



Banks from 2008 to 2019: net income affected by a fall in intermediation margins but lower provisions

The onset of persistently low interest rates in the euro area during the decade 2008-2019 impacted the accounts of financial intermediaries, as monetary policy measures supported demand for credit and led to an increase in the size of the balance sheets of both commercial banks and the Banque de France. The increase in the volume of loans did not, however, offset the fall in interest rates; the result of these two opposing developments was to squeeze intermediation margins. Banking intermediation has therefore become less profitable, and the banking sector now creates less value added. However, the contraction in intermediation margins was not reflected in the banking sector's net income, which was stable over the period 2015-2019, due in particular to the effects of the fall in provisions and the appreciation of assets – with highly accommodative monetary policy as a contributing factor.

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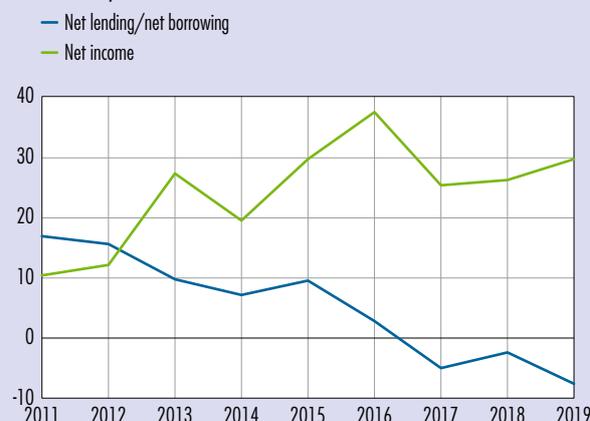
EUR **29.6** billion
banking sector net income in 2019

EUR **7.4** billion
banking sector net borrowing in 2019

0.69%
effective deposit rate in 2019,
in decline since 2012

Net lending/net borrowing and net income of credit institutions and financial intermediaries

(EUR billions)



Sources: Insee, Banque de France, authors' calculations.
Scope: Credit and similar institutions for net income (data on a company basis); financial intermediaries for net lending/net borrowing.



1 An active monetary policy since the 2008 financial crisis

Fall in the natural rate of interest

The main objective assigned to the **Eurosistem** (see definitions in Appendix 1), under the mandate given by European governments, is price stability. This is understood as a level of medium-term inflation below, but close to, 2% throughout the euro area. In order to achieve its inflation target, the Eurosistem ensures that favourable financial conditions are maintained, which may lead the central bank to keep its key interest rates at low levels over the long term. However, to appreciate why real interest rates are low, we must first consider the concept of the **natural**, or “neutral” **rate of interest**: this is the real interest rate that equates savings and investment in an environment of full employment and price stability. The various estimates of natural interest rates across the world show that they have fallen steadily since the 1980s to a historically low level today. In the long term, the natural interest rate trend follows that of structural factors such as working population growth or changes in total factor

productivity. These factors are not the result of central bank action, but do affect the conduct of monetary policy. Indeed, a low natural interest rate limits the ability of central banks to continue to lower their policy rates, which is why the monetary authorities intervened following the 2008 crisis and the slowdown of the real economy, using both key interest rates and unconventional monetary policy tools (see Appendix 2).

Strong fall in key interest rates and significant excess liquidity

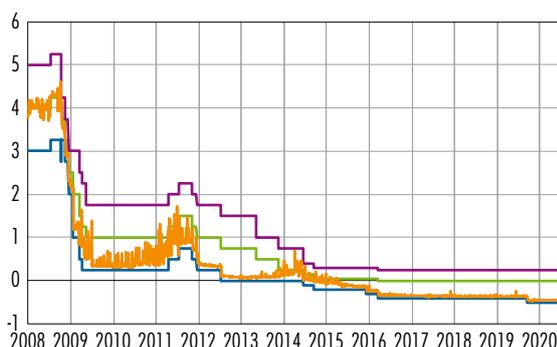
The rate on main refinancing operations for banks fell from 4.25% in summer 2008 to 1% in May 2009 and then to 0% in 2016 – and has since remained at this level. At the same time, the deposit facility rate, which remunerates banks’ reserves at the central bank, fell into negative territory in June 2014 and has stood at –0.5% since January 2019. Long-term rates are also lower: while the rate on ten-year **swaps** on **Eonia** (the Euro Overnight Index Average for interbank lending) was above 4.5% in summer 2008, by January 2020 it had dipped below zero. Short-term and long-term interest rates have therefore fallen in tandem (see chart 1).

C1 Policy rates and market rates since 2008

(%)

a) Eurosystem and Eonia policy rates

- Deposit facility
- Main refinancing operations
- Marginal lending facility
- Overnight interbank (Eonia)



Sources: Banque de France, Bloomberg.

b) Short-term and long-term rates

- Eonia
- Three-year Eonia swap
- Ten-year Eonia swap





Reserves that banks hold over and above minimum reserves are placed in deposit accounts that the credit institutions open at the central bank. Most of the increase in excess reserves stems from the extended asset purchase programme that the European Central Bank (ECB) launched in October 2014. Practically speaking, when the Banque de France buys a French government bond from a French bank, it credits that bank's deposit account. Purchases of securities by the Eurosystem central banks therefore lead to the creation of excess reserves. A bank can reduce the excess reserves it holds in a number of ways, for example by lending to another bank or transferring or buying securities to or from other banks on behalf of its customers. This amounts simply to moving these reserves to these other banks; they do not leave the accounts held by the central bank. Reserves thus mainly circulate in a closed loop. They rose from an average level close to zero before the 2008 crisis to nearly EUR 1,800 billion in January 2020 (see chart 2). When the deposit facility rate is negative, holding excess liquidity is costly for banks. This burden can therefore deter them from lowering the interest rates on loans that they grant to the real economy, i.e. mainly to the non-financial private sector. That is why, in September 2019, the ECB's Governing Council decided

to exempt a portion of excess reserves from negative interest rates through the so-called tiering method (two-tier system for reserve remuneration).

