

Looking for Confirmation of the Digital Edge

📅 20 March 2019

Key Takeaway

The investor day presents ING with the opportunity to demonstrate its digital strength and how this will crystallise into an improved earnings dynamic. We also expect further visibility on current compliance issues.

ING's investor day on 25 March should be a trigger for the group's underlying earnings and we expect clarification on recent compliance cases. We believe 2019 should offer a better earnings dynamic with the crystallisation of 40% of the group's expected '16-'21 synergies and an acceleration of the benefits from digital investments. On the digital front, we focus on the Welcome bank platform (Germany) that is benefiting from ING's investments. In this report, using SimilarWeb, we highlight the link between the implementation of ING's 2016 strategy and fees growth. Although the recent compliance issues are less severe than those in 2018, we expect them to weigh on the share price as there is a perceived risk of litigation until they are resolved.

Valuation is attractive and we expect the investor day to emphasise ING's digital strength. We have a €14.10 price target, offering 29% upside potential.

2018 was to be a transitional year. However, the combination of litigation uncertainties, Turkish exposures and a delay in the transformation of the Belgium retail operations, led investors to turn away from the name and ING underperformed the sector by 13%.

2019 should be a year when synergies come through. Firstly, on the cost side post the decommissioning of the old IT platform in Belgium; and, secondly, there should be benefits from the dynamic acquisition of primary customers since 2016, with c. 68% of the 2020 target already achieved by 2018.

Market digital intelligence data from SimilarWeb helps illustrate the positive commercial dynamic of the group's strategy in Germany, confirming the revenue growth potential of the digital strategy. We also highlight ING's leadership in the Netherlands and its disruptive potential in the Spanish market.

On 25 March, we expect the group to announce a further strengthening in its strategy in face of the ongoing global economic slowdown. This could come from some refocusing in wholesale and better cost optimization to maintain its 50-52% C/I ambition for 2020.

We view ING's equity story as a value play. The group trades on 0.9x its TNAV with a 9.5% RoTE by 2021e, 7.8x 2020e earnings and offers a 6.7% dividend yield for 2019e vs the sector average of 6.1%. Due to organic growth and regulation changes, we expect the payout to be around 54%-55% for the next three years.

Risks include a lower for longer rate environment and new compliance cases, a topic we hope for more clarity on at the investor day.

EQUITY RESEARCH
POWERED BY

Jefdata.

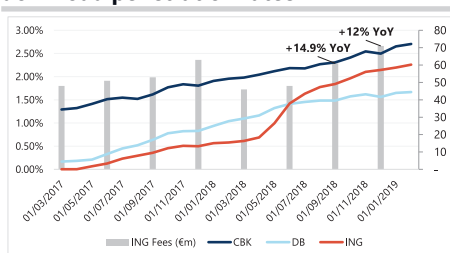
COMPANY UPDATE

RATING	BUY
PRICE	€11.08 [^]
MARKET CAP	€43.1B / \$48.8B
PRICE TARGET (PT)	€14.10
UPSIDE SCENARIO PT	€18.50
DOWNSIDE SCENARIO PT	€9.20

[^]Prior trading day's closing price unless otherwise noted.

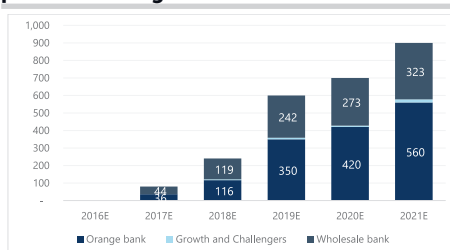
FY Dec	2018A	2019E	2020E	2021E
EPS (€)	1.17	1.37	1.40	1.39
FY P/E	9.5x	8.1x	7.9x	8.0x

Chart 1 - German market - mobile app download penetration rates



Source: Jefferies, SimilarWeb

Chart 2 - Jefferies estimates of €900m planned savings



Source: Jefferies estimates

Maxence Le Gouvello Du Timat *

Equity Analyst

+44 (0) 20 7029 8280

mlegouvello@jefferies.com

Martina Matouskova, ACA *

Equity Associate

+44 (0) 20 7029 8352

mmatouskova@jefferies.com

Joseph Dickerson *

Equity Analyst

+44 (0) 20 7029 8309

jdickerson@jefferies.com

Benjie Creelan-Sandford *

Equity Analyst

+44 (0) 20 7029 8082

bcreelansandford@jefferies.com

Please see analyst certifications, important disclosure information, and information regarding the status of non-US analysts on pages 17 to 22 of this report.

* Jefferies International Limited

The Long View

Scenarios

Base Case

- 2020E EPS €1.40 with 4.6% CAGR 2017/2020E
- Growth breakdown: Retail 1.8%, Wholesale 6.1%, CC -9%, Group 4.2%
- 2020E C/I ratio 51.8%
- 2020E Dividend €0.77 assuming a 55% payout ratio
- 2020E group RoTE 10.2%
- 2020E Retail RoE 16.9%, Wholesale 11.4%
- 2020E CET1 ratio = 14.5%
- 2020E RWA €348bn
- Price target = €15.2 by 2020, 38% upside

Weighted PT in 12 months: €14.1, 29% upside (30% Bear case, 50% Base case, 20% Bull case)

Upside Scenario

- 2020E EPS €1.67 with 10.9% CAGR
- 2020E C/I ratio 50.3%
- 2020E Dividend €0.92 assuming a 55% payout ratio
- 2020E group RoTE 12%
- 2020E Retail RoE 18.6%, Wholesale 12.4%
- 2020E CET1 ratio = 13.6%
- 2020E RWA €374bn

Price target = €18.5 by 2019, 68% upside

Downside Scenario

- 2020E EPS €1.02 with -5.9% CAGR
- 2020E C/I ratio 57.8%
- 2020E Dividend €0.56 assuming a 55% payout ratio
- 2020E group RoTE 7.78%
- 2020E Retail RoE 12.8%, Wholesale 7.6%
- 2020E CET1 ratio = 13.5%
- 2020E RWA €363bn

Price target = €9.2 by 2019, 16% downside

Investment Thesis / Where We Differ

- We expect the digital option to crystallise by 2019 and 2020 with the revenues accelerating on increased cross-buy potential; we also expect a C/I ratio of 51.8% by 2020, hence we are 5.2% and 3.5% ahead of consensus for 2019 and 2020 on the net income line.
- We see a number of capital options ING can utilize post Basel IV clarity: organic growth and an improved dividend. With CET1 of 14.5% in Q4-18 and an optimal cap of 14% by 2020, we have a pay-out to 55% by 2020 ending with CET1 at 14.5% as we see no large distribution due to regulatory and public opinion pressures.

Catalysts

- Q1 results – 2 May
- Investor day – 25 March

Long Term Analysis

B3 CET (2020e) 14.5%

Adj Revenue growth ('17-'20e) 2.4%

Adj Cost Income ratio (2020e) 49.7%

Loan growth ('17-'20e) 3.5%

Financial Summary and Market Data

Financial Summary

Market Data

52-Week Range:	€14.46 - €9.09
Total Entprs. Value	€43.1B
Avg. Daily Value MM (\$)	224.80
Float (%)	100.2%

Estimates and Valuation

Estimates								
€	Prev.	2018A	Prev.	2019E	Prev.	2020E	Prev.	2021E
Rev. (MM)		18,097.0		18,354.0		18,943.0		20,515.0
Dividend		0.68		0.74		0.77		0.76
EPS		1.17		1.37		1.40		1.39
Valuation								
		2018A		2019E		2020E		2021E
P/Rev		2.4x		2.3x		2.3x		2.1x
Div. Yield		6.13%		6.68%		6.95%		6.86%
FY P/E		9.5x		8.1x		7.9x		8.0x

Rev: Bank only

Financial ambitions

ING has steadily delivered on its plan and, based on our 2020 estimates, it will meet its financial ambitions, with a small miss on RoE as **we have factored in the delay in rate hikes until 2021 (On the Safe Side)**.

Solvency is the only less straightforward target in the world of evolving capital rules. On publication of the rules, ING guided that they would have an impact of 200bps, without mitigating actions. This means an RWA inflation of 15-18% by 2027, which is mostly input driven (80%) and the rest is due to output floors; the management view is that they can mitigate about one-third of the impact. At 4Q18 the pro-forma BIV CET1 was 13.3% vs the target of 13.5%. As we have advocated before, we expect no major pay-outs as capital rules are in transition and considering the bail-out history of the bank.

