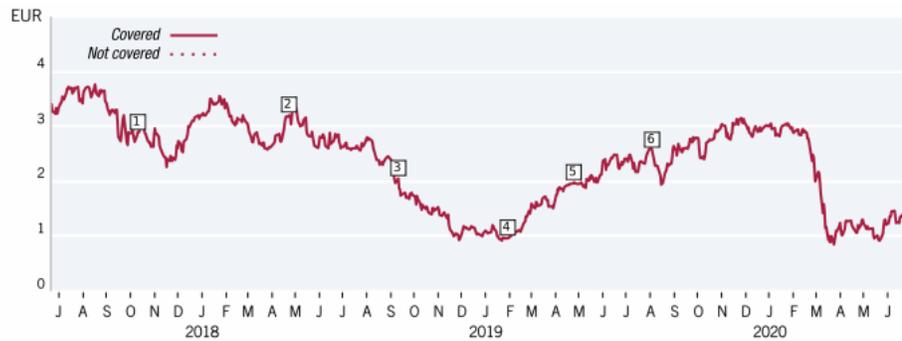
*Indicates Change

Rating/target price changes above reflect Eastern Time

National Bank of Greece SA (NBGr.AT)

Ratings and Target Price History
Fundamental Research

Analyst: Maria Semikhatova, CFA



Date	Rating	Target Price	Closing Price
1 10-Oct-17 00:00:00	2H	*3.30	2.89
2 23-Apr-18 21:00:00	2H	*3.20	3.20
3 10-Sep-18 00:00:00	2H	*2.09	2.05
4 29-Jan-19 00:00:00	2H	*1.08	0.97
5 24-Apr-19 00:00:00	2H	*2.22	1.98
6 02-Aug-19 00:00:00	2H	*2.80	2.58

*Indicates Change

Rating/target price changes above reflect Eastern Time

Piraeus Bank (BOPr.AT)

Ratings and Target Price History
Fundamental Research

Analyst: Maria Semikhatova, CFA



Date	Rating	Target Price	Closing Price
1 10-Oct-17 00:00:00	2H	*3.10	2.49
2 23-Apr-18 21:00:00	2H	*3.99	3.19
3 10-Sep-18 00:00:00	2H	*2.57	2.21
4 28-Jan-19 12:47:57	2H	*0.76	0.58
5 24-Apr-19 00:00:00	2H	*1.84	1.81
6 02-Aug-19 00:00:00	2H	*3.20	2.95
7 19-Nov-19 06:39:24	2H	*3.30	3.18

*Indicates Change

Rating/target price changes above reflect Eastern Time

Due to Citigroup Global Markets Limited's involvement as advisor to Alpha Bank AE in relation to the announced disposal of Alpha's Bulgarian subsidiary branch setup to EFG Eurobank, Citi Research restricted publication of new research reports and suspended its rating and target price on the 17th July 2015 ('the Suspension Date'). Please note that the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and the 1st March 2016 when Citi Research resumed full coverage.

Citigroup Global Markets Ltd is acting as advisor to Alpha in relation to the sale process of Non- Performing Loan and of repossessed real estate assets//Due to Citigroup Global Markets Limited's involvement as advisor to Alpha Bank AE in relation to the announced disposal of Alpha's Bulgarian subsidiary branch setup to EFG Eurobank, and involvement as advisor to Alpha Bank AE in relation to their announced capital increase, Citi Research restricted publication of new research reports and suspended its rating and target price on the 17th July 2015 ('the Suspension Date'). Please note that the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and the 1st March 2016 when Citi Research resumed full coverage. Due to Citigroup Global Markets Limited's involvement Joint Global Co-Ordinator and Joint Bookrunner in Alpha Banks share offering, Citi Research restricted publication of new research reports and suspended its rating and target price on 11/11/2015 ('the Suspension Date'). Please note that the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and 01/03/2016 when Citi Research resumed full coverage.

Citigroup Global Markets Ltd is currently mandated as advisor to the Hellenic Republic in relation the announced privatisation process of various State owned airports and Hellinikon.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Alpha Bank A E, Greece.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Eurobank, Alpha Bank A E, National Bank of Greece SA, Piraeus Bank, Greece.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from Eurobank.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Eurobank, Alpha Bank A E, National Bank of Greece SA, Piraeus Bank, Greece in the past 12 months.

Prepared for Dimitrios Kostopoulos

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Eurobank, Alpha Bank A E, National Bank of Greece SA, Piraeus Bank, Greece.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Eurobank, Alpha Bank A E, National Bank of Greece SA, Piraeus Bank, Greece.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Eurobank, Alpha Bank A E, National Bank of Greece SA, Piraeus Bank, Greece.