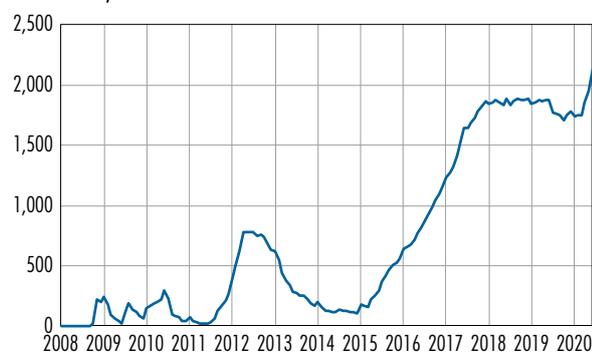
2 Monetary policy measures cause lasting distortions in the balance sheets of central banks and commercial banks

In the euro area countries, the Eurosystem's monetary policy measures impact the behaviour of financial intermediaries, giving them an active role in the transmission of monetary policy to the real economy. By changing interest rates, monetary policy acts on the many, sometimes contradictory, incentives to which financial intermediaries adapt. For example, cutting rates makes it possible to reduce both banks' financing costs and the rates on new loans. By making new loans relatively cheaper for borrowers, a fall in interest rates stimulates demand for credit.

This increases the size of financial intermediaries' balance sheets, since the loans they grant are matched by an increase in deposits of the same amount. The very structure of their balance sheets therefore reacts to the interest rate environment in a way that is reflected in the national accounts. In particular, the national balance sheet reflects changes in the balance sheets of both the Banque de France (with the effect of unconventional monetary policies) and credit institutions, the two institutional sectors under consideration here.

C2 Banks' excess reserves with the Eurosystem central banks since 2008

(EUR billions)



Sources: ECB, authors' calculations.

The Banque de France's balance sheet has doubled in size since 2008

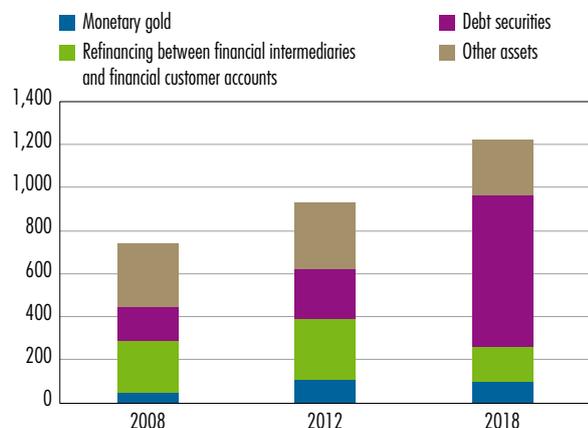
Since 2008, the Banque de France's balance sheet has changed structurally, in terms of both assets and liabilities. The institution's various asset purchase programmes have led to a tripling of debt securities held on the assets side and a sharp decrease in the weight of refinancing operations. On the liabilities side, the stock of overnight deposits held by banking institutions in current accounts or deposit facilities has doubled since 2012 (see charts 3a and 3b). All told, the balance sheet of the Banque de France is twice as large today as it was in 2012.



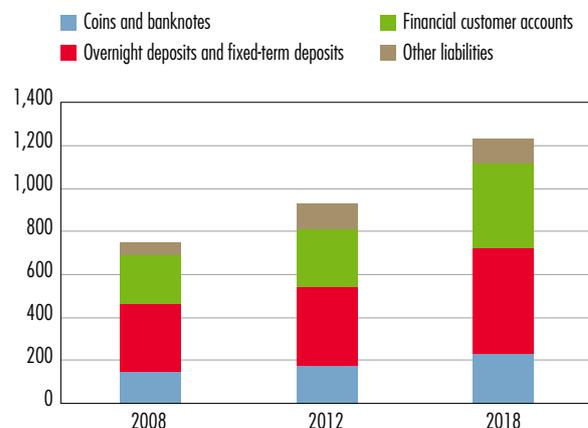
C3 Structure of the French central bank's balance sheet between 2008 and 2018

(EUR billions)

a) Assets



b) Liabilities



Sources: Banque de France, authors' calculations.

A more moderate increase in credit institutions' balance sheets since 2008

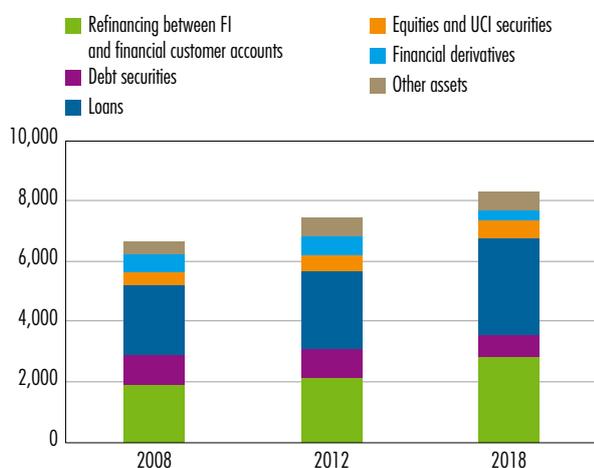
On average, credit institutions' balance sheets grew by 2.7% a year between 2008 and 2018, a rate comparable to that of monetary creation in France (+3.0% a year for the French contribution to the M3 monetary aggregate – broadly defined money).

Over the period as a whole, on the asset side, the weight of loans increased from 35% to 38% of total assets, at the expense of debt securities and financial derivatives, which fell from 24% to 12% of total assets. The trend was largely the same for liabilities, with a sharp increase in deposits and a slight decrease in debt securities and financial derivatives (see charts 4a and 4b). As for central banks, and often symmetrically – for the stock

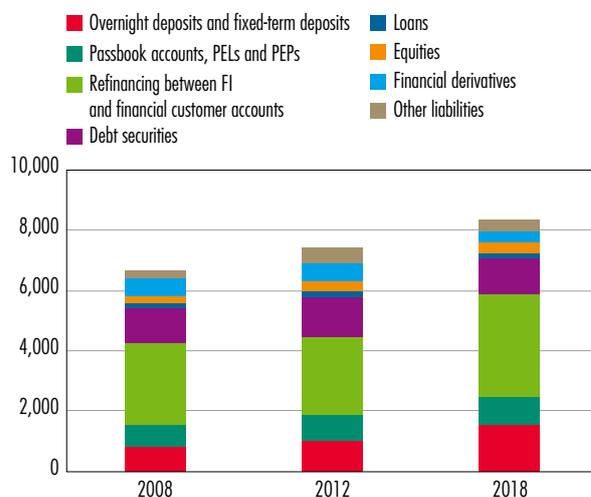
C4 Structure of French credit institutions' balance sheets between 2008 and 2018

(EUR billions)

a) Assets



b) Liabilities



Sources: Banque de France, authors' calculations.

