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6th November 2018

Unicredit needs €35 billion more capital

Precis

Unicredit shareholders should inject of €35 billion of new capital in order to make this bank compliant with Basel III levels. The current capital of €45.1 billion needs to be written down by nearly of €13 billion to adjust the value of its holding in Yapi Kredi, to mark-to-market its large portfolio of Italian public sector bonds, and to adequately provision both its Non-Performing Loans and its continued exposure to its incomplete Fino project. In addition, Unicredit's methodology for calculating its risk-weighted assets ("RWAs") is highly aggressive, given its track record of delivering high levels of Non-Performing Loans. Unicredit states its RWAs as of €361 billion, whilst we believe that a figure of €707 billion would be more realistic. RWAs of €707 billion need to supported with 9.5% or €67 billion of CET1 capital for Unicredit to reach compliance with Basel III requirements. Unicredit currently claims to have surplus CET1 capital but our view is different. The write-downs would reduce its capital to €32 billion, and it needs to have €67 billion. That is a gap of €35 billion. The shareholders need to pay this in for the bank to make good on its claims of resilience.

What is Lyddon Consulting?

A specialist consultancy in payments and electronic banking. We have recently acted as advisor regarding the UK payments landscape to a trade body representing UK Payment Institutions and to a major payments communications cooperative reviewing their UK market positioning.

Previous work on Unicredit:

- "Analysis of Unicredit 2017 rights issue of March 2017
- "Unicredit out of the frying pan?" of December 2017
- Both papers examined the supposed recapitalisation of Unicredit S.p.A.: "an examination of the capital adequacy of Unicredit SpA in the light of (i) the accounting of its 13-for-5 rights issue; (ii) its level of provisioning for Bad and Doubtful Debts; and (iii) the accounting of its investments in its banking subsidiaries"

Other relevant work:

- "TARGET imbalances" of August 2017: an exploration of the source of the debts within the TARGET2 payment system and of the veracity of the ECB's method of presenting the net position of each participating central bank, and then of presenting the net-net position on its own books;
- "The European Central Bank is bound upon a wheel of fire: it cannot raise interest rates or reduce its Asset Purchase Programmes without a risk of bankrupting itself" of October 2017: an examination of the quantum of the ECB's exposure through APP, the relationship to its own capital resources, how profits and losses on APP are passed by the national central banks to the ECB, and under what circumstances the ECB would go bankrupt.

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Registered for VAT in the UK under registration number 838 5410 17

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Introduction
Unicredit has been part of the recent European Banking Authority stress tests and has passed with a reasonably clean bill of health, as banking supervisors continue to accept Unicredit's assertions – made most recently in its H1 2018 Results presentation – about progress against its "Transform 2019" programme.

In our view Unicredit's CET1 capital of €45.1 billion should be subjected to write-downs of nearly €13 billion, mainly because of over-valuation of Non-Performing Loans ("NPLs"), both the ones still in their own portfolio and the ones that Unicredit claimed were spun off in the Fino project but on which the bank still carries a major risk of loss.

Then there is the question of the quality of the Performing Loans, given the measures employed both to ensure that loans do not fall into the NPL category and to back out loans already in it. Unicredit's risk-weighted assets ("RWAs") can be read as a 58.41% discount of the face value of its "on-balance-sheet" assets, with no RWAs associated with any "off-balance-sheet" business, or else as an even bigger discount on its "on-balance-sheet" assets, with an undisclosed amount supporting "off-balance-sheet" business.

A 58.41% discount is very high for a bank that has generated such a large amount of NPLs in the past, and it is our view that a 30% discount would be more appropriate, with a cushion for "off-balance-sheet" of €100 billion. This pushes RWAs up to €707 billion, against which Unicredit should hold 9.5% CET1 capital, or €67 billion.

On that basis Unicredit comes out as what it is and what common sense tells us is the situation of a major bank in a country that is over-indebted and with weak economic growth: the bank is badly under-capitalised, with NPLs at the same levels as before "Transform 2019". The only differences between then and now are firstly that the Fino portfolio of bad loans has been spun off into a structure that Unicredit is funding and which should be put back on the balance sheet, and secondly that the shareholders have paid in €13 billion in early 2017 to fund various write-downs that were taken in late 2016 amounting to €13 billion.