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Greece. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citiVelocity.com.)

Disclosure for investors in the Republic of Turkey: Under Capital Markets Law of Turkey (Law No: 6362), the investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided in accordance with a contract of engagement on investment advisory concluded between brokerage houses, portfolio management companies, non-deposit banks and clients. Comments and recommendations stated here rely on the individual opinions of the ones providing these comments and recommendations. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations. Furthermore, Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies and/or trades on securities covered in this research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report, however investors should also note that the Firm has in place organisational and administrative arrangements to manage potential conflicts of interest of this nature.

Analysts' compensation is determined by Citi Research management and Citigroup's senior management and is based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates (the "Firm"). Compensation is not linked to specific transactions or recommendations. Like all Firm employees, analysts receive compensation that is impacted by overall Firm profitability which includes investment banking, sales and trading, and principal trading revenues. One factor in equity research analyst compensation is arranging corporate access events between institutional clients and the management teams of covered companies. Typically, company management is more likely to participate when the analyst has a positive view of the company.

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

The Firm is a market maker in the publicly traded equity securities of Eurobank, Alpha Bank A E, National Bank of Greece SA, Piraeus Bank.

Unless stated otherwise neither the Research Analyst nor any member of their team has viewed the material operations of the Companies for which an investment view has been provided within the past 12 months.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 30th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Pursuant to the Market Abuse Regulation a history of all Citi Research recommendations published during the preceding 12-month period can be accessed via Citi Velocity (<https://www.citivelocity.com/cv2>) or your standard distribution portal. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Research Equity Ratings Distribution

<i>Data current as of 31 Mar 2020</i>	12 Month Rating			Catalyst Watch		
	Buy	Hold	Sell	Buy	Hold	Sell
Citi Research Global Fundamental Coverage	54%	35%	11%	17%	75%	8%
<i>% of companies in each rating category that are investment banking clients</i>	65%	63%	58%	70%	63%	65%

Guide to Citi Research Fundamental Research Investment Ratings:

Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The target price is based on a 12 month time horizon. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation. Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

Catalyst Watch Upside/Downside calls:

Citi Research may also include a Catalyst Watch Upside or Downside call to highlight specific near-term catalysts or events impacting the company or the market that are expected to influence the share price over a specified period of 30 or 90 days. A Catalyst Watch Upside (Downside) call indicates that the analyst expects the share price to rise (fall) in absolute terms over the specified period. A Catalyst Watch Upside/Downside call will automatically expire at the end of the specified 30/90 day period; the analyst may also close a Catalyst Watch call prior to the end of the specified period in a published research note. A Catalyst Watch Upside or Downside call may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of FINRA ratings-distribution-disclosure rules, a Catalyst Watch Upside call corresponds to a buy recommendation and a Catalyst Watch Downside call corresponds to a sell recommendation. Any stock not assigned to a Catalyst Watch Upside or Catalyst Watch Downside call is considered Catalyst Watch Non-Rated (CWNR). For purposes of FINRA ratings-distribution-disclosure rules, we correspond CWNR to Hold in our ratings distribution table for our Catalyst Watch Upside/Downside rating system. However, we reiterate that we do not consider CWNR to be a recommendation. For all Catalyst Watch Upside/Downside calls, risk exists that the catalyst(s) and associated share-price movement will not materialize as expected.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets India Private Limited	Kaiwan Master; Ronak S Shah
Citigroup Global Markets Ltd	Ronit Ghose, CFA; Maria Semikhatova, CFA

OTHER DISCLOSURES

Any price(s) of instruments mentioned in recommendations are as of the prior day's market close on the primary market for the instrument, unless otherwise stated.

The completion and first dissemination of any recommendations made within this research report are as of the Eastern date-time displayed at the top of the Product. If the Product references views of other analysts then please refer to the price chart or rating history table for the date/time of completion and first dissemination with respect to that view.