Notes: Data on a company basis.

FI: financial intermediary; UCI: undertaking for collective investment; PEL: home savings plans; PEP: regulated savings plans.



of securities eligible for purchase programmes, for example – the balance sheet structure of credit institutions has distorted over time (see Appendix 4, chart A1). Over the recent period, the implementation of the various unconventional monetary policy programmes led to a distortion as from 2015, marked by an acceleration of bank financing to the euro area’s non-financial private sector – but also to counterparties outside the euro area. The resources mobilised to provide this financing have also changed, in the form of an increase in the share of deposits by non-financial customers.

Different balance sheet impacts from one credit institution to another

This distortion of balance sheet structure varies from one French credit institution to the next, depending on whether it is a universal bank, i.e. one that covers both retail and capital markets activities, or a deposit bank. In universal banks, where non-financial customer deposits do not exceed 20% of resources, transactions with countries outside the euro area are becoming more frequent, on both the asset and the liability side (see charts 5a and 5b). In deposit banks, the stock of

private sector financing (bank loans and purchases of securities of non-financial corporations) increased from 43% to 48% of total assets between 2015 and 2019.

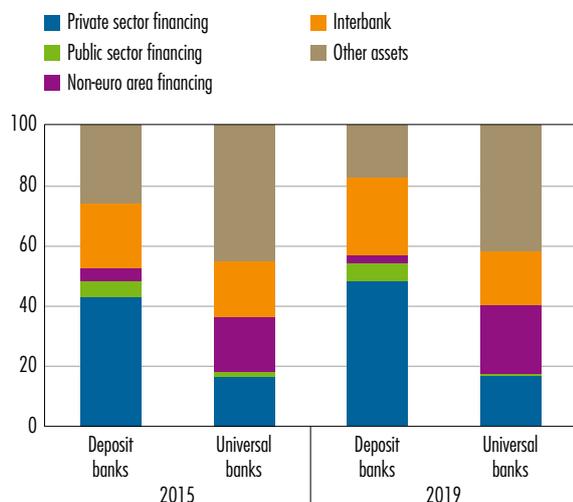
Less profitable maturity transformation than in the past

In a traditional business model, banks finance themselves at short maturities, for example through overnight deposits or by borrowing on money markets, and lend at longer maturities. This practice, called maturity transformation, generates a margin for the financial intermediary that is proportional to the difference between short-term rates – the cost of the resource – and the long-term rate – the income generated by the investment. In recent years, however, the fall in long-term interest rates has far exceeded that of short-term rates, and in France the cost of the resource has been constrained by the floor on interest paid on overnight deposits and the inertia of interest paid on regulated savings. Maturity transformation has therefore become less profitable since 2008, affecting bank margins – particularly for banks whose financing cost fluctuates the least. This situation can encourage banks to take greater risks to maintain their profitability, whether by lending to more vulnerable

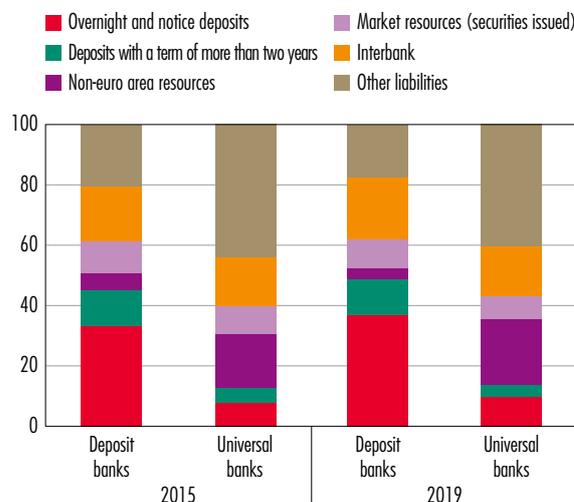
C5 Composition of the balance sheet of French credit institutions by activity, in 2015 and 2019

(% of total assets)

a) Assets



b) Liabilities



Sources: Banque de France, authors' calculations.
Note: Data on a company basis.



borrowers or by investing in financial products that are difficult to value.

For all French banks over the period 2015-2019, the fall in income from lending activities (– EUR 28 billion, from EUR 84 billion to EUR 56 billion) exceeded the savings generated by cutting interest on deposits (– EUR 16 billion, from EUR 34 billion to EUR 18 billion). Here again deposit banks are the most exposed, for various reasons: the home savings plan (PEL) component of their long-term resources, which represents around 18% of all long-term funding instruments, on average pays interest at a rate that fell by only 16 basis points over the period under review. Another notable factor is that French banks have faced numerous requests from private customers to renegotiate loan terms, which they tend to accept due to the fierce competition between banks for mortgage financing. The share of renegotiated home loans in new lending thus jumped to 60% at the end of 2016, before receding to 20% in 2017 and 2018. It stood at around 30% at end-2019.