The shareholders now need to be asked for €35 billion more. This would firstly fund the new write-downs of nearly €13 billion and enable capital to remain at €45 billion. The remaining €22 billion would bring the bank's CET1 capital up from €45 billion to the €67 billion where it would exceed 9.5% of its RWAs, Unicredit's hurdle as a Level 1 Global Systemically Important Bank.

Sources of new write-downs of nearly €13 billion against Unicredit's capital
The new write-downs come under 4 headings:

1. Yapi Kredi Bankasi;
2. Bond portfolio;
3. Non-Performing Loans retained after the Porto and Fino projects;
4. The Fino project.

Yapi Kredi
Unicredit owns 40.9% of Yapi Kredi Bankasi in Turkey. The 2017 annual report of Yapi shows its Shareholders' Funds as TKL30,101,826,000. Unicredit's share of that, at 40.9%, is TKL €12,311,646,830.

At the €/TKL exchange rate of €1 = TKL4.547 prevailing on 31/12/17, this stake would have been valued in Unicredit's books at €2,707,641,705.

At the current exchange rate of €1 = TKL6.372, the stake is worth 1,932,147,965.

That is a difference of €775,493,740, or about €775.5 million

Italian government, government agency, regional and municipal authority, and public sector entity bonds
Unicredit's 2017 annual report showed it as owning "Financial Assets held for trading" of €74.7 billion. Much has been written about the supposed "doom loop" whereby Italian banks are the main lenders to the Italian government.

We do not entirely subscribe to that view, since it has also been much written up that it is the Eurosystem – through its Asset Purchase Programmes – that has been the main buyer in the secondary market of Italian government debt. These Asset Purchase Programmes have been running for some years, and at a level of purchases of €40-60 billion per month, and recent research has put the Eurosystem's holdings on Republic of Italy bonds at €350 billion.

Unicredit's holdings are not enormous by comparison with those amounts, but nevertheless it is reasonable to assume that 50% of Unicredit's book is in the form of Italian government bonds, or of bonds issued by Italian government agencies, regional or municipal authorities, or other public sector entities, the yields on which closely track the yields on Republic of Italy bonds.

Unicredit can reasonably be assumed to hold €37.35 billion of such securities, and with an average maturity mirroring the mean duration of Republic of Italy bonds: 7 years.

Yields have risen by approximately 2% in that tenor, causing a drop in price of approximately 14%. We can safely posit that Unicredit's bond portfolio has dropped in value since 31/12/17 by 14% of €37.35 billion, or €5.23 billion.

We should note that these assets will be enjoying a very low risk-weighting in Unicredit's books, because they count as Italian public sector risk. The risk-weighting may well be 0%. Nevertheless, they will have generated a loss of 14%.

That is a perfect example of the fallibility of the risk-weighting methodologies used by major banks, and upon which credit rating agencies, central banks and banking supervisors set such store.

General level of Non-Performing Loans ("NPLs")

Unicredit made a major show in Q4 2016 of their plan to spin off a portfolio of NPLs – the Fino project – and to reduce the value in their books of their remaining NPLs – the Porto project.

These projects accounted for a major share of the write-downs in Q4 2016 that the Q1 2017 rights issue proceeds were applied to.

Fino involved a significant reduction in the valuation of that portfolio of NPLs in Unicredit's books prior to its being de-consolidated.

The 2016 Annual Report showed the valuations after these write-downs, and the relative size of the Fino portfolio and the portfolio that was to be retained:

€ billions	**Total NPLs**	**Fino**	**Residual/Porto**
Gross value (amount in loan contract)	53.9	17.0	36.9
Carrying value (amount in Unicredit's books)	18.3	2.2	16.1
Write-down (difference between Gross and Carrying values)	35.6	14.8	20.8
Coverage (% Gross value written off)	66.05%	87.06%	56.37%

Fino was de-consolidated at the end of 2016, and we will come on to how it is accounted for now, because Unicredit continues to have significant connections to it.

Looking at the residual NPLs that are on Unicredit's balance sheet and based on the H1 2018 Group Results presentation, we have a situation that is confused by NPLs now being carried in two different portfolios – in "CORE" on slide 31 and in "NON-CORE" in slide 36.

