

November 24th, 2015

Monetary policy and bank shares: how do banks live in the world of high excess reserves, negative deposit rates and slow credit growth?

Summary

Our opinion is that:

The direct cost of ECB policy rates for the banking system is low and mainly paid by weakly capitalized banks from the periphery. A further reduction of the deposit rate with no change in the so-called “corridor” would not change substantially that cost, nor would it increase excess reserves. These are mainly the consequence of liquidity injections by the ECB (LTRO, MRO, QE, ELA) and have no significant impact on credit growth, which is mainly the consequence of supply (GDP growth, deviations from the Taylor rule, market sentiment) and demand (capital requirements, risk appetite, available liquidity), but can impact negatively the leverage ratio of large wholesale banks. In a highly regulated world where ROE is driven by regulatory formulas, credit growth is mostly relevant for the few capital rich banks with limited payouts and for banks with high NPLs ratios which need to be replaced by performing loans. Lower rates impact bank profitability through different channels, from NII dynamics to balance sheet management (AFS securities, pension liabilities) or business mix (asset management vs. lending, etc.), but banks are generally negatively geared to lower rates. As it is the case for rates themselves (down before QE, up after) the market consensus tends to front-run the negative impact of QE on bank profitability before QE is actually announced. Crucially, QE also tends to sharply reduce risk premium and discount rates applicable to share valuation, leading to multiple expansion that often more than compensate the reduced consensus expectations. Post QE, consensus tends to bounce back and multiples to stabilize.

The link between monetary policy and bank profitability is a highly complex subject. In this note we outline a few aspects of it.

1. What are excess reserve requirements and the deposit facility?

Central banks over the world typically ask banks to keep cash at the central bank as a buffer against unexpected liquidity shocks. This is called “*reserve requirements*”. Depending on their cash available at the end of the day, banks will either have excess cash at the central bank (“excess reserves”) or have to take money from a funding facility (collateralized lending, or “Lombard” facility.) In some countries (e.g. US) there is no deposit facility as excess reserves are effectively deposits. In the Eurozone, there are different cutoff times for the excess reserves and the deposit facility, so they are not strictly equivalent.

2. What is the rate on these facilities at the ECB and the cost for the banking system?

Generally speaking, the deposit rate is above the rate paid on excess reserves – which used to be 0 -, meaning that treasurers have an incentive to use the deposit facility. However, in 2014, with the introduction of negative rates, the ECB (ECB/2014/23) decided that excess reserves would be remunerated at the minimum of 0 or the deposit rate. In practice, currently, excess reserves and deposits have exactly the same rate (-0.2%). Reserves requirements are however still remunerated at 0.05%, which means that any increase of minimum reserves would actually be globally positive for the banking sector. As a whole, the cost of the funding and deposit facilities for the banking sector can be estimated as follows:

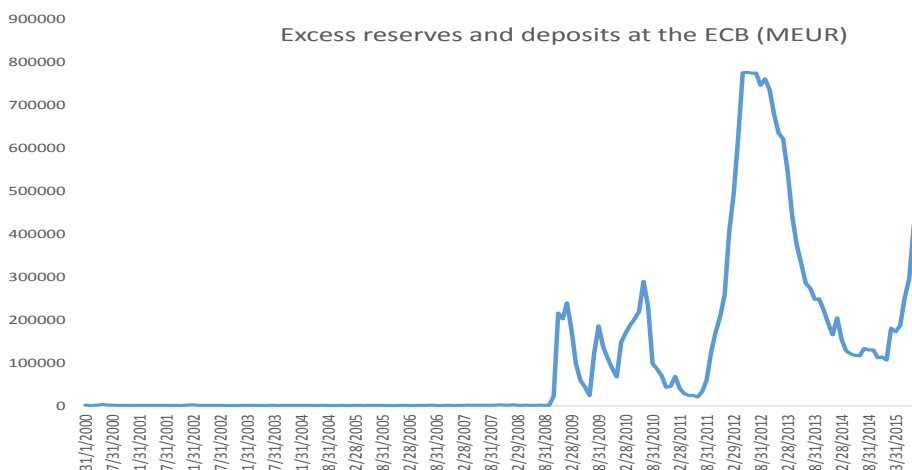
$$\text{Cost} = \text{LTRO} * \text{LTRO Rate} + \text{MRO} * \text{MRO rate} + \text{ELA} * \text{ELA rate} - (\text{Deposits} + \text{Excess reserves}) * \text{Deposit Rate} - \text{Minimum Reserve} * \text{Minimum Reserve Rate}$$

The total cost can be estimated at 2.8bn, more than half of which is paid by banks using ELA, i.e. mostly Greek banks. This is a cost which is very unevenly spread among banks and, ELA aside, is mostly paid by cash rich banks.