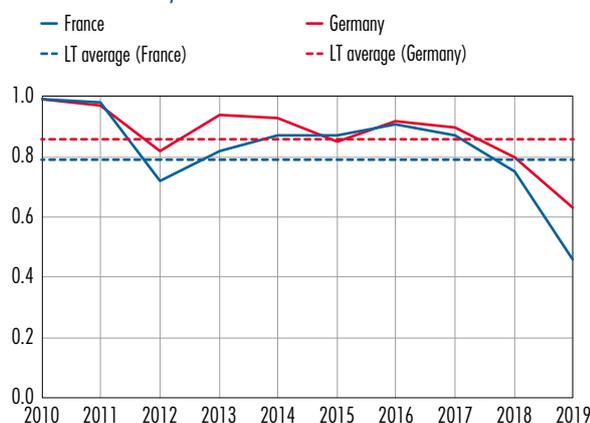
Reduced transmission of short-term market rates into loan rates

The introduction of negative-interest-rate monetary policy appears to be slowing the decline in loan interest rates. This is particularly the case for loans to non-financial corporations, whose rate depends not only on the so-called risk-free rate, but also on the cost of risk. This can be verified by considering the correlation between the trend in short-term rates and that in rates of loans to non-financial corporations (Borio and Gambacorta, 2017; Eggertsson et al., 2019), which has weakened significantly for French banks over the last three years (see chart 6a). An equivalent, albeit less pronounced, phenomenon can be seen for German banks. Whether concerning French or German banks, the rate of correlation is now significantly lower than it has been historically. In France, moreover, the decrease in correlation is greater for universal banks than for deposit banks (see chart 6b).

C6 Correlation between changes in short-term rates and non-financial corporation lending rates

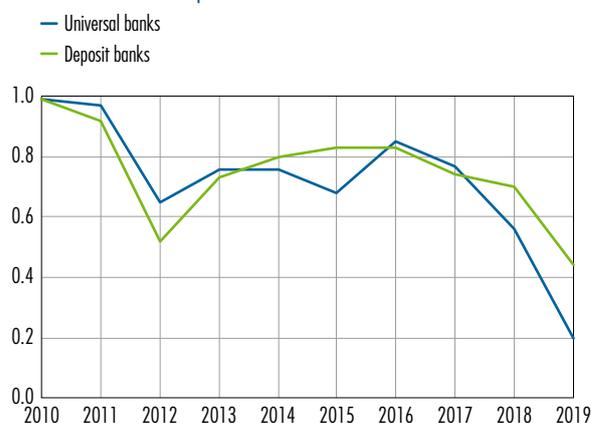
(% of total assets)

a) France and Germany



Sources: ECB, iMIR data; authors' calculations.
Scope: Credit institutions, data on a company basis.
Note: LT: long term.

b) Universal banks and deposit banks in France



Sources: Banque de France, authors' calculations.
Scope: Credit institutions.



3 Contraction of the intermediation margin

As a result of marked inertia in the average cost of bank resources, the rate spread between French banks' loans and deposits has narrowed since 2015. The bank intermediation margin – the difference between the interest received on the distribution of loans and that paid to lenders – has therefore deteriorated.

This puts French banks as a whole in a fairly unique situation within the euro area, with spreads that are approximately 100 basis points lower than those observed in German, Spanish or Italian banks, the latter having converged since 2015 (see chart 7a). Differences in credit risk could partly explain this divergence between French banks and those of other countries.

Nevertheless, according to the consolidated data published by the European Central Bank¹ and despite the deterioration seen in credit intermediation activities in France, since 2015 French banks have managed to maintain their margins (98.5 in 2019, compared with 100 in 2015). From this point of view, the four major euro area countries present a relatively disparate picture (see chart 7b).

In addition, the return on assets (ROA: net income/net assets) has slightly increased, thanks in particular to income from capital markets activities and the decrease in the cost of risk, itself due in particular to the decrease in non-performing customer loans, which fell from EUR 44.1 billion in 2015 to EUR 40.0 billion in 2019. ROA trends themselves vary widely, with French and German banks seemingly generating a more stable ROA than Spain or Italy (see Appendix 4, chart A2).

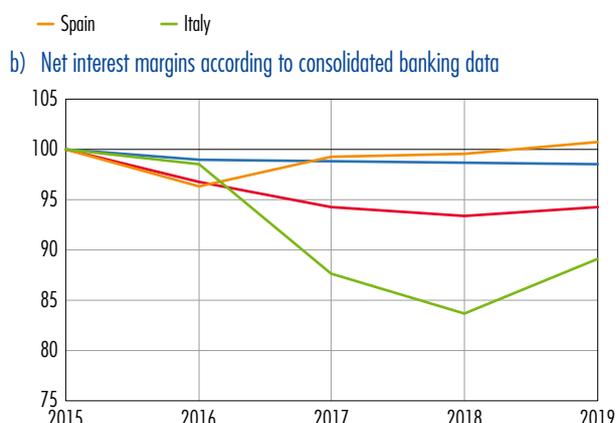
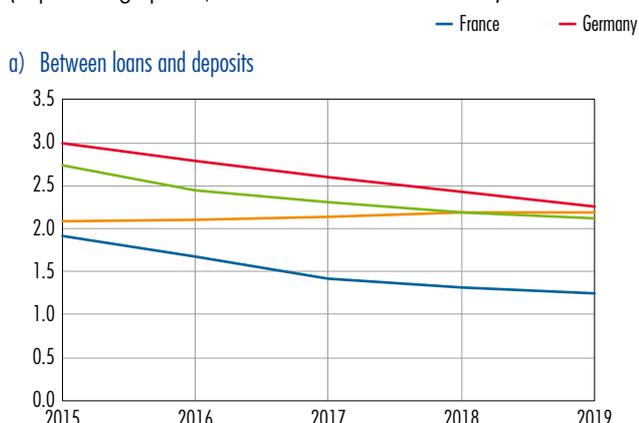
French banks in need of financing as from 2017

Two indicators are usually used to measure banks' financial position: net income and net lending/net borrowing.

The first, a company accounting figure, is taken from the income statement, which groups together all income and expenses for the year. For credit institutions, it includes banking operating income and expenses, sundry and exceptional operating income and expenses, as well as personnel expenses, tax expense and charges to or reversals of depreciation, amortisation and impairment. The balance resulting from income less expenses – profit or loss – is the net income.

C7 Rate spreads between loans and deposits, and banks' net interest margins

(in percentage points; base 100 in 2015 for chart b)



Sources: ECB, authors' calculations.
Scope: Credit institutions, data on a company basis.

Scope: Banks and banking groups, consolidated data.

¹ Consolidated banking data (CBD).



The second is a national accounting balance that measures a sector's financial savings deficit or surplus (savings after deduction of investment expenses). Unlike for non-financial corporations, households or public administrations, net lending/net borrowing is not the most commonly used concept for economic analysis of financial institutions. Indeed, these institutions' role as financial intermediaries is to keep funds moving between agents that can lend and those that need to borrow – and not to invest or spend.