Nevertheless we can extract the group-wide trajectory of NPLs from Q4 2016 until now:

€ billions	**1/12/16 Incl Fino**	**31/12/16 Ex-Fino**	**31/12/17**	**31/3/18**	**30/6/18**
Gross value	53.9	36.9	48.5	44.5	42.6
Carrying value	18.3	16.1	21.2	17.7	16.6
Write-down	35.6	20.8	27.3	26.8	26.0
Coverage	66.05%	56.37%	56.29%	60.22%	61.03%

Despite the de-consolidation of Fino in Q4 2016, and despite the Porto write-down, NPLs actually rose in 2017. They still remain above the 31/12/16 level, though with coverage 5% higher than then.

This hardly merits the plaudits that have been heaped upon Unicredit for an improvement in Asset Quality (plaudits mainly heaped by itself).

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Inadequate Coverage of “Bad Exposures” and “Unlikely to Pay”

The main NPL constituents are the categories “Bad Exposures” and “Unlikely to Pay”. The third category - “Past Due and Non-Performing” - contains a very small value of €1 billion gross, with a Carrying value of €0.7 billion, meaning a write-down of €0.3 billion and a Coverage of 30%.

The figures against the main NPL constituents of “Bad Exposures” and “Unlikely to Pay” at 30/6/18 were:

€ billions	Bad Exposures	Unlikely to Pay	NP&PD	Total
Gross value	24.1	17.5	1.0	42.6
Carrying value	6.3	9.6	0.7	16.6
Write-down	17.8	7.9	0.3	26.0
Coverage	73.86%	45.14%	30.00%	61.03%

These figures are still higher than after the Fino de-consolidation. In addition the Fino portfolio was taken from the gross value of “Bad Exposures” at the time of €36.2 billion, and reduced it by €17.0 billion to €19.2 billion. Now it has gone up again to €24.1 billion.

Unicredit still manages to overvalue its NPLs. The valuation basis is its own, not a market-tested one or even a logical one.

Grounded benchmarks for the valuation of “Bad Exposures” and “Unlikely to Pay” would be:

- For “Bad Exposures”, Unicredit could not contest the usage of the same Carrying value that the Fino portfolio was written down to at the point of its de-consolidation, as Fino consisted entirely of “Bad Exposures”. That was 12.94% of face value. The Coverage under this heading thus needs to be increased by 13.20% from 73.86% to 87.06%;
- For “Unlikely to Pay”, a Coverage of 45.14% indicates the loans are “Likely to Pay”, because the loan is valued at over 50%. A more logical Coverage would be 60%, 14.86% more than now.

To bring its Coverage of these two categories up to the benchmark levels, Unicredit should take further write-downs as follows:

€ billions	Gross value	% write-down	Write-down in €
Bad Exposures	24.1	13.20%	3.18
Unlikely to Pay	17.5	14.86%	2.60
Total			5.78

That is a further write-down of €5.78 billion.

Even then, the fate of the Fino 1 and Fino 2 transactions indicates that the market put a valuation on the underlying NPL portfolios that was lower than the 12.94% of face value that was paid to Unicredit by the securitisation vehicle company. Of course the “Bad Exposures” still in portfolio are not the same loans as the Fino ones, but there is enough evidence below to support the view that 12.94% was an over-valuation of the Fino portfolio, such that the correct benchmark for the “Bad Exposures” left in Unicredit’s portfolio lies somewhere below what we have used as the benchmark here.

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Treatment of the Fino project

As we have seen, the Fino project involved the de-consolidation into Special Purpose Vehicle companies ("SPVs") of a Carrying value of €2.2 billion of "Bad Exposures" in Q4 2016.

The SPVs were then supposed to refinance themselves by issuing several tranches of bonds to third-parties.

Unicredit's version of this "market-based recapitalisation" (to use the term coined by the Italian authorities) was anomalous in several respects, compared to similar transactions made by banks like Banco Popolare di Verona:

- Unicredit owned, and continues to own, 49% of the SPVs;
- Four tranches of bonds were issued by the SPVs, not three, and Unicredit owned and still owns a portion of all the tranches;
- Only €769.9 million of funding has been subject to public ratings reports so far, in the form of the tranches shown in the Moody's rating report for the A, B and C tranches of Fino 1 Securitisation Srl;
- This leaves €1.43 billion relating to Fino 2 in some kind of semi-completed state.