Exhibit 1 - Financial ambitions and Jefferies estimates

Financial ambitions	2020 Ambitions	H1-2016A	2016A	2017A	2018A	2020 JEFe
CET1	~13.5% (BIV)	13.2%	14.2%	14.7%	14.5%	14.5%
Leverage	> 4%	4.50%	4.20%	4.70%	4.40%	4.50%
CI	50-52%	56.4%	54.2%	55.50%	54.8%	51.8%
RoE	10-12%	10.80%	10.20%	10.20%	11.2%	9.90%
Dividend	Progressive >€ 0.65		57%	55%	58%	55%
CoR (of RWA)	40-45bps		€ 0.67	€ 0.67	€ 0.68	€ 0.77
			31bps	22bps	21bps	42bps

Source: Jefferies, company data

Business ambitions

The other ambitions ING set relate to growth of **primary customers, lending growth, commission growth and a change in loan book composition**.

On the loan book composition, the concentration of mortgages should steadily reduce and the lending mix should become more diversified by geography, which altogether should deliver higher margin lending. **At the end of 2018, the lending share of mortgages was brought down to 48% from 51% in H1-16**, while General and Industry's lending share increased.

Industry lending was identified at the investor day as a strong engine for profitable growth, with a CAGR of +11% between '12-'16. The actual lending CAGR in '16-'18 for wholesale books was 4.3% in Industry and 10.9% in General. Management **guidance is that the growth in the wholesale books should slow down in a weaker macro environment**; we have lowered our growth forecast for the next two years in General lending to 4.2% (exhibit 2). **Strong lending growth is expected to continue in Challengers and Growth (C&G) markets following a CAGR of 5.5% between '16-'18**.

In H1-16, Other personal lending contributed 20% of the book, of which 15% was SME and 3% consumer. Based on our forecast, the total personal lending contributed 19% in 2016 and came to 20% of the book in 2018; however, **ING might not achieve the 22% ambition in 2020 to avoid an increase in CoR**.

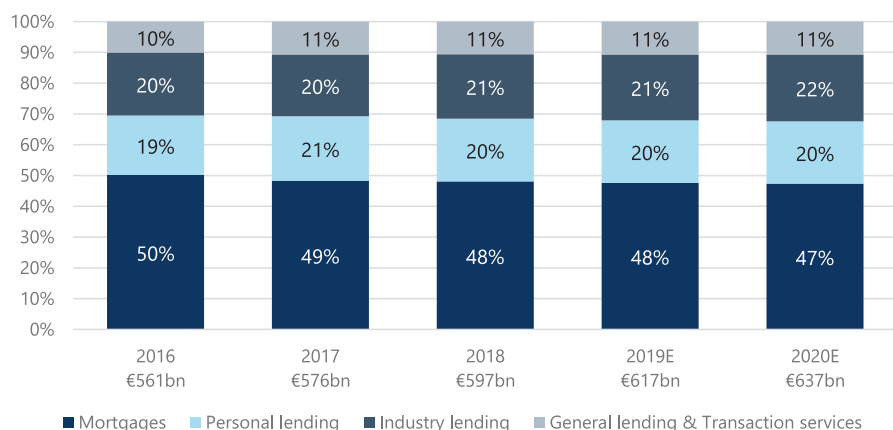
Exhibit 2 - Business ambitions and Jefferies estimates

Growth	2020 Ambitions	CAGR '16-'18	CAGR '16-20E
New customers (mn)	>14m	12.5	n.a
Lending growth	3%-4% p.a.	3.20%	4.50%
Fee growth	5%-10%	7.30%	6.30%

Portfolio mix	2020 Ambitions	H1-16	2018A	2020 JEFe
General lending & Trans.	9%	10%	11%	11%
Industry lending	21%	19%	21%	22%
SME/Midcorp/consumer lending	22%	20%	20%	20%
Mortgages	48%	51%	48%	47%

Source: Jefferies estimates, company data

Chart 3 - Loan portfolio mix 2016A - 2020E



Source: Jefferies estimates, company data

On revenue expansion, ING aspires to grow non-interest income faster than NII, with a fee growth target set between 5%-10%, with the growth coming through a changing model in Challengers and Growth markets leading to an increase in the mobile banking platform resulting in higher cross buy (focus on primary customers), investment and insurance products generating fees, payment fees and other new sources (referrals to third parties, comparison engines etc). So far, the fee growth has been 7.3% between '16-'18 and it has been stronger than NII growth in all divisions, but Other retail in Challengers and Growth markets; nevertheless, its fee growth was still strong at 11.2%. Strong NII growth in C&G markets is down to asset mix that is still skewed towards mortgages and saving products. At Q4, ING guided towards no slowdown in the fee target and for the next two years we forecast fee growth of 5.2% vs NII growth of 2.6% driven by volumes in the Eurozone retail operations and a mix of volumes and rates in other C&G markets.

Exhibit 3 - Fee, NII & loan growth per divisions; Actual CAGR '16-18 and Jef forecast '18-'20

	Actual CAGR 2016A-2018A					JEF expected CAGR 2018A-2020E				
	Revenue	NII	Fee	Loans	o.w. mortgages	Revenue	NII	Fee	Loans	o.w. mortgages
Netherlands retail	0.6%	-2.3%	9.5%	-3.0%	-4.0%	-1.1%	-0.3%	6.5%	1.0%	0.5%
Belgium retail	-4.0%	-2.8%	-1.8%	6.7%	3.0%	-0.1%	1.2%	1.5%	2.1%	1.5%
Germany retail	1.3%	-0.5%	10.9%	3.4%	3.4%	2.8%	3.6%	5.5%	4.1%	4.5%
Other retail	7.7%	13.0%	11.2%	7.5%	7.0%	6.0%	6.5%	6.5%	4.5%	4.5%
Industry lending WB	6.0%	4.9%	6.5%	4.3%		5.1%	6.6%	2.5%	5.5%	
General lending WB	8.3%	8.0%	7.7%	10.9%		5.0%	5.7%	6.5%	4.2%	
Group	1.8%	2.5%	7.3%	3.2%	1.0%	2.3%	2.6%	5.2%	3.5%	2.6%

Source: Jefferies estimates

Growth in primary customers features in ING's formula for creating the 'customer value' and it is vital for its strategy as via current accounts ING can get to know its customers in terms of behavior and need, and thus sell them more products.

Exhibit 4 - ING's approach to customer value



Source: Company data

By end 2018, ING had attracted 3.2m new primary customers, 68% of the minimum targeted by 2020. The C&G markets record most of the additions of primary customers as these are the markets in which ING can attract new customers by positioning itself as the new or newly transformed digital bank. This is supported by the creation of the Welcome and Model bank platforms, which allow ING to analyze customers' data in a more efficient way. For example, in 9m 2018, 80% of new primary customers came from C&G markets with minimal additions from its mature markets (NL, BE) - the +161k customers in Belgium in 2018 were driven by the Record Bank consolidation.

Exhibit 5 - ING primary customer growth for 9m 2018



Source: Company data

Germany is a fine example of the digital strategy where the online channel and a larger range of products have increased the fee income. 2017 was mainly the year of investments in a project, Welcome, aimed at digitalising the German platform further and opening it to third party products. In 2017, 'Welcome' launched a fully digital current account, increased the back office processing capability, and automated a call centre. In 2018, developments included the introduction of a new feature for mortgage disbursements and the automation of back-office dispute handling. In 3Q-18, ING Germany also implemented the 'agile way of working', - the first bank in Germany to do so, with a view to completing the process by summer 2019.

To improve its product offering (internal and with third parties), ING has engaged in a number of ventures. To flag a few:

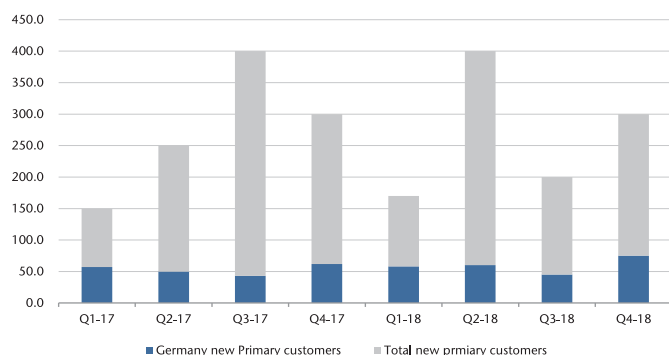
- Q2-17 *Yareto* online tool for car loans was released to support dealer channels
- Q3-17 ING partnered with *Scalable Capital* to offer online wealth management services; since then 30k of customers have been onboarded
- Q2-18 ING invested in *FinCompare*, a digital platform offering SMEs a wide choice of financing options.