The two indicators are conceptually different and, while complementing each other, relate to different scopes (credit institutions being part of the fabric of the financial intermediaries sector). As shown in the table below, net income includes in particular the impact of asset appreciation (which may be significant) as well as the balance of gains and losses on market transactions; comparing it with net lending/net borrowing therefore makes it possible to estimate the revenues of the banks' various activities (retail banking and corporate and investment banking). It is also customary to compare financial institutions' added value to their net banking income (NBI) – see Fournier and Marionnet, 2009. This analysis is presented in more detail in sheet 16 of *The French Economy – Accounts and Files*, where again we see that one of the major differences lies in the capital gains or losses related to the holding of financial assets (taking into account intermediate consumption as well as income from ownership). Other transactions included in net income are not used in net lending/net borrowing calculations, such as credit losses, which are not considered to be transactions in national financial accounting (where they are taken into

account in volume changes). Conversely, dividends paid are not included when calculating net income but are recognised in net lending/net borrowing.

Net income and net lending/net borrowing have followed different trends since 2011.

Between 2011 and 2017, financial corporations' net lending fell sharply, with in particular a decrease of EUR 7.7 billion between 2016 and 2017 – by which year it had therefore become a net borrowing requirement. The situation improved in 2018 before deteriorating again in 2019, when the sector still had a net borrowing requirement of EUR 7.4 billion (see chart 8).

C8 Net lending/net borrowing and net income of credit institutions and financial intermediaries

(EUR billions)

— Net lending/net borrowing
— Net income



Sources: Insee, Banque de France, authors' calculations.
Scope: Credit and similar institutions for net income (data on a company basis), financial intermediaries for net lending/net borrowing.

Sources of differences between net income and net lending/net borrowing

Item	Net income	Net lending/net borrowing
Balance of gains and losses on securities, foreign exchange and fixed asset holdings	•	
Balance of income and expenses on derivatives	•	
Balance of foreign exchange and arbitrage transactions	•	
Loan losses	•	
Depreciation, amortisation and provisions	•	
Balance of exceptional income and expenses	•	
Dividends paid		•

Source: Banque de France.

Note: • symbol indicates inclusion of the item in the calculation of net income or net lending/net borrowing.



Net income followed a more volatile trajectory, rising and falling over the period, but also fell in 2017, by EUR 11.9 billion.

The gap between net income and net lending/net borrowing widened throughout the 2011-2019 period, reaching its widest point in 2016. A significant proportion of this gap relates to gains and losses on securities and derivatives transactions, which are not included in financial intermediaries' **non-financial accounts** but are recognised in their **financial accounts**. This gap, which relates primarily to the financial institutions most involved in market finance, widened between 2016 and 2017. **In other words, banks derived more income from these activities in 2017 and this diversified business model helped limit the decrease in their net income.**

In 2018, dividends paid (excluded from net income) accounted for 65% of the difference between net income and net lending, and asset appreciation 35%. Lastly, any loan losses – which could increase due to the Covid-19 crisis – would be included in net income but excluded from net lending. This would lead to a reduction in the assets of creditor banks (due to the debtor's failure to repay and the recognition of impairment on the corresponding debt).

Banks' added value is driven by fees

National accounting can be used to illustrate the transition from production to added value in the financial intermediaries sector. In particular, it makes it possible to assess the indirectly measured financial intermediation services (FISIM) component of banks' production and the impact thereof on their added value (Beaujour, 2012).

Production corresponds to all products made during the accounting period. In the case of deposit-taking institutions, excluding the central bank, it includes the production of services invoiced at the producer price, the trading margin on financial instruments and the production of banking services, i.e. financial intermediation services (FISIM).

The production of services invoiced at the producer price and the trading margin on financial instruments are banking services invoiced in the form of fees.

Financial intermediaries' fees increased by 1.8% a year over the 2008-2019 period to EUR 95.5 billion.

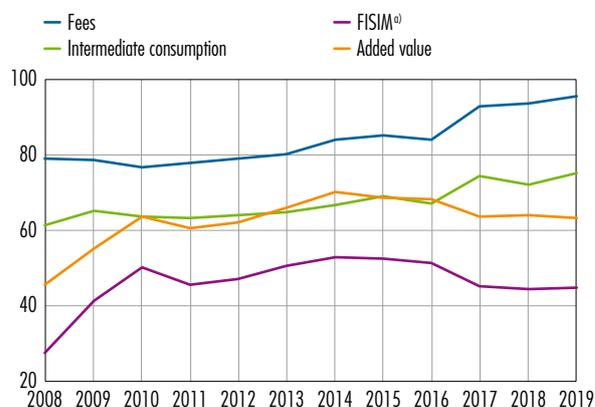
Banking services (or FISIM) production makes it easier to measure banks' added value. A substantial part of financial intermediaries' income comes from the margins applied to interest rates on deposits and loans (see Appendix 3). Banking services production increased between 2008 and 2014 but since then has fallen, and stood at EUR 44.6 billion in 2019.

Intermediate consumption corresponds to goods and services consumed during production, excluding fixed assets – whose consumption is recognised under fixed capital consumption. The goods and services concerned are either converted or completely consumed during the production process. Intermediate consumption grew by 2% a year on average between 2008 and 2019, to EUR 74.9 billion.

Lastly, added value corresponds to production (resources) less intermediate consumption (uses) – see chart 9. Fee income and intermediate consumption grew in step over the period; added value followed the FISIM trend, and having shrunk by EUR 4.7 billion in 2017 came to EUR 63.2 billion in 2019.

C9 Breakdown of added value of financial intermediaries since 2008

(EUR billions)



Sources: Insee, Banque de France, authors' calculations.

a) Indirectly measured financial intermediation services.

Scope: Financial intermediaries, except insurance corporations and pension funds.



Gross domestic product (GDP), which corresponds to the sum of the various business sectors' added value, is necessarily impacted by trends in banks' added value.