3. What is driving the amount of reserves and is this related to credit growth?

Contrary to popular belief, there is no causality¹ between the amount of reserves and credit growth or the deposit rate. The idea that banks are “hoarding” their cash at the ECB and that reducing the deposit rate will increase lending has no theoretical, empirical or practical foundation.

As shown in the graph below, until the financial crisis, deposits and excess reserves were close to zero. Obviously, this was totally unrelated to credit growth, positively or negatively. The interbank market was able to settle all payments. All subsequent increases in reserves or deposits were driven by liquidity injections from the ECB due to the rise of systemic risk, not by credit growth or shrinkage: launch of the LTRO, use of the ELA by Greek banks, unlimited MROs, etc.



Source: ECB data

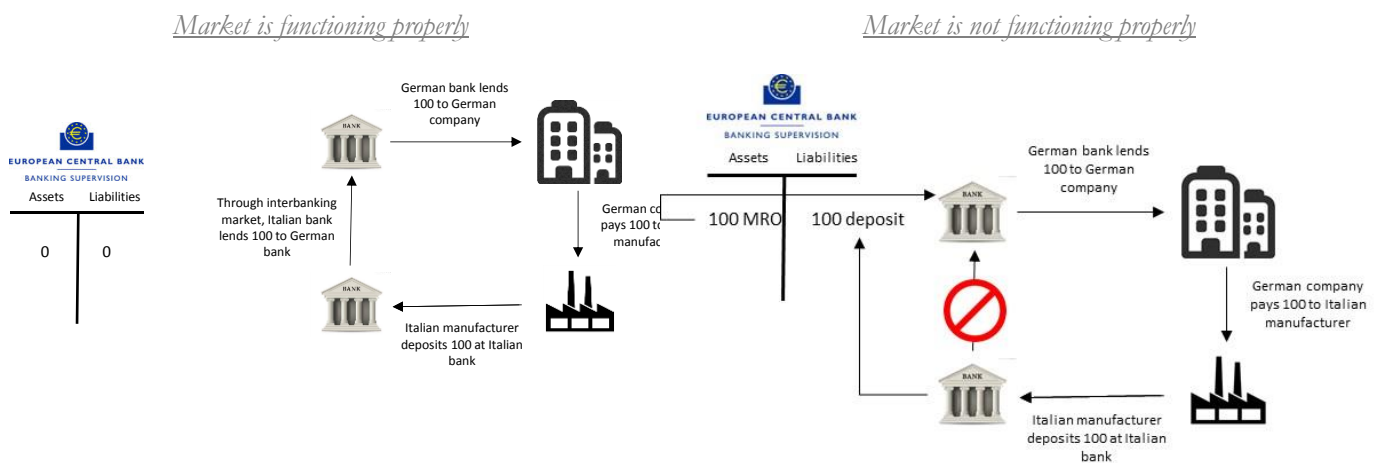
¹ Obviously this does not mean that there can be no correlation. A strong correlation can exist due to common external factors, such as GDP growth or systemic risk.



Any further reduction of the deposit rate will have no impact whatsoever on the amount of reserves. This will be driven by (i) LTRO redemptions (ii) ELA redemptions by Greek banks – maybe one day – and (iii) fewer and fewer European banks being expelled from the interbank market as the gradual cleaning-up process takes place after the financial crisis. In terms of direct impact on P&L, each bank will have different numbers, depending on its liquidity profile, but there should be no overall global impact: the direct driver for this comes from the so-called corridor, *i.e.* the difference between the MRO rate and the deposit rate, **and this is at a historical low²**.

So why is there no causality between the amount of reserves and credit growth or the deposit rate? The reason is that money flows within the Eurosystem are a zero sum game: (banknotes apart) any single Euro lent by the ECB to a bank will eventually end at the ECB on one of the deposit facilities, simply because it has nowhere else to go! Amusingly, before the 1990s and for many decades, the general central bank wisdom was that increasing reserves would increase lending, not the other way round...