The Moody's rating report for Fino 1 Securitisation Srl shows the following amounts issued against the respective tranches:

A. €650.0 million – rated A2
B. €29.6 million – rated Ba3
C. €40.0 million - rated B1
D. €50.3 million - unrated

The tranches in a transaction under a "normal" template would have been issued and subscribed as follows:

A. By Unicredit itself, because this tranche carries a Republic of Italy guarantee, and can be held as a 0% risk-weighted asset;
B. By hedge funds, the party that market-tests the transaction because they are the only genuine third-party interested in evaluating risk against return;
C. By the Atlante II investment fund, a form of cooperative established by the Italian banking industry as a vehicle through which to create a layer of credit enhancement for transactions of this type, on the basis that all the banks invest in Atlante II, and then Atlante II invests in every bank's securitisation transactions.

The subject bank would not have retained any of the B or C tranches, nor have had any ownership of the SPV. Unicredit, by contrast, owns 49% of the SPV(s), and has holdings in all tranches – including the Tranche D.

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Significance of the insertion of the D Tranche
Tranche D has the same impact as a thick layer of equity in the SPV would do. The SPV is very thinly capitalised, and the equity constitutes a very thin loss-absorbing layer.

Tranche D is more substantial, and it stands just above the SPV's equity on its creditor ladder, meaning that Tranche D is the main bearer of any first loss by the SPV.

The capitalisation of the SPV is structured as layers bearing first, second, third and final loss, which is the same as saying that each layer acts as credit enhancement for the layers above.

The insertion of a D tranche infers that the layer of credit enhancement supplied by Tranche C was not large enough to comfort the holders of Tranche B, and that an extra, doubly subordinated loss-absorbing cushion was needed as Tranche D in order to induce third-parties to subscribe to Tranche B.

This is the same as saying that the Fino portfolio was regarded as over-valued by the prospective investors in Tranche B at a price of 12.94% of face value, meaning a Coverage of 87.06%. If re-financing €769.9 million of the €2.2 billion required extra credit enhancement of €50.3 million, this is the same as saying that the market-tested value of this part of the Fino portfolio was not €769.9 million but €719.6 million. The market valued it at 93.47% of the value for which the SPV had bought it.

Applied to the entire Fino portfolio, the SPVs should have bought it for 93.47% of €2.2 billion, or for €2.06 billion - at best. The Fino portfolio, having a Gross value of €17.0 billion, should have been subjected to a write-down of €14.94 billion or 87.88%, and not 87.06%.

Unicredit itself has had to subscribe to the D Tranche in whole or in part, to get the Fino 1 Securitisation deal away.

But the re-financing tranches for the Fino 2 Securitisation deal – the remaining €1.43 billion of the original €2.2 billion – appear to have been created but not rated, and not placed with third-party investors. No public ratings reports exist for Fino 2.

Unicredit press release about Fino of February 2018
Unicredit issued a press release on 7th February 2018 with the impressive title "Unicredit completes the final phase of Project Fino". It announced that Unicredit had reduced its own holdings in Tranches B, C and D – but not in Tranche A – in both Fino 1 and Fino 2.

The press release contained more than one surprise: firstly that a Tranche D existed at all, and secondly that Unicredit held any of Tranches B, C and D in either Fino 1 or Fino 2.

It was known that Unicredit had de-consolidated Fino whilst owning 49% of the SPVs' equity. This was already quite close to the edge of the rules around de-consolidation. But with Unicredit holding a substantial portion of all the Tranches of the SPVs' re-financing, de-consolidation of Fino should not have been allowed to go ahead. Otherwise it is simply too easy to disappear NPLs into "off-balance-sheet" structures.

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The press release tells us that Unicredit has disposed of a "portion" of the B, C and D notes in Fino 1, which we know totaled €29.6 mil (B), €40 mil (C) and €50.3 mil (D).

But we do not know either how much of these tranches Unicredit owned when they were created, nor how much they have sold off. As such the information is meaningless.

Similarly regarding Fino 2, where we do not even know the original value of these A, B, C or D tranches, nor how much Unicredit started off owning, nor what they have now sold off.