Other fee contributors include '*Interhyp*', which ING acquired in 2008. It is the largest residential mortgage distributor in Germany and works on running a proprietary mortgage platform that compares and processes offers of >400 lenders. Interhyp income is more than 95% from commissions, it has no mortgages on its balance sheet and a very profitable >30% EBT margin.

All these initiatives led to strong growth in primary customers supporting ING Germany's revenue growth with c. 20% of total new primary customers from Germany. **Chart 5 illustrates how the mobile apps install penetrations have developed in Germany over the last 24 months**, including 'ING Banking to go' offered by ING Diba and it is key to

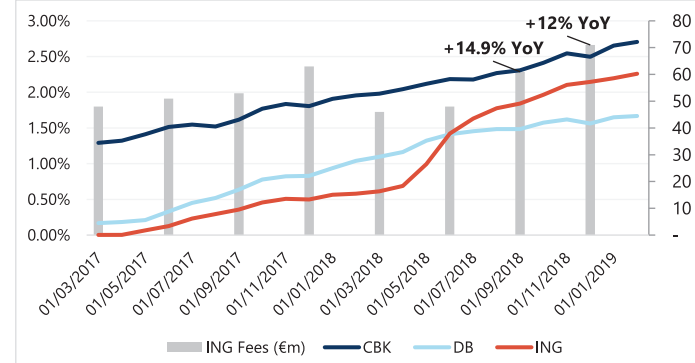
highlight that the download rate accelerated post Q1-18 after major investments. And altogether, ING achieved higher fees in H2-2018 as planned.

Chart 4 - Primary customers growth 2017-2018



Source: Jefferies, Company data

Chart 5 - Germany: Mobile install penetration vs Fee growth



Source: Jefferies, SimilarWeb

SimilarWeb

Jefferies uses the services of SimilarWeb, which provides digital market intelligence including the use of mobile banking applications. For our review, we selected three markets (the Netherlands, Germany and Spain) where ING operates as a digital bank; each bank's intended digital platform is at a different stage of development (omnichannel for NL, Welcome for ING Germany and Model bank for Spain) and the markets have adopted digital banking to different extents. The review covers the last 24 months and the peers selected are based on the scoring of the most popular mobile apps in each country (based on Apple and Play Store).

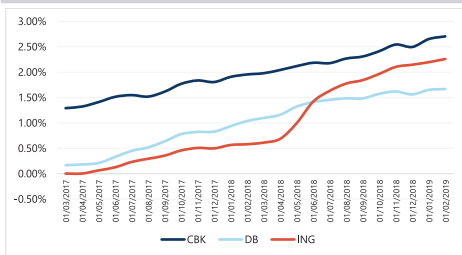
The Netherlands: The Dutch retail market is well above the European average when it comes to digitalization and maturity of internet banking, with the penetration rate estimated at 89% (source: ECB, chart 15). In the Netherlands, ING has already introduced the omnichannel platform, and with the majority of the Dutch population banking via digital, it is no surprise that ING's mobile app has the largest download and usage penetration rates. ING's clients also spend the most time on the app, with the average number of sessions per user around 2.2x over the last 24 months; this is the target outcome as ING wants to provide a range of good, but simple, products to clients so they can shop around online. For ING, the client value creation matrix is based on cross-buy rather than cross-sell.

Germany: In Germany, 56% of population used online banking services in 2017, compared to 43% in 2010. ING operates as an online bank in Germany; however, the goal is to create a strong digital platform that will be run on an omnichannel approach as in Benelux. ING made main investments in 2017, and also in 2018, to enhance the platform, which can be seen coming through post Q1-2018 in terms of download and usage penetration. Additionally, the number of sessions has increased and ING is now above its competitors' rates. Some of the investment was used to introduce new products, either internally or via JVs and third party partnerships, and the increased number of sessions is good evidence of the approach working.

Spain: In terms of online banking, Spain is still below the EU average. However, what makes Spain stand out in our review is that ING Spain is the development platform for mobile banking for all ING's retail activities. ING Spain's application is developed under a front-end platform, Genoma, that was then exported successfully to Poland, to create a new platform 'Moje', and more recently to the Czech Republic with France and Italy scheduled to follow to complete the 'Model bank' project.

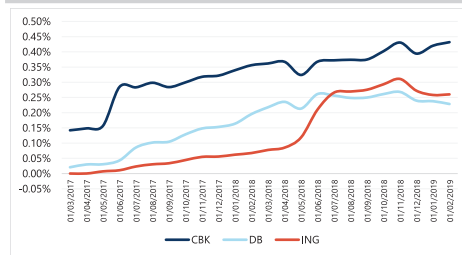
Despite the low market share in Spain, the actual download and usage penetration levels rank well, especially when compared to a large player like Santander. But, the most interesting graph is the sessions per user (chart 14). It is not the fact that again ING is above its peers, but the trajectory of the sessions per user. It illustrates that at the introduction of ING's disruptive strategy at the start of 2017, the sessions per user were nearly at 12x as customers wanted to explore the different products ING offered (e.g. mobile, energy deals etc) and then normalized at around 2x by August 2018. We believe the high number of sessions in 2017 were driven by ING Spain's innovative approach as its vision of banking was close to a shopping experience - it should be easy and friendly, and interestingly ING benchmarked its brand vs well-known retailers instead of other retail banks. We believe the different experience ING was providing was seen as a novelty, and resulted in a high number of sessions in the initial years. Even though we got a good overview of the Spanish operations at Q4 results, we are looking forward to an update on its vision of being the disrupter of the banking world.