How can we explain that reserves grow and have grown so much since 2007? The answer is simple: risk and a broken interbank market. The following chart tries to illustrate that point:



The ECB does not need to provide liquidity nor to receive liquidity. The balance sheet of the ECB is close to zero

The Italian bank does not want to take the risk to lend money to the German bank / interbank market. It chooses to deposit money at the ECB. The ECB has to fund the liquidity gap of the German bank. Target 2 assets / liabilities are created. ECB's balance sheet grows.

Source: Axiom AI

Last but not least, any increase of credit growth will have no impact on excess reserves or the deposit facility, unless the interbank market remains broken and banks providing these new loans have to refinance themselves at the ECB. This is highly unlikely since those banks that refinance themselves at the ECB are precisely the more fragile ones, which are undergoing restructuring and sharp deleveraging, and not providing new loans on a net basis.

² The impact of QE is more complex

4. So what is driving credit growth?

Unfortunately this is a much more complex question with no single generally accepted answer. We would like to point out a few aspects of the debate.

4.1. What is driving credit growth?

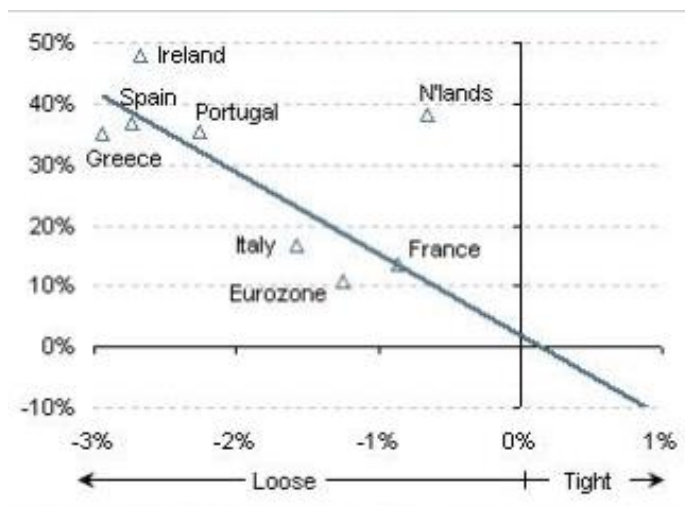
- Credit growth is as much a supply driven process as a demand driven one. When economic agents have no profitable project to fund, they do not borrow. When banks have no capital available to lend, they do not lend. It is hard to split the effects of the two components, especially in a recession.
- Recent IMF studies show that supply and demand effects are both correlated to a simple macro-economic variable (the “cycle”) and that although supply-driven effects (linked mostly to the banking crisis) increased after 2008, this remains highly variable from one country to another.
- Empirical data shows that credit is an advance indicator of GDP growth. In other terms, credit growth is more driving GDP up than the other way round, although obviously this is not a perfect relationship.
- The post-2008 regulatory shock led to a massive increase in capital requirements for banks. Most of the job has been done, but major banks are still in the process of getting to their “end-state” CET1 capital ratio. The consequence is that their main goal – and share price driver – is not to increase balance sheet size or lending, but to optimize it, improving asset margins, reducing cost to lend or capital requirements for a given loan. On top of capital issues, which vary dramatically from one European country to another, in some countries (e.g. Italy) NPLs are still constraining credit growth as these NPLs are only replaced very slowly by new loans due to very long judicial procedures.
- On the demand side, the macro-economic environment is obviously key, but so is existing leverage. Portuguese firms, for example, are highly leveraged and are not in a position to borrow more, even for highly profitable and attractive projects.

4.2. What is the impact of rates?

- The level of interest rates has a very limited impact on credit supply. The cost of central bank money is reflected in market rates and banks have no reason to lend more or less depending on the level of rates. As we argued above, there is no such thing as banks “hoarding money” at the ECB. Supply is mostly driven by (i) assessment of risk (ii) availability of capital (iii) availability of liquidity and (iv) estimates of risk adjusted return on regulatory capital.

- On the demand side, lower rates are obviously helpful as the cost of credit is lowered. We believe this is best illustrated by the following chart showing how the “one-size-fits-all” illusion of the ECB’s monetary policy led to a massive increase in credit demand in some EU countries.