What we do know is that none of the Fino 2 tranches have been rated, and this is a vital point.

Current status of Fino 2

We can conclude that Fino 2 amounts to €1.43 billion as the press release states that the entire remainder of the Fino project has been completed, and without mentioning a Fino 3 or a Fino 4.

€1.43 billion is the Carrying value of the Fino book when it was de-consolidated (€2.2 billion) less the entirety of tranches A, B, C and D of Fino 1 (€769.9 mil).

We can take it that Fino 2 sits in the same state as Fino 1 did when it was first de-consolidated, and before any third-party re-financing was closed.

That means that Unicredit itself is extending most if not all of that €1.43 billion funding to Fino 2, as well as continuing to extend a good proportion of the funding of Fino 1.

The backing for both transactions is the same portfolio of Bad Exposures that it used to own directly. We have good evidence for the market taking the view that the Fino 1 package was over-valued at €769.9 million by €50.3 million.

The failure of Fino 2 to complete can be taken as a token that the remaining, Fino 2 portfolio was of even lower quality than Fino 1: Unicredit have not been able to complete the third-party re-financing of this portion at even 93% of what the SPV paid, and Unicredit is left holding the baby:

- Providing all of the funding for Fino 2, meaning €1.43 billion;
- Providing possibly all of Tranche A for Fino 1, and a meaningful proportion – let's say half - of the other Tranches,
- For Fino 1 that would be (100% x €650.0 million) plus (50% x €119.9 million), meaning €709.95 million;
- €2.14 billion in all across both Fino 1 and Fino 2.

Unicredit's accounting of its interests in Fino 1 and 2
Unicredit appears to be accounting for this funding in its own books as a series of normally-weighted, Performing Loans, inserted into their risk-weighted assets ("RWAs") methodology and being supported by capital in a given proportion.

If the asset itself is €2.14 billion and if the average risk-weighting applied by Unicredit to its assets of 41.59% is also applied here, the capital held against the Fino assets will be €2.14 billion x 41.59% x 9.5% = €84.55 million (see below for calculation of the average risk-weighting applied by Unicredit to its assets).

That is 4% of the assets' value, which implies that Unicredit's Fino assets are of high quality, when in fact they are loans to the SPVs which have no capital and are backed by "Bad Exposures", within which the Fino 2 "Bad Exposures" may well be worthless.

Unicredit is providing over 50% of all the re-financing of the Fino SPVs, so the Fino portfolio of assets should not have been de-consolidated.

The Fino portfolio should be re-consolidated into Unicredit's NPL figures, at the level of their original Carrying value (€2.2 billion) less the third-party re-financing that has been secured. After this first step Unicredit would have – according to our calculations – added €2.14 billion to the Carrying value of its NPLs, and €16+ billion to their Gross value.

Given the lack of recovery on the Fino portfolio between 2016 and now, and given that they were drawn from NPLs graded as "Bad Exposures" then, there is a case for a further write-down of 50% of the re-consolidated Carrying value, or €1.07 billion.

Total of impairments against Unicredit Shareholders Funds
We can therefore build a strong case that Unicredit's Shareholders Funds should be reduced by €12.86 billion:

Source	Impairment
Yapi Kredi	€0.78 billion
Bond portfolio	€5.23 billion
NPLs in portfolio	€5.78 billion
Fino project	€1.07 billion
Total	€12.86 billion
Unicredit Shareholders Funds at 30/6/18	€45.10 billion
Reduction as above	€12.86 billion
Revised Unicredit Shareholders Funds	€32.24 billion

The figure taken for the current level of Unicredit's Shareholders Funds at 30/6/18 is the one for Fully-loaded CET1 Group capital as per slide 52 of the H1 2018 presentation.

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Risk-weighted assets ("RWAs") as per H1 2018 presentation
The question then arises as to how much risk is being borne by that amount of Shareholders Funds.

Unicredit maintain that it was €360.7 billion on 30/6/18, this being their figure for their RWAs as per slide 39.

CET1 ratio as per H1 2018 presentation
With CET1 Group capital of €45.1 billion being divided into the RWAs of €360.7 billion, Unicredit's key CET1 ratio on 30/6/18 was 12.51%, according to slide 38.