Chart 6 - Germany - Install penetration



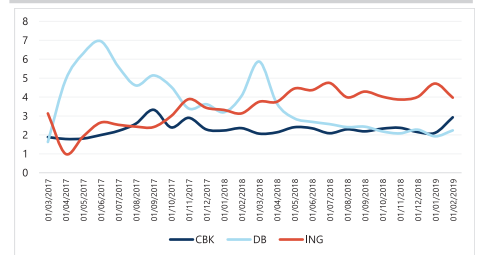
Source: Jefferies, SimilarWeb

Chart 7 - Germany - Usage penetration



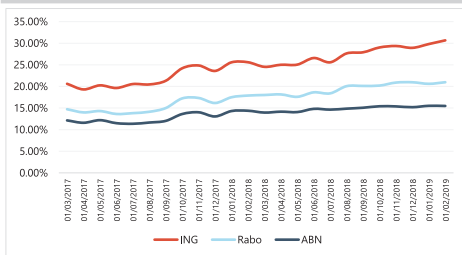
Source: Jefferies, SimilarWeb

Chart 8 - Germany - Sessions per user



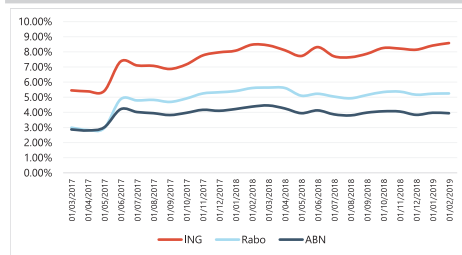
Source: Jefferies, SimilarWeb

Chart 9 - NL - Install penetration



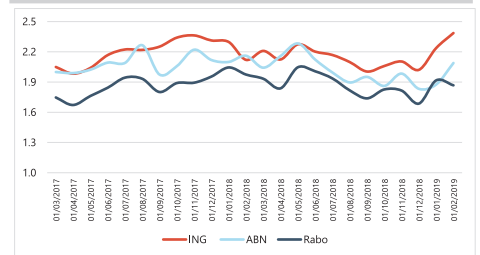
Source: Jefferies, SimilarWeb

Chart 10 - NL - Usage penetration



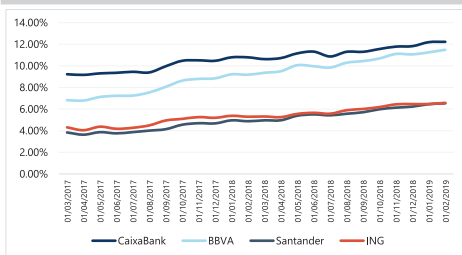
Source: Jefferies, SimilarWeb

Chart 11 - NL - Sessions per user



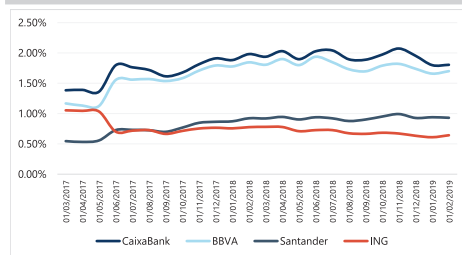
Source: Jefferies, SimilarWeb

Chart 12 - Spain - Install penetration



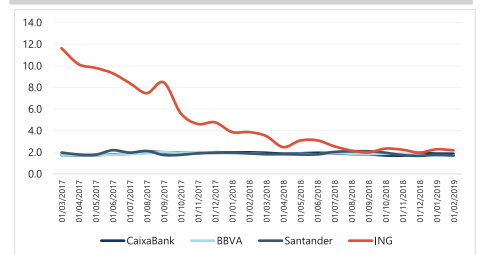
Source: Jefferies, SimilarWeb

Chart 13 - Spain - Usage penetration



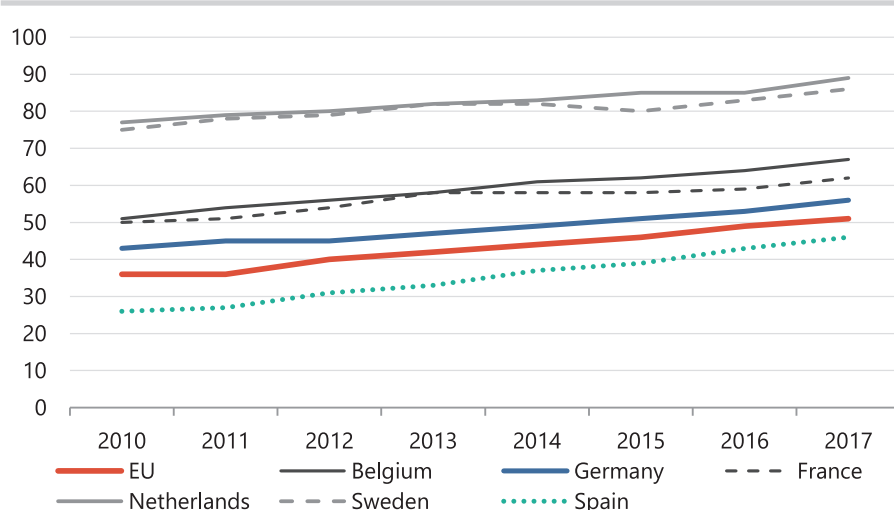
Source: Jefferies, SimilarWeb

Chart 14 - Spain - Sessions per user



Source: Jefferies, SimilarWeb

Chart 15 - EU Internet banking usage (%)



Source: Jefferies, ECB

Business transformation

The 2016 transformation plan was mainly focused on these projects:

Orange bridge - creating an integrated universal platform for Belgium and Netherlands (market leaders). Most of the transition has been focused on Belgium to align to the Dutch agile way of working.

- *2018 milestones:* c. 600k Record bank customers were migrated to ING and introduced to ING's customer experience. In Belgium, all former Record bank mortgages and consumer products migrated to an external provider, moving closer to decommissioning of systems.
- 2019 / 2020 goals: Run Belgium and Netherlands on a shared Omnichannel platform.

Model bank - five countries (Spain, Italy, CZ, Austria and France) will be on the same best-in-class digital platform, expanding digital capabilities and products. The platform should eventually serve 7m clients, yielding better cost efficiency.

- *2018 milestones:* In CZ, 400k customers migrated onto a new retail platform.
- 2019 / 2020 goals: Introduce Italy and France activities to the new platform.

Welcome - a banking platform in Germany with investments targeting standardization and automation.

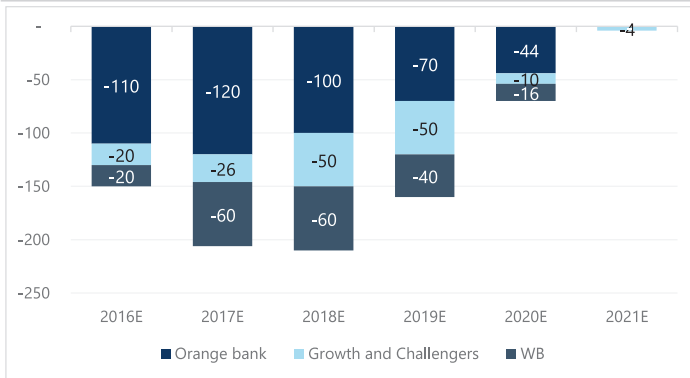
- *2018 milestones:* Digitalization and operational excellence initiatives continued, e.g. a new feature for mortgage disbursements and the automation of back-office dispute holding.
- 2019 / 2020 goals: Complete the agile working project in Germany by summer 2019.

Wholesale - Targeted operating model (TOM) platform was introduced in 2012, but ING continues enhancing it, with the 2016 plan focused on improving the front-to-back processes.

- *2018 milestones:* the same standardized contract for account opening offered to customers.
- 2019 / 2020 goals: further cost optimisation.

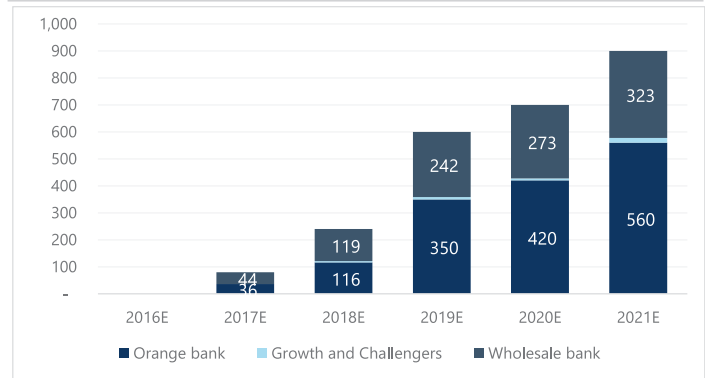
The investment cost of the 2016 plan was €800m with a target for accumulated savings of €900m by 2021. We estimate that so far c.52% of the investment cost has been spent against a delivery of 27% of the savings plan with most of the benefits starting to be visible in 2019 (charts 16 and 17) as based on our estimates 40% of the planned savings will be delivered.

Chart 16 - Jefferies allocation of €800m investment cost for '16-'21



Source: Jefferies estimates

Chart 17 - Jefferies allocation of €900m accumulated savings for '16-'21



Source: Jefferies estimates

What do we expect from the ING investor day?

Efficiency

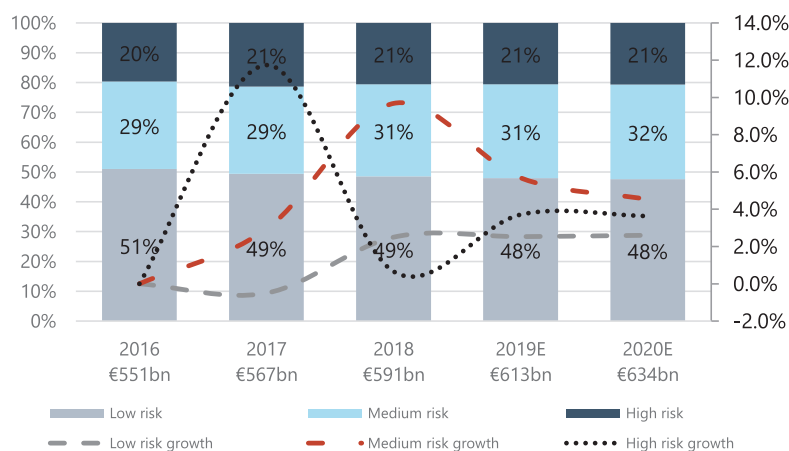
ING is managing its cost-to-income ratio via 'operational leverage', thus, with the rate hike delay and a weaker European macro environment, we expect further cost synergies so it can meet its '20 Cost to Income ambition of 50%-52%. **Further saving initiatives might come at a restructuring cost**; in 2016 the charge was €1.0bn.

Cost of risk

Considering the strong growth in the lending book ('16-'18 CAGR +3.5%) and strong growth in high risk and medium risk loans (chart 17), we are keen to understand whether there will be an update on the *cost of risk guidance that is currently at 40-45bps of RWAs through the cycle*, **especially as a number of different forces are pointing to different directions**. On the upside, with the rate hike delay the rates will stay lower for longer removing the expected burden on customers' capabilities to serve their debt. Also, we believe that ING, thanks to its digital technology and good knowledge of its primary customers, should be able to note a change in trends sooner than its competitors and reduce its exposure when needed.

On the downside, IFRS 9 creates some volatility, especially in the bucket two that is driven by macro scenarios. At the Q4 earnings call many banks reported on a turn in the cycle followed by recent GDP growth downgrades for the Eurozone countries.