Margins on deposits have fallen sharply since 2008

National accounting also makes it possible to measure the change in the respective shares of volume and prices in banks' production. The fall in interest rates led to a decrease in prices (notably squeezing the intermediation margin) and an increase in volumes (increase in the number of loans granted or deposits made).

In France, a benchmark rate corresponding to the opportunity cost of funds and representing banks' refinancing conditions (see definition in Appendix 3) is calculated based on interbank lending and deposit transactions, as the percentage of interest on loan and deposit stocks.

In 2019, this benchmark rate stood at 0.81%, its lowest level since 1980. Since 2012, due to low interest rates and the zero interest rate floor for deposits, the margin on deposits has been virtually non-existent, while the effective deposit rate has decreased, standing at 0.69% in 2019. The effective lending rate, while having fallen, stood at 2.06% in 2019, which locked in positive margins on loans (see chart 10).

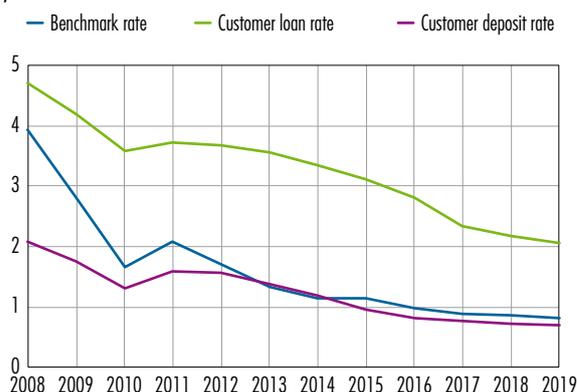
The fall in interest rates since 2015 has squeezed margins, but has been partially offset by the opposite

trend in loan volumes. The growth in loan volumes between 2010 and 2019 therefore mitigated margin erosion and slowed the contraction of FISIM production (see Appendix 3).

Net lending analysis shows that banks are using their lending margins to ease the burden of low rates; they are also taking advantage of the appreciation of their assets, as reflected in their net income. Analysis of net lending/net borrowing on the one hand and net income on the other provides two complementary insights into how financial institutions function.

C10 Margins on deposits and loans since 2008

(%)



Sources: Banque de France, authors' calculations.

Scope: Deposit-taking corporations except the central bank (S.122), and other financial intermediaries, except insurance corporations and pension funds (S.125).



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Appendix 1

Definitions

M3 monetary aggregate (broadly defined money): Cash in circulation, fixed-term deposits with a term of two years or less, deposits repayable with a notice period of three months or less, repurchase agreements, investment fund (UCI) securities and debt securities with a term of two years or less.

Financial accounts: The national financial accounting system describes the behaviour of investment and debt, the use of financial savings and the means of financing investment and consumption. The financial accounts explain how transactions are financed.

Non-financial accounts: The non-financial accounts describe a transaction's economic characteristics (production, consumption, etc.).

Credit institution: In the European System of National and Regional Accounts (ESA 2010), credit institutions are classed under "deposit-taking corporations except the central bank" (S.122).

Eurosystem: The euro area's monetary authority, which includes the European Central Bank and the national central banks of the European Union Member States that have adopted the euro.

Eonia (Euro Overnight Index Average): The interest rate used as a benchmark for rates on unsecured overnight interbank deposits.

Financial intermediaries, except insurance corporations and pension funds: In the European System of National and Regional Accounts (ESA 2010), the subsector "financial intermediaries, except insurance corporations and pension funds" includes the central bank and other deposit-taking institutions, investment funds and other financial intermediaries (S.125). The national accounts are disseminated and the various conceptual adjustments affecting the accounts are made at this aggregate level.

ROA (return on assets): The rate of return on invested assets.

Eonia swaps: A swap is a contract for the exchange of financial flows between two parties, which are generally banks or financial institutions. Eonia swaps are interest rate swaps characterised by the exchange of interest flows generated by fixed rates decided at the start of the contract for interest flows generated by Eonia, a variable rate. Eonia swaps are often used as an approximation of the risk-free rate over the swap's duration.

Natural (or "neutral") interest rate: Real interest rate that equates savings and investment in an environment of full employment and price stability. Many structural factors affect investment demand and savings supply over long periods of time, such as the opening up of capital markets, changes in the working population or total factor productivity.



Appendix 2

Main monetary policy measures in the euro area since the 2008 financial crisis and in the context of the Covid-19 crisis

Faced with an imminent recession, the traditional response of central banks is to lower interest rates. When monetary authorities change policy rates, which are short-term rates, these changes feed into all the short-term rates at which economic agents lend to each other. In the case of a reduction in policy rates, for example, competition between financial intermediaries on the money markets leads them to lower their rates in turn, in order to offer competitive short-term loans. The monetary policy decision therefore causes a lowering of all short-term interest rates on the financial markets. As long-term inflation expectations adjust only slowly, a fall in policy rates leads to a fall in real rates, stimulating investment and consumption. This support for demand thus makes it possible to bring inflation closer to its target.

Unconventional monetary policy measures

Once policy rates have reached their floor, interest rate policy can no longer be used to stimulate the economy. Unconventional policies have supplemented the interest rate policy of many central banks since 2008.

An initial strand of unconventional policies aims to act on interest rates at longer maturities than those of policy rates. Indeed, the rate on main refinancing operations, one of the rates that the monetary authorities control directly, applies to loans with a maturity of one week. However, the central bank may wish to lower interest rates over longer horizons, which are likely to be more relevant to agents' investment and consumption decisions. An initial possibility is to act directly on agents' expectations. As long-term rates amount, under certain assumptions, to the average expected short-term interest rate, central banks can act on long-term rates by leading agents to revise their expectations of future short-term rates. This is how forward guidance works, as it engages the Eurosystem on future monetary policy. In addition, targeted long-term refinancing operations act directly on interest rates at the same horizons as these operations.

Asset purchase programmes also act on long-term rates: they reduce the returns on directly targeted assets by increasing demand for them and lending credibility to the central bank's commitment to conduct an accommodative monetary policy over the long term.