However, slide 52 gives Unicredit's supposed Leverage Ratio, fully loaded, as being 5.20% at the end of Q2 2018. CET1 Group capital of €45.1 billion divided by this 5.20% delivers a figure for non-risk-weighted assets of €867.31 billion.

This is close to the Balance Sheet footing, or Total Assets, in the consolidated accounts of the group for 31/12/17 of €836.79 billion (p82 of the consolidated accounts). It could be that the equivalent figure as at 30/6/18 was €867.31 billion, and that Unicredit's RWAs are simply 41.59% of the non-risk-weighted assets on its balance sheet.

Put another way, Unicredit's internal risk-weighting methodology permits it to apply an average 58.41% discount to the face value of its assets in order to derive their value against which Unicredit should hold CET1 capital.

That is very generous – to itself.

If CET1 Group capital is only €32.24 billion as per our revision, and if risk-weighted assets remain at €360.7 billion, Unicredit's CET1 ratio falls to 8.93%, which is below compliance level for Unicredit as a Level 1 Global Systemically Important Bank.

By the same token and if non-risk-weighted assets are €867.31 billion as extrapolated above, Unicredit's Leverage Ratio under its reduced capital is 3.71%, and not the minimum of 5% required by Basel III.

Reliability of RWAs assets figure
The figure for RWAs needs to be taken with some skepticism, when one considers the amount of NPLs this bank has racked up.

An average discount from the face value of assets of 58.41% to determine their risk-weighted value stretches credibility, firstly when we take account of the level of NPLs, and secondly regarding the risk-of-loss in the Performing Loans, given that a proportion of these have been massaged back to life from giving out the vital signs that they are Non-Performing.

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The Cyprus banking system has been remarkably open about the usage of "Forbearance" techniques and "Restructurings" to manage down NPL figures, enabling loans on which no debt service has been received from the borrower to be backed out the NPLs figure. The loan can then be assigned a risk-weighting as a Performing Loan.

"Forbearance" includes capitalisation of interest, lengthening the repayment period, building in grace periods and so on: in other words, not requiring the borrower to pay what is owed and in arrears.

"Restructuring" usually includes the pledging of extra security, and normally this is real estate.

Knowing that the European banking regulators have agreed to the usage of such techniques in Cyprus, it is perfectly possible that they are also being used in Italy. Indeed, the small value of Unicredit's loans in the status "Past Due and Non-Performing" supports this view.

A loan has to be "Past Due" as well as "Non-Performing" to be classified in that category, so if the arrears are rolled back into the principal amount, the loan no longer counts as "Past Due".

It is in this category that the bank has the greatest discretion over measures to remove a loan from NPLs, and similarly the same measures can be used to prevent loans from falling into this category in the first place.

We have the raw material here for loans of questionable quality to be either moved out of NPLs or prevented from falling into them, and then assigned a risk-weighting associated with a Performing Loan. This is what has happened in Cyprus and against a similar background to that in Italy, where NPL levels were far in excess of regulatory capital levels.

Capital allocated behind Performing and Non-Performing Loans

An NPL should either be written down to a Carrying value of 10-70% of face depending upon how badly impaired it is, or else it should have capital of between 30-90% of face allocated to it in an RWA model.

These techniques have the same effect on the bank's Profit&Loss account and on its capital. If it is done in the latter way, the NPL is inserted into the RWA model with its face value multiplied by 300%-900%.

A Performing Loan of the mean quality in a bank's portfolio would normally be assigned a risk-weighting of 100%, so that it is inserted into the RWA model at its face value. The loan needs then to be supported with exactly the same ratio of capital as Basel III rules demand: 9.5% of the loan's value, made up of:

- 6% Tier 1 base;
- 2.5% mandatory capital conservation buffer;
- 1% extra for Unicredit as a Level 1 Global Systemically Important Bank.

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A bank like Unicredit can spare itself, as a guideline, 20.5% capital as a proportion of the loan, if it can avoid the loan entering NPL status or if it can withdraw it from NPL status once it is in there. This is the difference between the capital allocated behind the least bad NPL – 30% - and that allocated behind a Performing Loan of mean quality – 9.5%.

But it can go further than this – as Unicredit has – by discounting the face value of the mean-quality asset by 58% within the risk-weighting methodology, so that its assets at face value of €867 billion become risk-weighted assets of €361 billion.