Chart 18 - Lending portfolio 2016A - 2020E



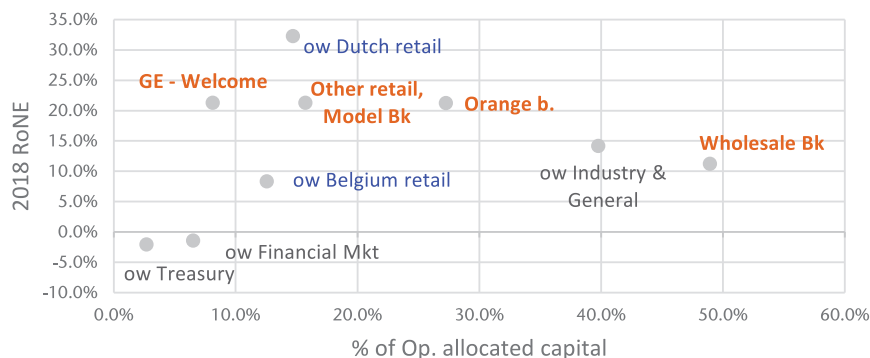
* Low risk = mortgages, medium risk = general and industry lending, high risk = personal lending

Source: Jefferies estimates, company data

Capital allocation

Based on our analysis, ING wholesale banking is underwriting the most profitable business on RWAs within the peer group; however, with ING moving ahead with Basel IV pricing, we expect **re-focus on its wholesale lending activities to mitigate the impact of Basel IV and for it to exit the least profitable business lines**. We expect small changes in the retail business as there is limited scope for capital arbitrage, especially on the Dutch and C&G retail networks delivering >20% RoNE. but capital allocated is <20% vs 40% for Industry and General lending.

Chart 19 - Capital allocation vs RoNE



Source: Jefferies, company data

ING has a very strong underwriting policy that is based on loan appraisals of cash flow generation, rather than the asset value, and it has been a standard to keep all underwritten commitments on the balance sheet for the full life of a contract. However, ING could follow the recent market trend of turning to the originate-to-distribute model to protect the capital usage and reduce the cost of risk.

Solvency

The current capital target is set at CET1 13.5% under Basel IV rules, with a 'progressive' dividend'. In our view, there will be **no major changes to solvency targets**, especially regarding a pay-out. With the Q4 results we flagged that banks have become more defensive on capital distribution due to a changing economic cycle and the fact that capital rules are in transition. In addition, we were never believers in big pay-outs considering the bail-out history of Benelux banks as that would further infuriate the public as was the case with a recent proposed pay increase for the CEO.

Last, but not least - Compliance issues

Major litigation closed in 2018, only for 2019 to bring further regulatory challenges. First, early in February newspapers reported on two events: The laundromat schemes in Russia, which claimed to implicate the Russian branch in Moscow in 2013, according to the press and, per ING IR, the account was subsequently closed that year. The second case discussed in the same article related to ING Belgium, which served as a correspondent bank for a Lithuanian bank with Russian clients engaged in suspicious transactions. On the second report, it is key to highlight that ING reported these activities to the authorities and ended the relationship with the Lithuanian bank in 2009. ING reached out to the domestic regulator when these articles were published; however, there has been no input from the regulator so far, which we read as positive.

The most recent regulatory issue is the outcome of the Bank of Italy's review of the AML controls. In the Bol's view, there is a shortage of staff dealing with new client on-boarding leading to a ban of on-boarding new clients until this issue is resolved. ING is actively working with the Bol to address it. To put this in context, ING Italy has c. 1.4m customers; the branch employs 911 people with a €17bn balance sheet and €231m revenues in 2018, which accounts for 1.3% and 1.9% of the group's balance sheet and revenues respectively. In 2018, the Italian operations recorded a loss of €123m on reclassification of assets as the leasing portfolio was put up for a sale.

While both cases raise litigation concerns, it is key to highlight that ING has been working with the regulators on the identified issues. This is especially with regard to the case on the Lithuanian bank as ING was proactive and upfront on the suspicious activities and reported the issue to the regulators in a timely manner. This sort of conduct is viewed very differently by the regulators, even if there has been a breach of controls, and in our view may lower the size of a potential fine as well as the chances of it becoming an actual litigation case.

Chart 20 - ING Financial Forecasts

	2015	2016	2017	2018	2019E	2020E	2021E		2016	2017	2018	2019E	2020E	2021E
Condensed P&L (€m)								% YoY						
Total income	16,552	17,458	17,706	18,097	18,391	18,950	20,496		5%	1%	2%	2%	3%	8%
ow Domestic retail activities	6,949	7,010	6,942	6,856	6,721	6,753	7,238		1%	-1%	-1%	-2%	0%	7%
ow Others retail activities	4,318	4,782	4,919	5,307	5,555	5,804	6,256		11%	3%	8%	5%	4%	8%
ow Wholesale activities	5,570	5,608	5,923	5,781	5,951	6,253	6,853		1%	6%	-2%	3%	5%	10%
ow Corporate Line	- 285	59	78	173	164	140	150		-121%	-232%	-322%	-6%	-15%	7%
- Clean Revenues	16,401	17,345	17,622	18,077	18,391	18,950	20,496		6%	2%	3%	2%	3%	8%
Operating expenses	9,246	9,456	9,829	9,907	9,650	9,824	10,264		2%	4%	1%	-3%	2%	4%
Gross operating income	7,306	8,002	7,877	8,191	8,741	9,126	10,233		10%	-2%	4%	7%	4%	12%
Cost of risk	1,347	974	678	657	1,091	1,423	2,570		-28%	-30%	-3%	66%	31%	81%
Operating income	5,959	7,029	7,198	7,533	7,650	7,702	7,662		18%	2%	5%	2%	1%	-1%
Others non-operating items	0	0	0	0	0	0	0		-	-	-	-	-	-
Pre-tax income	5,959	7,029	7,198	7,533	7,650	7,702	7,662		18%	2%	5%	2%	1%	-1%
- Clean pre-tax income	6,428	7,859	8,178	8,564	8,202	8,116	7,856		22%	4%	5%	-4%	-1%	-3%
NET INCOME	4,529	4,177	4,957	4,623	5,507	5,619	5,587		-8%	19%	-7%	19%	2%	-1%
Hybrid costs	90	135	170	185	185	185	185		50%	26%	9%	0%	0%	0%
Non-Bank contribution	520	475	52	104	-	-	-		na	na	na	na	na	na
ING GROUP NET INCOME	3,919	4,517	4,735	4,541	5,321	5,433	5,402		15%	5%	-4%	17%	2%	-1%
- ING Group Net income Clean	4,136	4,966	5,111	5,263	5,005	4,974	4,739		20%	3%	3%	-5%	-1%	-5%
GROUP Data per share														
Stated EPS (€)	1.01	1.17	1.22	1.17	1.37	1.40	1.39		15%	5%	-4%	17%	2%	-1%
Clean EPS (€)	1.07	1.28	1.32	1.36	1.29	1.28	1.22		20%	3%	3%	-5%	-1%	-5%
Net DPS (€)	0.65	0.66	0.67	0.68	0.74	0.77	0.76		2%	2%	1%	9%	4%	-1%
Pay-out ratio	64%	57%	55%	58%	54%	55%	55%							
Dividend Yield	6.4%	4.9%	4.4%	7.2%	6.7%	7.0%	7.0%							
BVPS (€)	12.4	12.9	13.0	13.1	13.8	14.4	15.8		4%	1%	1%	5%	5%	10%
TBVPS (€)	12.0	12.5	12.6	12.7	13.3	14.0	15.4		4%	1%	1%	5%	5%	10%
NOSH (avg diluted) (m)	3,862	3,873	3,878	3,881	3,885	3,885	3,885							
Capital & Solvency														
CET1 capital FL B3	40.8	44.6	45.6	45.5	47.9	50.3	52.8		9%	2%	0%	5%	5%	5%
FL B3 RWAs	313.8	314.3	309.9	314.1	332.7	346.8	367.1		0%	-1%	1%	6%	4%	6%
CET1 ratio FL B3	13.0%	14.2%	14.7%	14.5%	14.4%	14.5%	14.4%							
Tier 1 FL B3 Capital	47.4	52.3	50.7	50.8	53.3	55.7	58.2							
Tier 1 FL B3 ratio	15.1%	16.6%	16.4%	16.2%	16.0%	16.1%	15.8%							
Capital Rotation (Rev./CET 1 Cap)	40.6%	39.2%	38.9%	39.8%	38.4%	37.6%	38.8%							
EQUITY RATIOS														
Stated RoE	8.0%	9.3%	9.5%	9.0%	10.2%	9.9%	9.2%							
Clean RoE	8.4%	10.2%	10.2%	10.4%	9.6%	9.1%	8.1%							
Stated RoTE	8.4%	9.6%	9.8%	9.3%	10.5%	10.2%	9.5%							
Clean RoTE	8.9%	10.5%	10.5%	10.7%	9.9%	9.4%	8.3%							
Group Key financial ratios														
Stated Revenues/average assets	1.83%	1.92%	2.05%	2.09%	2.09%	2.13%	2.22%							
Clean Revenues/average Assets	1.81%	1.90%	2.04%	2.09%	2.09%	2.13%	2.22%							
Stated Revenues/average RWA	5.28%	5.52%	5.71%	5.80%	5.69%	5.58%	5.74%							
Clean Revenues/average RWA	5.23%	5.49%	5.68%	5.79%	5.69%	5.58%	5.74%							
Stated Cost/Income	55.9%	54.2%	55.5%	54.7%	52.5%	51.8%	50.1%							
Clean Cost/Income	52.6%	49.1%	49.7%	49.0%	49.5%	49.7%	49.1%							
Stated LLP/avg loans	0.25%	0.18%	0.12%	0.11%	0.18%	0.23%	0.40%							
Stated LLP/avg RWA	0.43%	0.31%	0.22%	0.21%	0.34%	0.42%	0.72%							
Loss absorption ratio vs Avg loans	1.73%	1.72%	1.73%	1.69%	1.59%	1.57%	1.59%							
Nil/average assets	1.47%	1.53%	1.58%	1.61%	1.61%	1.64%	1.73%							
Key balance sheet items (€m)														
Loans and receivables due from customers	537	564	575	639	617	637	650		5%	2%	11%	-3%	3%	2%
Intangibles	1.6	1.5	1.5	1.8	1.8	1.8	1.8		-5%	-1%	25%	0%	0%	0%
TOTAL ASSETS	842	1,042	846	887	873	905	937		24%	-19%	5%	-2%	4%	4%
Due to customers	509	523	540	556	556	556	572		3%	3%	3%	0%	0%	3%
Total minority interests	0.6	0.6	0.7	0.7	0.7	0.7	0.7		-5%	18%	0%	0%	0%	0%
Ordinary shareholders' equity	47.8	49.8	50.4	50.9	53.5	56.1	61.5		4%	1%	1%	5%	5%	10%
Asset Quality														
NPL's / gross total loans (ex repos)	3%	2%	2%	2%	2%	2%	2%							
Coverage Ratio	38%	40%	40%	39%	39%	39%	38%							
GROUP Free cash flow (€bn)														
Gross free cash flow	2.3	4.4	5.3	4.0	3.1	3.8	3.0							
Gross free cash flow / RWAs	0.7%	1.4%	1.7%	1.3%	0.9%	1.1%	0.8%							
Net free cash flow	0.2	1.9	2.7	1.4	0.3	0.8	0.1							
Net free cash flow / RWAs	-0.1%	0.6%	0.9%	0.4%	0.1%	0.2%	0.0%							

Source: Company data, Jefferies estimates

We make very minor revisions to estimates in advance of the investor day; there is no impact on net income.

Exhibit 6 - Jefferies estimates

ING	New JEF forecast €m			Change in JEF forecast (%)		
	2019	2020	2021	2019	2020	2021
Total income	18,391	18,950	20,496	0.2%	0.0%	-0.1%
Operating expenses	(9,650)	(9,824)	(10,264)	0.6%	0.0%	0.0%
Gross operating income	8,741	9,126	10,233	-0.2%	0.0%	-0.2%
Cost of risk	(1,091)	(1,423)	(2,570)	-1.3%	-0.3%	-0.7%
Operating income	7,650	7,702	7,662	-0.1%	0.1%	0.0%
Equity affiliates	-	-	-	-	-	-
Other	-	-	-	-	-	-
Pre-tax income	7,650	7,702	7,662	-0.1%	0.1%	0.0%
Tax	(2,066)	(2,003)	(1,992)	-0.1%	0.1%	0.0%
Net income	5,585	5,700	5,670	-0.1%	0.1%	0.0%
Non-controlling interests	- 78	- 81	- 83	-5.5%	-5.8%	-5.4%
Group net income	5,507	5,619	5,587	0.0%	0.2%	0.1%
EPS	1.37	1.40	1.39	0.0%	0.2%	0.1%
DPS	0.74	0.77	0.76	0.0%	0.2%	0.1%
Pay-out	54%	55%	55%	0.0%	0.0%	0.0%
CET1	14.4%	14.5%	14.4%	0.1%	0.3%	0.3%
RoE adj	9.6%	9.1%	8.1%	0.6%	0.2%	0.1%

Source: Jefferies estimates

Exhibit 7 - Jefferies estimates vs Consensus

	Jefferies Estimates €m			Consensus €m			JEF vs consensus (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Total income	18,391	18,950	20,496	18,347	18,925	19,464	0.2%	0.1%	5.3%
Operating expenses	(9,650)	(9,824)	(10,264)	(10,014)	(10,099)	(10,194)	-3.6%	-2.7%	0.7%
Gross operating income	8,741	9,126	10,233	8,366	8,874	9,380	4.5%	2.8%	9.1%
Cost of risk	(1,091)	(1,423)	(2,570)	(1,118)	(1,337)	(1,499)	-2.4%	6.5%	71.5%
Operating income	7,650	7,702	7,662	7,223	7,491	7,827	5.9%	2.8%	-2.1%
Equity affiliates	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Pre-tax income	7,650	7,702	7,662	7,223	7,491	7,827	5.9%	2.8%	-2.1%
Tax	(2,066)	(2,003)	(1,992)	(1,959)	(1,958)	(2,033)	5.4%	2.3%	-2.0%
Net gain/(loss) from held-for:	0	0	0	-	-	-	-	-	-
Net income	5,585	5,700	5,670	5,264	5,533	5,794	6.1%	3.0%	-2.1%
Non-controlling interests	- 78	- 81	- 83	- 105	- 105	- 110	-25.8%	-22.9%	-24.6%
Group net income	5,507	5,619	5,587	5,237	5,431	5,680	5.2%	3.5%	-1.6%
Retail Netherlands	2,191	2,082	1,948	2,143	2,109	2,157	2.2%	-1.3%	-9.6%
Retail Belgium	685	717	780	696	844	929	-1.6%	-15.0%	-16.0%
Retail Germany	917	920	929	857	892	899	7.1%	3.1%	3.4%
Retail Other Challengers and	996	1,011	1,024	989	1,032	1,132	0.7%	-2.0%	-9.5%
Underlying results before ta	4,789	4,730	4,681	4,665	4,909	5,076	2.7%	-3.7%	-7.8%
Industry lending	2,229	2,238	2,242	2,006	2,015	2,031	11.1%	11.0%	10.4%
General lending & transactio	841	887	769	719	743	772	16.9%	19.3%	-0.3%
Financial Markets	(27)	44	110	3	23	19	na	na	na
Bank Treasury & Other	(107)	(102)	(57)	77	71	77	na	na	na
Underlying results before ta	2,936	3,066	3,064	2,784	2,829	2,864	5.4%	8.4%	7.0%
Corporate Line Banking	(74)	(93)	(83)	(203)	(188)	(170)	-63.5%	-50.3%	-51.2%
Underlying results before ta	7,650	7,702	7,662	7,208	7,458	7,757	6.1%	3.3%	-1.2%
EPS	1.37	1.40	1.39	1.35	1.40	1.46	1.5%	-0.1%	-4.8%
DPS	0.74	0.77	0.76	0.69	0.70	0.73	7.2%	9.9%	5.5%
Pay-out	54%	55%	55%	51%	50%	50%	5.7%	10.0%	10.8%
CET1	14.4%	14.5%	14.4%	14.7%	14.9%	15.1%	-2.0%	-2.7%	-4.8%
RWAs (EoP, bnl)	333	347	367	324	336	344	2.6%	3.3%	6.7%
RoE adj	9.6%	9.1%	8.1%	10.1%	10.1%	10.0%	-4.7%	-10.0%	-19.3%
C/I	52.5%	51.8%	50.1%	54.5%	52.9%	51.9%	-3.7%	-2.0%	-3.5%

Source: Jefferies estimates, company data

Company Description

ING Groep N.V.

ING Bank N.V. provides various banking services in the Netherlands, Belgium, Rest of Europe, North America, Latin America, Asia, and Australia. The company operates through Retail Netherlands, Retail Belgium, Retail Germany, Retail Other, and Wholesale Banking segments. It accepts current and savings accounts; and offers business lending, mortgage, and other consumer lending products. The company also provides payments and cash management, corporate finance, real estate, leasing, factoring, and treasury services, as well as equity and debt capital market solutions. It serves individuals, small and medium-sized enterprises, mid-corporates, financial institutions, governments, and supranational bodies. The company was incorporated in 1927 and is headquartered in Amsterdam, the Netherlands. ING Bank N.V. is a subsidiary of ING Groep N.V.