A second strand of unconventional policies consists in acting on excess reserves, i.e. deposits by banks with central banks over and above minimum reserves. For example, to counter a contraction in available financing on the interbank market, central banks may decide to meet part of the demand for liquidity by increasing excess reserves. These are always deposited in an account opened with the central bank, and are in free circulation among the banks. A bank may thus reduce its holding of excess reserves by lending to other banks, transferring funds to them on behalf of its customers or purchasing securities from them. Transactions on excess reserves have taken many forms since the 2008 crisis: so-called fine-tuning transactions, fixed-rate full allotment, long-term refinancing operations, to name but a few. Asset purchase programmes are another example, in that they result in the banks selling securities to the Eurosystem in exchange for reserves. Asset purchases therefore make it possible to act on both long-term rates and excess reserves.

Effects of unconventional measures

The macroeconomic effect of unconventional measures has given rise to extensive analysis, some of which has been produced by the Eurosystem. According to some studies (Hartman and Smets, 2018; Heam et al., 2015; Mouabbi and Sahuc, 2019; Rostagno et al., 2019), the estimated impact of unconventional measures for the euro area is between 0.3 and 0.5 percentage points for inflation and between 0.4 and 0.7 percentage points for GDP growth, in terms of average annual contributions over the 2015-2019 period. Studies by the Banque de France suggest that the effect on inflation in France



would be of the same order of magnitude. Moreover, at the end of 2019, employment in the euro area was higher by around 2.5 million people than it would have been without unconventional measures (Hartman and Smets, 2018).

Monetary policy response to the Covid-19 crisis

To support activity, central banks are guaranteeing access to liquidity for companies and banks that, despite being solvent, could experience funding difficulties during the health crisis. The measures taken by the Eurosystem in 2020 are all so-called unconventional measures. They include the new pandemic emergency purchase programme, a temporary adjunct to the asset purchase programmes already in place before the pandemic. In addition, the Eurosystem decided to purchase securities

with a maturity of less than six months. This method of financing, commonly considered akin to commercial paper, is very important for companies' short-term financing. The Eurosystem has also relaxed the conditions for targeted longer-term refinancing operations (TLTRO III) and created untargeted pandemic emergency longer-term refinancing operations (PELTRO). These programmes enable banks to borrow from the Eurosystem at attractive rates in order to support the distribution of credit to companies and maintain favourable lending conditions. Finally, the Eurosystem also eased its collateral policy as part of a package of measures in March.

These measures will enable economic agents to borrow more from banks or financial markets, at more attractive interest rates. Losses due to the slowdown in activity can therefore be smoothed over time, which will help avoid bankruptcies and redundancies.



Appendix 3

Indirectly measured financial intermediation services (FISIM)

The production of banking services otherwise known as indirectly measured financial intermediation services (FISIM) is a national accounting concept that makes it possible to gauge banks' added value. Services produced are not limited to invoiced items, in that a substantial portion of banking income comes from the margins applied to deposit and loan interest rates, and is not explicitly invoiced. For example, a bank can refinance itself on average at 1% and grant loans at 3%, thereby achieving a margin of 2%.

FISIM represents this "intermediation" service, consumed by non-financial customers, in the production account.

Only the non-interbank loans and deposits of financial institutions give rise to FISIM. The resident FISIM-producing sectors are financial intermediaries, i.e. deposit-taking corporations except the central bank, and other financial intermediaries, except insurance corporations and pension funds.

Customers with bank deposits receive interest net of the financial intermediation service that the bank provides, while those who have taken out a loan with the bank pay interest including remuneration for the financial intermediation service.

FISIM produced by resident financial intermediaries are either consumed by resident sectors (households, non-financial corporations, public administrations and financial corporations excluding central banks and financial intermediaries) or exported to non-resident agents and non-financial intermediaries. Resident sectors may import FISIM produced by non-resident financial intermediaries.

In practice, this breakdown is carried out using a so-called benchmark rate, which equates to an opportunity cost of funds and which must, according to the recommendations

of the European System of Accounts (ESA), be representative of banks' refinancing conditions. In France, this benchmark rate is calculated based on interbank loan and deposit transactions as the percentage of interest on loan and deposit stocks. There is latitude for calculating the benchmark rate, as the ESA does not impose a formula.

FISIM production or consumption is calculated by multiplying the difference between the benchmark rate and the average rate applied to non-financial customers by the amount of these customers' deposits and loans.

The FISIM calculation is as follows:

- for deposits $S_d = ST_d \times (R_{ref} - R_d)$
- for loans $S_l = ST_l \times (R_l - R_{ref})$.

The total amount of FISIM is therefore:

$$S = S_d + S_l = R_{ref} \times (ST_d - ST_l) + (R_l \times ST_l - R_d \times ST_d)$$

where: S_d , S_l are deposit or loan FISIM,

ST_d , ST_l are deposit or loan stock,

R_d , R_l are effective interest rates on deposits or loans,

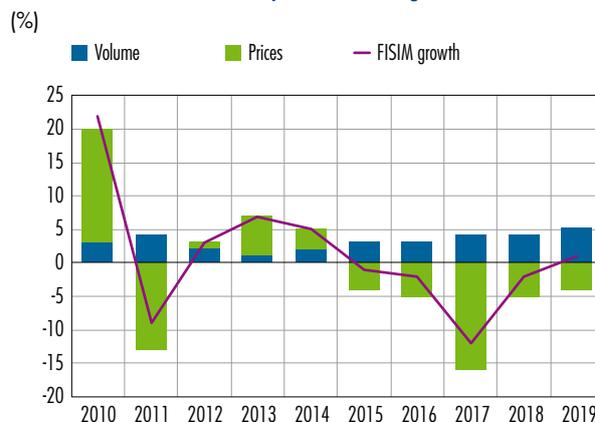
R_{ref} is the effective interest rate on interbank refinancing operations (benchmark rate).

The FISIM production calculation involves symmetrically adjusting the interest on loans and deposits so as not to impact net lending. FISIM, which correspond to the remuneration of a service, are not therefore considered a component of interest (property income account). By contrast, FISIM production is included when calculating added value.