Unicredit's compliance target is to hold 9.5% of capital against the RWAs figure, and this it achieves with ease based on capital of €45.1 billion.

One of the features of the financial crisis was the over-favorable weightings assigned to loans generally, and especially ones with real estate security ("Restructurings" of NPLs depend heavily on this type of security).

On 30th October Reuters reported statements from the ECB as to their current concerns and focus, and they included internal pricing models: the ECB "will also conduct a targeted review of banks' internal models for calculating risk to reduce unwarranted deviation from its own expectation".

19.84% - the average degree of mis-statement

Unicredit's risk-weighted assets, under the kind of harsher system that Europe's banking regulators claim to have installed, could easily turn out to be higher than they are being reported.

In this paper we have seen the share in Yapi Kredi, the bond portfolio, "Bad Exposures", "Unlikely to Pay", and the bank's CET1 capital requiring downwards adjustments of 28.6%, 14%, 13.2% and 14.9%, and 28.5% respectively.

19.84% is the arithmetical average of those percentages and if the valuation of RWAs turns out to be wayward by this degree, their correct value would be €432.26 billion. This by no means implausible when non-risk-weighted assets appear to be €867.31 billion. In fact all this would do is reduce the discount that Unicredit has allowed itself to apply to the face value of its assets from 58.41% to 49.84%.

No account taken of "Off-balance-sheet" business

There is another perspective that makes Unicredit's RWAs figure implausible: the figure of €867.31 billion for non-risk-weighted assets is so close to the Total Assets on Unicredit's balance sheet at 31/1217 that it appears that its extensive "off-balance-sheet" business in derivatives contracts has not been factored in.

Those contracts involve a risk of loss and are therefore part of a bank's RWAs methodology: the face value of the transaction has a Credit Conversion Factor applied to it that represents the likelihood of loss, and the resulting value is inserted into the RWA methodology in the same way as a loan.

Against this perspective, Unicredit's statement of its risk-weighted assets becomes wholly implausible.

It is a 58.41% discount against its "on-balance-sheet" assets, and a 100% discount on its "off-balance-sheet" risks, resulting in a discount considerably higher than 58.41% on the totality of its risk-bearing business.

Even allowing for an error of 19.84% and raising RWAs to €432.26 billion, this latter figure does not feel like it is enough:

- Given the current methodology's track record of delivering vast amounts of NPLs;
- Unicredit's "on-balance-sheet" assets being €867.31 billion;
- The known size of its derivative business.

It would in our view be more realistic for Unicredit to allow itself only a 30% discount on its "on-balance-sheet" assets and to build in a loss-absorbing buffer for its "off-balance-sheet" business of €100.00 billion.

Given the available information and taking Unicredit's non-risk-weighted, "on-balance-sheet" assets at €867.31 billion, Unicredit's RWAs would then be (70% x €867.31 billion) + €100.00 billion = €707.17 billion.

Why has Unicredit's RWA methodology been approved?

Outsiders will not realise the degree to which methodologies are benchmarked against a bank's domestic peer group, and then against the peer group in other EU countries.

Under-valuation of RWAs was a feature of the last crisis, and it has not been eradicated.

Italian banking regulators have approved Unicredit's RWA methodology no doubt because of its similarities to those of its domestic peer group, and then the Italian banking regulators have liaised – directly and through both the ECB and the European Banking Authority – with banking regulators in the other Eurozone countries to see whether the methodologies in place there correlate to the ones being used by the Italian banks.

All the methodologies will have been gone over by a "Big Four" auditing company and found to be in line with accepted norms i.e. with the methodologies of the domestic and Eurozone peer group.

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What is Unicredit's CET1 ratio?
A bank's CET1 ratio is the result of dividing its own statement of its CET1 capital amount, into its own statement of its RWAs.