Company Valuation/Risks

ING Groep N.V.

We apply several valuation methodologies - P/E, P/TBV (Gordons Growth), P/PPP and sum of the parts. The valuation blend is based on a mix of Bull, Bear & Base scenarios. Risks: a slower implementation of the plan than expected, which would delay the cost synergies and slower European macro growth. Another money laundering case undermining ING's reputation.

Analyst Certification:

I, Maxence Le Gouvello Du Timat, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security(ies) and subject company(ies). I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

I, Martina Matouskova, ACA, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security(ies) and subject company(ies). I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

I, Joseph Dickerson, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security(ies) and subject company(ies). I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

I, Benjie Creelan-Sandford, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security(ies) and subject company(ies). I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

Registration of non-US analysts: Maxence Le Gouvello Du Timat is employed by Jefferies International Limited, a non-US affiliate of Jefferies LLC and is not registered/qualified as a research analyst with FINRA. This analyst(s) may not be an associated person of Jefferies LLC, a FINRA member firm, and therefore may not be subject to the FINRA Rule 2241 and restrictions on communications with a subject company, public appearances and trading securities held by a research analyst.

Registration of non-US analysts: Martina Matouskova, ACA is employed by Jefferies International Limited, a non-US affiliate of Jefferies LLC and is not registered/qualified as a research analyst with FINRA. This analyst(s) may not be an associated person of Jefferies LLC, a FINRA member firm, and therefore may not be subject to the FINRA Rule 2241 and restrictions on communications with a subject company, public appearances and trading securities held by a research analyst.

Registration of non-US analysts: Joseph Dickerson is employed by Jefferies International Limited, a non-US affiliate of Jefferies LLC and is not registered/qualified as a research analyst with FINRA. This analyst(s) may not be an associated person of Jefferies LLC, a FINRA member firm, and therefore may not be subject to the FINRA Rule 2241 and restrictions on communications with a subject company, public appearances and trading securities held by a research analyst.

Registration of non-US analysts: Benjie Creelan-Sandford is employed by Jefferies International Limited, a non-US affiliate of Jefferies LLC and is not registered/qualified as a research analyst with FINRA. This analyst(s) may not be an associated person of Jefferies LLC, a FINRA member firm, and therefore may not be subject to the FINRA Rule 2241 and restrictions on communications with a subject company, public appearances and trading securities held by a research analyst.

As is the case with all Jefferies employees, the analyst(s) responsible for the coverage of the financial instruments discussed in this report receives compensation based in part on the overall performance of the firm, including investment banking income. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Aside from certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgement.

Investment Recommendation Record

(Article 3(1)e and Article 7 of MAR)

Recommendation Published March 18, 2019 , 10:38 ET.
Recommendation Distributed March 19, 2019 , 01:00 ET.

Explanation of Jefferies Ratings

Buy - Describes securities that we expect to provide a total return (price appreciation plus yield) of 15% or more within a 12-month period.

Hold - Describes securities that we expect to provide a total return (price appreciation plus yield) of plus 15% or minus 10% within a 12-month period.

Underperform - Describes securities that we expect to provide a total return (price appreciation plus yield) of minus 10% or less within a 12-month period.

The expected total return (price appreciation plus yield) for Buy rated securities with an average security price consistently below \$10 is 20% or more within a 12-month period as these companies are typically more volatile than the overall stock market. For Hold rated securities with an average security price consistently below \$10, the expected total return (price appreciation plus yield) is plus or minus 20% within a 12-month period. For Underperform rated securities with an average security price consistently below \$10, the expected total return (price appreciation plus yield) is minus 20% or less within a 12-month period.

NR - The investment rating and price target have been temporarily suspended. Such suspensions are in compliance with applicable regulations and/or Jefferies policies.

CS - Coverage Suspended. Jefferies has suspended coverage of this company.

NC - Not covered. Jefferies does not cover this company.

Restricted - Describes issuers where, in conjunction with Jefferies engagement in certain transactions, company policy or applicable securities regulations prohibit certain types of communications, including investment recommendations.

Monitor - Describes securities whose company fundamentals and financials are being monitored, and for which no financial projections or opinions on the investment merits of the company are provided.

Valuation Methodology

Jefferies' methodology for assigning ratings may include the following: market capitalization, maturity, growth/value, volatility and expected total return over the next 12 months. The price targets are based on several methodologies, which may include, but are not restricted to, analyses of market risk, growth rate, revenue stream, discounted cash flow (DCF), EBITDA, EPS, cash flow (CF), free cash flow (FCF), EV/EBITDA, P/E, PE/growth, P/CF, P/FCF, premium (discount)/average group EV/EBITDA, premium (discount)/average group P/E, sum of the parts, net asset value, dividend returns, and return on equity (ROE) over the next 12 months.

Jefferies Franchise Picks

Jefferies Franchise Picks include stock selections from among the best stock ideas from our equity analysts over a 12 month period. Stock selection is based on fundamental analysis and may take into account other factors such as analyst conviction, differentiated analysis, a favorable risk/reward ratio and investment themes that Jefferies analysts are recommending. Jefferies Franchise Picks will include only Buy rated stocks and the number can vary depending on analyst recommendations for inclusion. Stocks will be added as new opportunities arise and removed when the reason for inclusion changes, the stock has met its desired return, if it is no longer rated Buy and/or if it triggers a stop loss. Stocks having 120 day volatility in the bottom quartile of S&P stocks will continue to have a 15% stop loss, and the remainder will have a 20% stop. Franchise Picks are not intended to represent a recommended portfolio of stocks and is not sector based, but we may note where we believe a Pick falls within an investment style such as growth or value.

Risks which may impede the achievement of our Price Target

This report was prepared for general circulation and does not provide investment recommendations specific to individual investors. As such, the financial instruments discussed in this report may not be suitable for all investors and investors must make their own investment decisions based upon their specific investment objectives and financial situation utilizing their own financial advisors as they deem necessary. Past performance of the financial instruments recommended in this report should not be taken as an indication or guarantee of future results. The price, value of, and income from, any of the financial instruments mentioned in this report can rise as well as fall and may be affected by changes in economic, financial and political factors. If a financial instrument is denominated in a currency other than the investor's home currency, a change in exchange rates may adversely affect the price of, value of, or income derived from the financial instrument described in this report. In addition, investors in securities such as ADRs, whose values are affected by the currency of the underlying security, effectively assume currency risk.



Notes: Each box in the Rating and Price Target History chart above represents actions over the past three years in which an analyst initiated on a company, made a change to a rating or price target of a company or discontinued coverage of a company.

Legend:

I: Initiating Coverage

D: Dropped Coverage

B: Buy

H: Hold

UP: Underperform

Distribution of Ratings

Distribution of Ratings						
			IB Serv./Past12 Mos.		JIL Mkt Serv./Past12 Mos.	
	Count	Percent	Count	Percent	Count	Percent
BUY	1150	55.29%	96	8.35%	13	1.13%
HOLD	792	38.08%	10	1.26%	1	0.13%
UNDERPERFORM	138	6.63%	1	0.72%	0	0.00%

Other Important Disclosures

Jefferies does business and seeks to do business with companies covered in its research reports, and expects to receive or intends to seek compensation for investment banking services among other activities from such companies. As a result, investors should be aware that Jefferies 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.

Jefferies Equity Research refers to research reports produced by analysts employed by one of the following Jefferies Group LLC ("Jefferies") group companies:

United States: Jefferies LLC which is an SEC registered broker-dealer and a member of FINRA (and distributed by Jefferies Research Services, LLC, an SEC registered Investment Adviser, to clients paying separately for such research).

United Kingdom: Jefferies International Limited, which is authorized and regulated by the Financial Conduct Authority; registered in England and Wales No. 1978621; registered office: Vintners Place, 68 Upper Thames Street, London EC4V 3BJ; telephone +44 (0)20 7029 8000; facsimile +44 (0)20 7029 8010.

Hong Kong: Jefferies Hong Kong Limited, which is licensed by the Securities and Futures Commission of Hong Kong with CE number ATS546; located at Suite 2201, 22nd Floor, Cheung Kong Center, 2 Queen's Road Central, Hong Kong.

Singapore: Jefferies Singapore Limited, which is licensed by the Monetary Authority of Singapore; located at 80 Raffles Place #15-20, UOB Plaza 2, Singapore 048624, telephone: +65 6551 3950.