Regulations in various jurisdictions require that where a recommendation differs from any of the author's previous recommendations concerning the same financial instrument or issuer that has been published during the preceding 12-month period that the change(s) and the date of that previous recommendation are indicated. For fundamental coverage please refer to the price chart or rating change history within this disclosure appendix or the issuer disclosure summary at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

European regulations require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

The proportion of all Citi Research research recommendations that were the equivalent to "Buy", "Hold", "Sell" at the end of each quarter over the prior 12 months (with the % of these that had received investment firm services from Citi in the prior 12 months shown in brackets) is as follows: Q1 2020 Buy 33% (68%), Hold 43% (60%), Sell 24% (57%), RV 0.6% (85%); Q4 2019 Buy 32% (68%), Hold 44% (61%), Sell 24% (56%), RV 0.8% (90%); Q3 2019 Buy 33% (72%), Hold 43% (65%), Sell 24% (57%), RV 0.6% (88%); Q2 2019 Buy 33% (72%), Hold 43% (64%), Sell 23% (56%), RV 0.6% (88%). For the purposes of disclosing recommendations other than for equity or high yield recommendations (whose definitions can be found in their corresponding disclosure sections), "Buy" means a positive directional trade idea; "Sell" means a negative directional trade idea; and "Relative Value" means any trade idea which does not have a clear direction to the investment strategy.

European regulations require a 5 year price history when past performance of a security is referenced. CitiVelocity's Charting Tool (https://www.citivelocity.com/cv2/#go/CHARTING_3_Equities) provides the facility to create customisable price charts including a five year option. This tool can be found in the Data & Analytics section under any of the asset class menus in CitiVelocity (<https://www.citivelocity.com/>). For further information contact CitiVelocity support (https://www.citivelocity.com/cv2/go/CLIENT_SUPPORT). The source for all referenced prices, unless otherwise stated, is DataCentral, which sources price information from Thomson Reuters. Past performance is not a guarantee or reliable indicator of future results. Forecasts are not a guarantee or reliable indicator of future performance.

Investors should always consider the investment objectives, risks, and charges and expenses of an ETF carefully before investing. The applicable prospectus and key investor information document (as applicable) for an ETF should contain this and other information about such ETF. It is important to read carefully any such prospectus before investing. Clients may obtain prospectuses and key investor information documents for ETFs from the applicable distributor or authorized participant, the exchange upon which an ETF is listed and/or from the applicable website of the applicable ETF issuer. The value of the investments and any accruing income may fall or rise. Any past performance, prediction or forecast is not indicative of future or likely performance. Any information on ETFs contained herein is provided strictly for illustrative purposes and should not be deemed an offer to sell or a solicitation of an offer to purchase units of any ETF either explicitly or implicitly. The opinions expressed are those of the authors and do not necessarily reflect the views of ETF issuers, any of their agents or their affiliates.

Citigroup Global Markets India Private Limited and/or its affiliates may have, from time to time, actual or beneficial ownership of 1% or more in the debt securities of the subject issuer.

This communication is directed at persons who are "Eligible Clients" as such term is defined in the Israeli Regulation of Investment Advice, Investment Marketing and Investment Portfolio Management law, 1995 (the "Advisory Law"). Within Israel, this communication is not intended for retail clients and Citi will not make such products or transactions available to retail clients. The presenter is not licensed as investment advisor or marketer by the Israeli Securities Authority ("ISA") and this communication does not constitute investment or marketing advice. The information contained herein may relate to

matters that are not regulated by the ISA. Any securities which are the subject of this communication may not be offered or sold to any Israeli person except pursuant to an exemption from the Israeli public offering rules, including according to the Israeli Securities Law.

Citi Research generally disseminates its research to the Firm's global institutional and retail clients via both proprietary (e.g., Citi Velocity and Citi Personal Wealth Management) and non-proprietary electronic distribution platforms. Certain research may be disseminated only via the Firm's proprietary distribution platforms; however such research will not contain changes to earnings forecasts, target price, investment or risk rating or investment thesis or be otherwise inconsistent with the author's previously published research. Certain research is made available only to institutional investors to satisfy regulatory requirements. Individual Citi Research analysts may also opt to circulate published research to one or more clients by email; such email distribution is discretionary and is done only after the research has been disseminated. The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with the Firm and legal and regulatory constraints.

Pursuant to Comissão de Valores Mobiliários Rule 598 and ASIC Regulatory Guide 264, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental equity or credit research report, it is the intention of Citi Research to provide research coverage of the covered issuers, including in response to news affecting the issuer. For non-fundamental research reports, Citi Research may not provide regular updates to the views, recommendations and facts included in the reports. Notwithstanding that Citi Research maintains coverage on, makes recommendations concerning or discusses issuers, Citi Research may be periodically restricted from referencing certain issuers due to legal or policy reasons. Where a component of a published trade idea is subject to a restriction, the trade idea will be removed from any list of open trade ideas included in the Product. Upon the lifting of the restriction, the trade idea will either be re-instated in the open trade ideas list if the analyst continues to support it or it will be officially closed. Citi Research may provide different research products and services to different classes of customers (for example, based upon long-term or short-term investment horizons) that may lead to differing conclusions or recommendations that could impact the price of a security contrary to the recommendations in the alternative research product, provided that each is consistent with the rating system for each respective product.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Bell Potter Customers: Bell Potter is making this Product available to its clients pursuant to an agreement with Citigroup Global Markets Australia Pty Limited. Neither Citigroup Global Markets Australia Pty Limited nor any of its affiliates has made any determination as to the suitability of the information provided herein and clients should consult with their Bell Potter financial advisor before making any investment decision.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citigroup Global Markets Australia Pty Limited. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. Citigroup Global Markets Australia Pty Limited is not an Authorised Deposit-Taking Institution under the Banking Act 1959, nor is it regulated by the Australian Prudential Regulation Authority. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários ("CVM"), BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBIMA - Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais. Av. Paulista, 1111 - 14º andar(parte) - CEP: 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile

Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **Germany** either by Citigroup Global Markets Europe AG ("CGME"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGME, Reuterweg 16, 60323 Frankfurt am Main or by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A. (organized under the laws of U.S. A. with limited liability), Champion Tower, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited (CGM), which is regulated by the Securities and Exchange Board of India (SEBI), as a Research Analyst (SEBI Registration No. INH00000438). CGM is also actively involved in the business of merchant banking and stock brokerage in India, and is registered with SEBI in this regard. CGM's registered office is at 1202, 12th Floor, FIFC, G Block, Bandra Kurla Complex, Bandra East, Mumbai – 400098. CGM's Corporate Identity Number is U99999MH2000PTC126657, and its contact details are: Tel:+9102261759999 Fax:+9102261759961. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israel Securities Authority. Citibank, N.A. Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Otemachi Park Building, 1-1-1 Otemachi, Chiyoda-ku, Tokyo 100-8132 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The product is made available in the **Kingdom of Saudi Arabia** in accordance with Saudi laws through Citigroup Saudi Arabia, which is regulated by the Capital Market Authority (CMA) under CMA license (17184-31). 2239 Al Urubah Rd – Al Olaya Dist. Unit No. 18, Riyadh 12214 – 9597, Kingdom Of Saudi Arabia. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. <http://dis.kofia.or.kr/websquare/index.jsp?w2xPath=/wq/fundMgr/DISFundMgrAnalystList.xml&divisionId=MDIS03002002000000&serviceId=SDIS03002002000>. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. This research report is intended to be provided only to Professional Investors as defined in the Financial Investment Services and Capital Market Act and its Enforcement Decree in Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Citibanamex Casa de Bolsa, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Citibanamex which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through AO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold/Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited

investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the license scope and the applicable laws and regulations in the Republic of China. CGMTS is regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS]. Pursuant to the applicable laws and regulations in the Republic of China, the recipient of the Product shall not take advantage of such Product to involve in any matters in which the recipient may have conflicts of interest. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 399 Interchange 21 Building, 18th Floor, Sukhumvit Road, Klongtoey Nua, Wattana, Bangkok 10110, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E.**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA. This material may relate to investments or services of a person outside of the UK or to other matters which are not authorised by the PRA nor regulated by the FCA and the PRA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted. Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product. Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes the Firm's estimates, data from company reports and feeds from Thomson Reuters. The source for all referenced prices, unless otherwise stated, is DataCentral. Past performance is not a guarantee or reliable indicator of future results. Forecasts are not a guarantee or reliable indicator of future performance. The printed and printable version of the research report may not include all the information (e.g., certain financial summary information and comparable company data) that is linked to the online version available on the Firm's proprietary electronic distribution platforms.

© 2020 Citigroup Global Markets Inc. Citi Research is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. The research data in this report are not intended to be used for the purpose of (a) determining the price of or amounts due in respect of (or to value) one or more financial products or instruments and/or (b) measuring or comparing the performance of, or defining the asset allocation of a financial product, a portfolio of financial instruments, or a collective investment undertaking, and any such use is strictly prohibited without the prior written consent of Citi Research. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, disseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. Part of this product may contain Sustainalytics proprietary information that may not be reproduced, used, disseminated, modified nor published in any manner without the express written consent of Sustainalytics. Sustainalytics, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Any information attributed to Sustainalytics is provided solely for informational purposes and on its own should not be considered an offer to buy or sell a security. Neither Sustainalytics nor all its third-party suppliers provide investment advice (as defined in the applicable jurisdiction) or any other form of (financial) advice. The information is provided "as is" and, therefore Sustainalytics assumes no responsibility for errors or omissions. Sustainalytics cannot be held liable for damage arising from the use of this product or information contained herein in any manner whatsoever. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the

Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the linked site does not in any way form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST