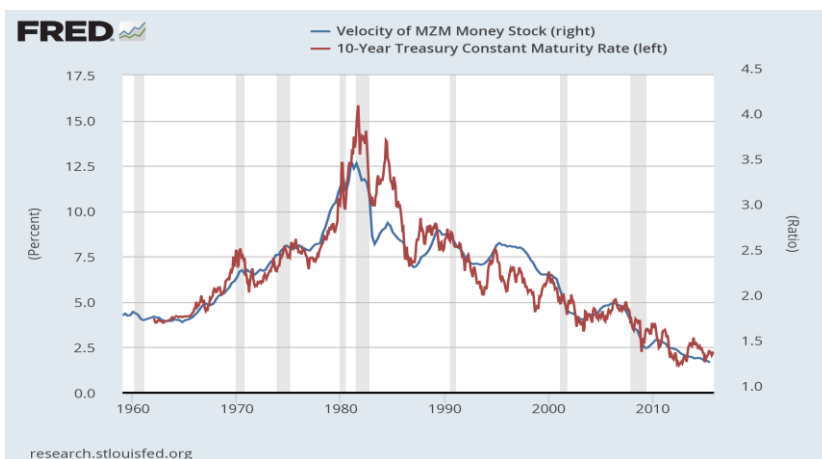
Change in household lending as a function of the difference between the ECB rate and the Taylor rule (2000-Q2 2008)



Source: Creditsights

But, from a corporate’s point of view, the main question remains: do I have investments I wish to fund? This is why in a recessionary environment, lower rates are often associated with buybacks (shares or even debt) rather than new investments.

- The one relationship that is very strong is between rates and the velocity of money, as shown below. The fluidity of money within the global economy, especially through the use of collateralized funding and availability of eligible securities for such funding, is a key driver of interest rates.



Source: Federal Reserve Economic Data



4.3. What is the impact of credit growth for bank profitability?

Loan growth's impact on bank valuation is overestimated, we believe. Banks are highly regulated and their business is not to grow but mostly to optimize the return on their assets, which is mainly driven by regulatory formulas. New business is generally written at "threshold" ROE levels which are based on the cost of equity, so there is no "free lunch" in simply growing the asset base. If there is no credit demand, banks can increase dividend and shrink their balance sheet. If there is a very high credit demand, they will be constrained by RWA and capital limits and will not be able to lend *ad nauseam*. All-in, the return for shareholders who price bank shares at the cost of equity, returns will be roughly the same. Obviously this is a very "rough" description of a bank and important factors (fixed costs, investments in non-lending businesses, competitive landscape, *etc.*) should be taken into account, but we think the point still holds.

The debate on lending growth, however, is still valid for the banks that have excess capital and need to deploy it. In an environment where large M&A is highly penalized by regulatory factors, banks have only three options to use their excess capital:

- Increase the payout to shareholders, which the regulators usually dislike a lot ;
- Increase lending and business in general ;
- Wait for a new conduct issue to show up and for a regulator to decide that the fine should be that amount of excess capital – we are joking...sort of.

For these banks, poor lending growth would have to be mitigated by a strong distribution capacity which will be essentially driven by regulatory drivers (stress tests, future regulations, Pillar 2, *etc.*)

5. What is the impact of lower rates / yield curves on bank profitability

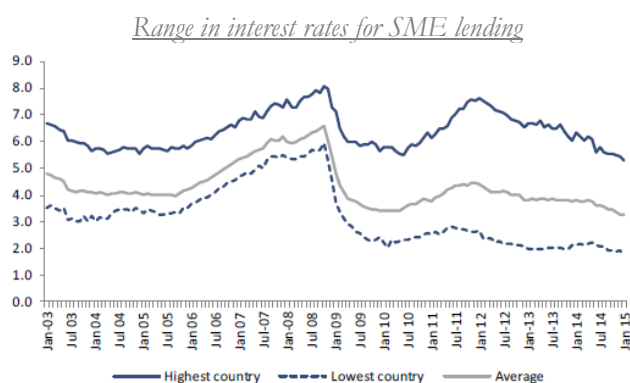
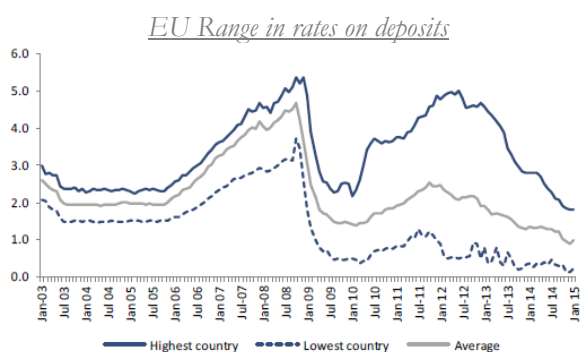
The impact of the yield curve on bank profitability is another complex subject. Conventional wisdom is that banks like steep yield curves due to the 3-6-3 rule: borrow short term at 3%, lend long term at 6%, go and play golf at 3PM. In the modern financial world this is not true anymore: liquidity regulations have drastically reduced the "transformation" (borrow short / lend long) capacity of banks and the development of swaps have allowed banks to basically switch any asset or liability from a floating rate to a fixed rate and vice versa.