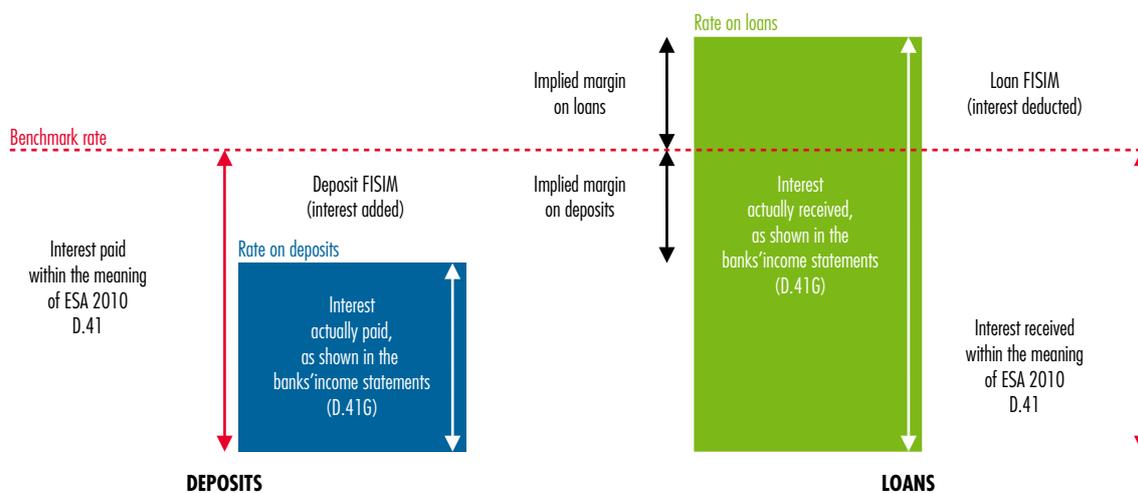
The interest is adjusted by adding the deposit FISIM to the interest paid by financial intermediaries and subtracting the loan FISIM from the interest received by banks. In other words, the interest that banks receive and pay on loans and deposits, respectively, is equal to the interest that the bank's customers would pay if they had direct access to the market, in which scenario the rates on deposits and loans would be identical to the benchmark rate.

Contribution of volumes and prices to FISIM growth



Source: Insee, Banque de France, authors' calculations.
Scope: Deposit-taking corporations except the central bank, and other financial intermediaries, except insurance corporations and pension funds.
Note: FISIM: indirectly measured financial intermediation services.

Deposit and loan FISIM



Sources: Insee, Banque de France.
Note: ESA, European System of Accounts; FISIM, indirectly measured financial intermediation services.

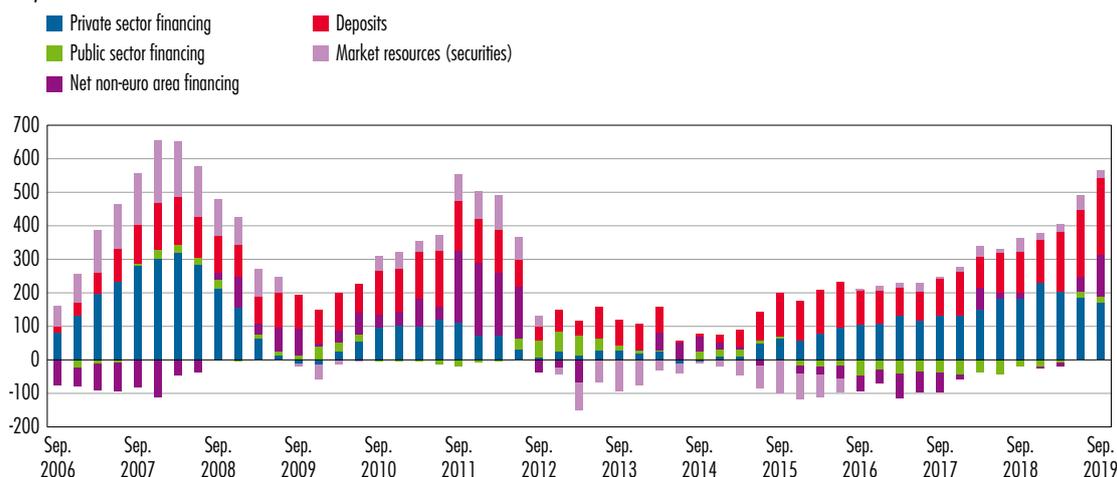


Appendix 4

Bank activity and profitability: additional information

CA1 Distortions in the simplified balance sheets of French credit institutions

(EUR billions)

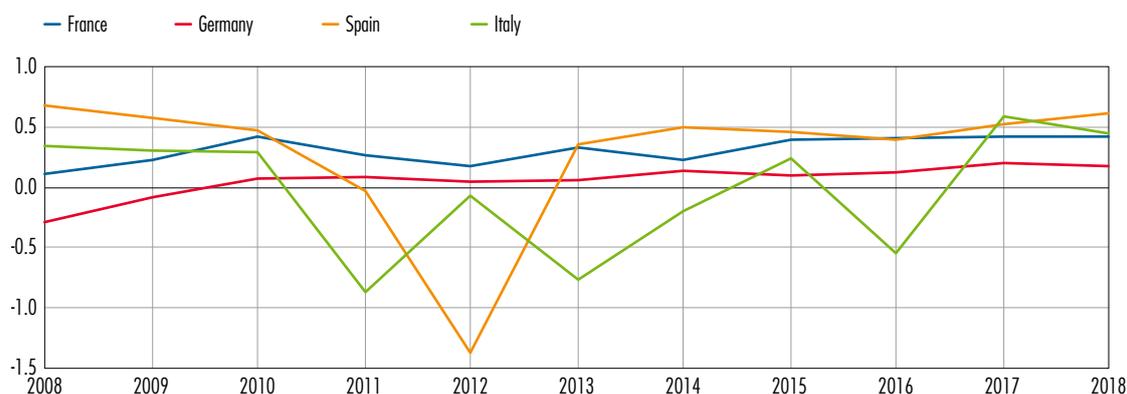


Sources: Banque de France, authors' calculations.

Note: Data on a company basis.

CA2 Banks' return on assets (ROA)

(%)



Source: ECB.

Scope: Banks and banking groups (consolidated data).

Note: ROA measures the ratio of net income to total assets.



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