Japan: Jefferies (Japan) Limited, Tokyo Branch, which is a securities company registered by the Financial Services Agency of Japan and is a member of the Japan Securities Dealers Association; located at Hibiya Marine Bldg, 3F, 1-5-1 Yuraku-cho, Chiyoda-ku, Tokyo 100-0006; telephone +813 5251 6100; facsimile +813 5251 6101.

India: Jefferies India Private Limited (CIN - U74140MH2007PTC200509), which is licensed by the Securities and Exchange Board of India as a Merchant Banker (INM000011443), Research Analyst (INH000000701) and a Stock Broker with Bombay Stock Exchange Limited (INB011491033) and National Stock Exchange of India Limited (INB231491037) in the Capital Market Segment; located at 42/43, 2 North Avenue, Maker Maxity, Bandra-Kurla Complex, Bandra (East) Mumbai 400 051, India; Tel +91 22 4356 6000.

This report was prepared by personnel who are associated with Jefferies (Jefferies International Limited, Jefferies Hong Kong Limited, Jefferies Singapore Limited, Jefferies (Japan) Limited, Jefferies India Private Limited); or by personnel who are associated with both Jefferies LLC and Jefferies Research Services LLC ("JRS"). Jefferies LLC is a US registered broker-dealer and is affiliated with JRS, which is a US registered investment adviser. JRS does not create tailored or personalized research and all research provided by JRS is impersonal. If you are paying separately for this research, it is being provided to you by JRS. Otherwise, it is being provided by Jefferies LLC. Jefferies LLC, JRS, and their affiliates are collectively referred to below as "Jefferies". Jefferies may seek to do business with companies covered in this research report. As a result, investors should be aware that Jefferies may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only one of many factors in making their investment decisions. Specific conflict of interest and other disclosures that are required by FINRA and other rules are set forth in this disclosure section.

If you are receiving this report from a non-US Jefferies entity, please note the following: Unless prohibited by the provisions of Regulation S of the U.S. Securities Act of 1933, as amended, this material is distributed in the United States by Jefferies LLC, which accepts responsibility for its contents in accordance with the provisions of Rule 15a-6 under the US Securities Exchange Act of 1934, as amended. Transactions by or on behalf of any US person may only be effected through Jefferies LLC. In the United Kingdom and European Economic Area this report is issued and/or approved for distribution by Jefferies International Limited ("JIL") and is intended for use only by persons who have, or have been assessed as having, suitable professional experience and expertise, or by persons to whom it can be otherwise lawfully distributed.

JIL allows its analysts to undertake private consultancy work. JIL's conflicts management policy sets out the arrangements JIL employs to manage any potential conflicts of interest that may arise as a result of such consultancy work. Jefferies LLC, JIL and their affiliates, may make a market or provide liquidity in the financial instruments referred to in this report; and where they do make a market, such activity is disclosed specifically in this report under "company specific disclosures".

For Canadian investors, this material is intended for use only by professional or institutional investors. None of the investments or investment services mentioned or described herein is available to other persons or to anyone in Canada who is not a "Designated Institution" as defined by the Securities Act (Ontario). In Singapore, Jefferies Singapore Limited ("JSL") is regulated by the Monetary Authority of Singapore. For investors in the Republic of Singapore, this material is provided by JSL pursuant to Regulation 32C of the Financial Advisers Regulations. The material contained in this document is intended solely for accredited, expert or institutional investors, as defined under the Securities and Futures Act (Cap. 289 of Singapore). If there are any matters arising from, or in

connection with this material, please contact JSL, located at 80 Raffles Place #15-20, UOB Plaza 2, Singapore 048624, telephone: +65 6551 3950. In Japan, this material is issued and distributed by Jefferies (Japan) Limited to institutional investors only. In Hong Kong, this report is issued and approved by Jefferies Hong Kong Limited and is intended for use only by professional investors as defined in the Hong Kong Securities and Futures Ordinance and its subsidiary legislation. In the Republic of China (Taiwan), this report should not be distributed. The research in relation to this report is conducted outside the People's Republic of China ("PRC"). This report does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. In India, this report is made available by Jefferies India Private Limited. In Australia, this information is issued solely by JIL and is directed solely at wholesale clients within the meaning of the Corporations Act 2001 of Australia (the "Act"), in connection with their consideration of any investment or investment service that is the subject of this document. Any offer or issue that is the subject of this document does not require, and this document is not, a disclosure document or product disclosure statement within the meaning of the Act. JIL is authorised and regulated by the Financial Conduct Authority under the laws of the United Kingdom, which differ from Australian laws. JIL has obtained relief under Australian Securities and Investments Commission Class Order 03/1099, which conditionally exempts it from holding an Australian financial services license under the Act in respect of the provision of certain financial services to wholesale clients. Recipients of this document in any other jurisdictions should inform themselves about and observe any applicable legal requirements in relation to the receipt of this document.

This report is not an offer or solicitation of an offer to buy or sell any security or derivative instrument, or to make any investment. Any opinion or estimate constitutes the preparer's best judgment as of the date of preparation, and is subject to change without notice. Jefferies assumes no obligation to maintain or update this report based on subsequent information and events. Jefferies, and their respective officers, directors, and employees, may have long or short positions in, or may buy or sell any of the securities, derivative instruments or other investments mentioned or described herein, either as agent or as principal for their own account. This material is provided solely for informational purposes and is not tailored to any recipient, and is not based on, and does not take into account, the particular investment objectives, portfolio holdings, strategy, financial situation, or needs of any recipient. As such, any advice or recommendation in this report may not be suitable for a particular recipient. Jefferies assumes recipients of this report are capable of evaluating the information contained herein and of exercising independent judgment. A recipient of this report should not make any investment decision without first considering whether any advice or recommendation in this report is suitable for the recipient based on the recipient's particular circumstances and, if appropriate or otherwise needed, seeking professional advice, including tax advice. Jefferies does not perform any suitability or other analysis to check whether an investment decision made by the recipient based on this report is consistent with a recipient's investment objectives, portfolio holdings, strategy, financial situation, or needs.

By providing this report, neither JRS nor any other Jefferies entity accepts any authority, discretion, or control over the management of the recipient's assets. Any action taken by the recipient of this report, based on the information in the report, is at the recipient's sole judgment and risk. The recipient must perform his or her own independent review of any prospective investment. If the recipient uses the services of Jefferies LLC (or other affiliated broker-dealers), in connection with a purchase or sale of a security that is a subject of these materials, such broker-dealer may act as principal for its own accounts or as agent for another person. Only JRS is registered with the SEC as an investment adviser; and therefore neither Jefferies LLC nor any other Jefferies affiliate has any fiduciary duty in connection with distribution of these reports.

The price and value of the investments referred to herein and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

This report has been prepared independently of any issuer of securities mentioned herein and not as agent of any issuer of securities. No Equity Research personnel have authority whatsoever to make any representations or warranty on behalf of the issuer(s). Any comments or statements made herein are those of the Jefferies entity producing this report and may differ from the views of other Jefferies entities.

This report may contain information obtained from third parties, including ratings from credit ratings agencies such as Standard & Poor's. Reproduction and distribution of third party content in any form is prohibited except with the prior written permission of the related third party. Jefferies does not guarantee the accuracy, completeness, timeliness or availability of any information, including ratings, and is not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, or for the results obtained from the use of such content. Third-party content providers give no express or implied warranties, including, but not limited to, any warranties of merchantability or fitness for a particular purpose or use. Neither Jefferies nor any third-party content provider shall be liable for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses,

legal fees, or losses (including lost income or profits and opportunity costs) in connection with any use of their content, including ratings. Credit ratings are statements of opinions and are not statements of fact or recommendations to purchase, hold or sell securities. They do not address the suitability of securities or the suitability of securities for investment purposes, and should not be relied on as investment advice.

Jefferies research reports are disseminated and available electronically, and, in some cases, also in printed form. Electronic research is simultaneously made available to all clients. This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of Jefferies. Neither Jefferies nor any of its respective directors, officers or employees, is responsible for guaranteeing the financial success of any investment, or accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents. Nothing herein shall be construed to waive any liability Jefferies has under applicable U.S. federal or state securities laws.

For Important Disclosure information relating to JRS, please see https://adviserinfo.sec.gov/IAPD/Content/Common/crd_iapd_Brochure.aspx?BRCHR_VRSN_ID=483878 and <https://adviserinfo.sec.gov/Firm/292142> or visit our website at <https://javatar.bluematrix.com/sellside/Disclosures.action>, or www.jefferies.com, or call 1.888.JEFFERIES.

© 2019 Jefferies Group LLC