Generally speaking, changes in the yield curve have the following main impacts on bank profitability:

1. The return on the non-debt funded part of the balance sheet (i.e. equity) increases with higher rates. This is only 3% to 6% of balance sheet size for most European banks but still is not negligible.
2. The return on the asset side changes with rates. In most countries this is dependent on the swap or Euribor curve but it can still vary from one country to another, especially on real estate loans.
3. The rate paid on deposits changes with the rate curve. Again this varies highly from one country to another. Some countries have deposit rates indexed on government bond rates, some traditionally have a 0% rate on deposits, some have deposit rates indexed on money market rates, *etc.*
4. The ALM (interest rate swaps) policy of a bank can change NII dynamics very substantially!

5. The prepayment fees may vary significantly with market rates, especially on mortgage financing. However, in some countries these prepayment fees are very rare.
6. The rate of delinquencies may vary with rates, especially in countries with a high share of floating rate loans.
7. Lower rates improve capital due to increased AFS reserves on fixed income securities.
8. Lower rates improve NPL valuation due to lower discount rates (helping banks willing to sell NPL portfolios).
9. Lower rates increase the incentives of clients to invest their savings into alternative products, which is favorable for banks with large asset management / life insurance franchises.

The following charts show how large the differences in lending / borrowing rates can be within the Eurozone and how these differences have increased post crisis.

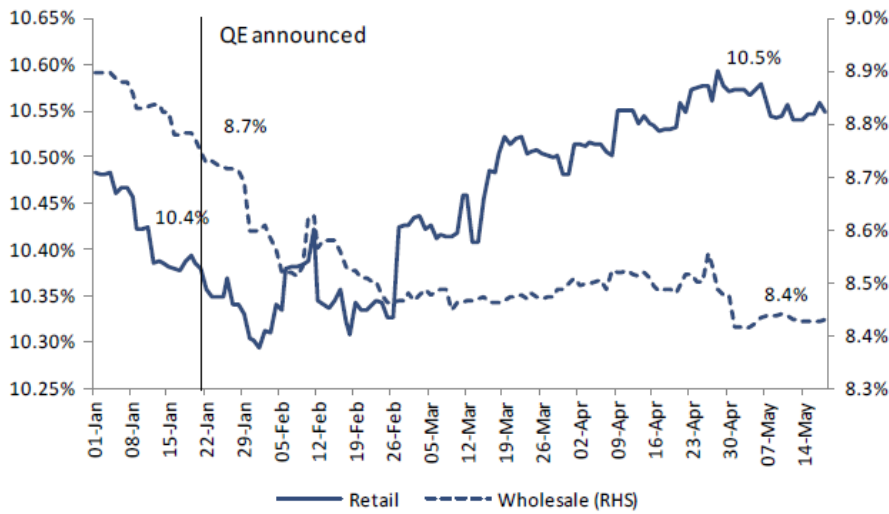


Source: *Autonomous Research*

The market generally expects profitability to reduce during QE due to a lower rate environment. However, the precise timing of this appears to be interesting and closely matches the timing of interest rate changes: analysts tend to reduce expected profits ahead of QE but increase them again shortly after QE is actually announced, very much like Bund rates went down ahead of QE and rose sharply a few weeks after the announcement. The current environment, where expectations of further QE are increasing, is consistent with a reduction in the consensus for European banks – **but, if history is a guide, consensus bounces back quickly the other way round after QE is announced, especially in retail banks.**