If Unicredit's CET1 capital is its own figure of €45.1 billion, its ratio is as follows given the range of possible RWA figures:

RWAs definition	RWAs amount	CET1 amount	CET1 ratio	Basel hurdle	Variance
As Unicredit presents them	€360.7 billion	€45.1 billion	12.5%	9.5%	+3.0%
50% of "on-balance-sheet" assets	€432.26 billion	€45.1 billion	10.4%	9.5%	+0.9%
70% of "on-balance-sheet" assets plus €100.00 billion cushion for "off-balance-sheet" assets	€707.17 billion	€45.1 billion	6.4%	9.5%	-3.1%

- Unicredit is scarcely adequately capitalised if its RWAs are rated at 50% of its "on-balance-sheet" assets, with no account at all taken of its "off-balance-sheet" assets";
- It is substantially under-capitalised if the highest figure of the three is taken for RWAs;
- This is based on its own stated CET1 capital.

However, if Unicredit's CET1 capital is adjusted as per our calculations down to €32.24 billion, it is under-capitalised at every level of RWAs:

RWAs definition	RWAs amount	CET1 amount	CET1 ratio	Basel hurdle	Variance
As Unicredit presents them	€360.7 billion	€32.24 billion	8.9%	9.5%	-0.6%
50% of "on-balance-sheet" assets	€432.26 billion	€32.24 billion	7.5%	9.5%	-2.0%
70% of "on-balance-sheet" assets plus €100.00 billion cushion for "off-balance-sheet" assets	€707.17 billion	€32.24 billion	4.6%	9.5%	-4.9%

Valuing Unicredit's "on-balance-sheet" assets at 70% of their face value, and then adding a discretionary cushion of €100.00 billion cushion for "off-balance-sheet" assets, feels conservative and resilient: if a bank had 12.5% CET1 capital against the resulting total, it could be said with confidence that the bank was equipped to ride out another crisis.

Unicredit's RWA figure is just over half of that, discounting "on-balance-sheet" assets" by 58.41% and having no cushion for "off-balance-sheet" assets.

Its RWAs appear to us to be materially under-stated.

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Conclusion
In our view Unicredit's capital is materially over-stated, and should be reduced on account of Yapi Kredi, its bond portfolio, its "on-balance-sheet" NPLs, and its Fino assets.

Their 40.9% share in Yapi Kredi Bankasi and the "Financial assets held for trading" will be subject to considerable downwards adjustments during 2018.

Benchmarked against both the Fino valuation and logic, the NPL categories "Bad Exposures" and "Unlikely to Pay" are over-valued by 13.2% and 14.9% respectively, or by €5.78 billion in total.

Much greater public disclosure is required about the Fino project as from Q4 2016 to date. In our view the Fino project should not have been de-consolidated as Unicredit has 49% ownership of the securitisation vehicle through which Fino was transacted, and is providing a major share of the re-financing. As it is, we believe Unicredit should take a write-down of €1.07 billion on the re-financing it is providing to the Fino securitisation vehicle.

These write-downs add up to €12.86 billion, which go straight against CET1 capital and reduce it from €45.1 billion to €32.24 billion.

On top of this we believe that the NPL figures have been artificially reduced by the application of "Forbearance" and "Restructuring", causing renewed reliance on real estate security, as well as increasing Performing Loans without the borrower having needed to make any debt service.

The upshot of such manipulations is to reduce RWAs:

- By backing NPLs into Performing Loans and precluding Performing Loans from falling down into NPL status;
- By applying optimistically low risk-weightings to Performing Loans, especially to those that had been – or which should have fallen into – the classification of NPLs.

This massaging of NPL figures is, in our opinion, part-and-parcel of a methodology for risk-weighting the bank's "on-balance-sheet" and "off-balance-sheet" business that substantially understates its risks.

Unicredit's own figure for its RWAs represents a discount of 58.41% on its "on-balance-sheet" assets with no cushion for its "off-balance-sheet" assets. Given the track record of that methodology in producing vast levels of NPLs, it is our view that a 30% discount would be appropriate to "on-balance-sheet" assets", and a cushion of €100.00 billion for "off-balance-sheet" assets, resulting in an RWAs figure of €707.17 billion.

Unicredit would require capital of 9.5% of this amount to be compliant with Basel III, or €67 billion. It is short by €22 billion of this figure now and needs to make €13 billion of write-offs.

Shareholders thus need to pay in €35 billion of new capital.

The €13 billion they paid in via a rights issue in Q1 2017 has not transformed the bank. Its capital is over-stated and its RWAs under-stated, with the result that the bank is as substantially under-capitalised as it was before the project "Transform 2019".

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