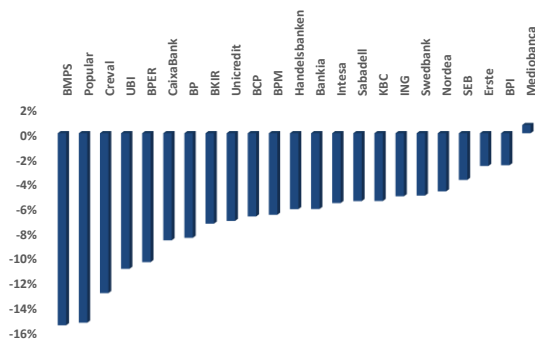
Consensus Y+2 RoTBV for Eurozone regional banks



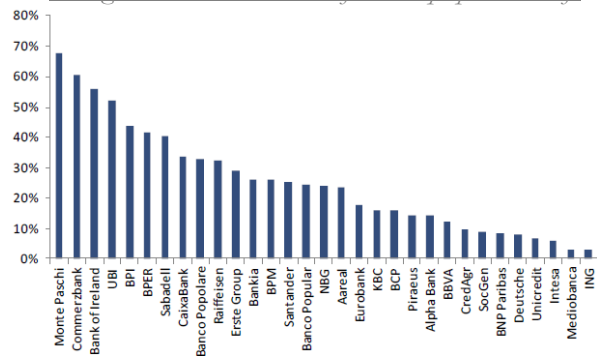
Source: Autonomous Research

What about the real changes to earnings due to QE? Banks actually publish interest rate sensitivity in their so-called Pillar 3 reports. Obviously these are static estimates and banks can change them, especially through ALM, but they do provide a rough estimate of the impact of interest rates on earnings. In the current interest rate context it is important to understand that rate risk is skewed to the upside: a +100bps increase in short term rates does not seem unrealistic, whereas a -100bps drop seems highly unlikely. Based on these published sensitivities and on brokers' estimates, we highlight below some impacts on net income for a selected group of banks.

Change in net income in case of -20bps parallel shift



Change in net income in case of +200bps parallel shift



Source: Autonomous Research

6. Are there other impacts of further QE for banks?

In the zero sum game of monetary policy, all Euros sent by the ECB into the banking system through QE must end at the ECB. In the meantime, they appear into someone's balance sheet and increase the leverage assets of the banking system. In a perfect world, they would only appear on the balance sheet of

non-leveraged constrained banks, *i.e.* banks that have a high leverage ratio and high RWA density. However, these banks tend to be the riskier banks, are not the main players in the government bond market and have hoarded government bonds recently as a way to boost net interest margin. Moreover, the market for cross-border deposits remains a very small one in the EU, suggesting that excess reserves will likely remain in the countries where bonds were sold. The US example shows that the bulk of reserves increase due to QE was at a few large banks (JPM had 430bn of the 2.6tn increase and Wells Fargo had 200bn), mainly the large wholesale banks and those active in payment systems, such as Deutsche Bank or BNP. These banks cannot always offset this cost and pass it to their clients by charging negative deposit rates: for commercial or sometimes legal reasons it is often impossible to reduce deposit rates below zero. Hence, for banks that have leverage constraints (*i.e.* the leverage ratio is the binding ratio and not the CET1 ratio) any increase in QE will reduce profitability and capital.

7. So all-in what would be the impact of another round of QE on bank shares?

Considering all of the above, what can we say of the possible impact of another round of QE on bank shares?

We do not think further QE would have, by itself, a significant impact on credit growth. We believe credit growth is only an issue for capital-rich banks whereas the others should focus on business mix optimization (exit from unprofitable business) and enhanced profitability (costs, improved NIM, etc.) We also do not believe further negative deposit rates or a change in excess reserves would have a significant impact on bank profitability or credit dynamics.

History has shown that the main impact of QE is on interest rates and that the market tends to front-run these changes (rates drop in anticipation of QE). It is clear from banks' reporting and balance sheet dynamics that banks' P&L sensitivities vary sharply from one bank to another, but banks are generally negatively geared to lower rates. Again, the consensus tends to front-end the actual announcement of QE. Last but not least, lower rates have a substantial impact on the pricing of shares through a reduction of the risk premium and the riskless rate. This would probably be more favorable for banks that offer a steady flow of dividends that is less likely to be challenged by regulators. A key driver in the selection of bank shares will be the assessment of their capacity to actually pay these dividends under the new regulatory framework that is slowly taking place (so-called "Basel 4"). The banks that will be most affected, we think, are those with a very high sensitivity to rates, leverage ratios constraints and that are active in wholesale and payments systems.

