



ANALYSES ET SYNTHÈSES

 Housing finance in France in 2013

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Abstract:

- ❑ The French housing market showed some recovery in 2013 amid further moderate price falls in the Paris area, *Île de France* and the rest of the country, at -1.5%, -1.6% and -1.4% respectively, and as interest rates stabilised at historically low levels. The volume of transactions for existing homes, the main market segment, grew again (+2.1%) and housing loan production rebounded sharply (+56%). However, the latter trend reflects an unprecedented volume of loan transfers,¹ which accounted for 18.1% of production in 2013. Against this backdrop, total outstanding loans showed a relatively small increase compared to the long-term trend (+3.9%).
- ❑ In general, the market remains characterised by strong fundamentals, particularly borrower solvency, which is the main lending criterion, although some risk indicators stabilised at high levels:
 - The initial maturity of new loans fell relative to 2012, to 19.1 years, and the average residual maturity declined from 15.4 years to 15.3 years;
 - The share of borrowers with a debt service ratio (i.e. the ratio of repayment costs to income) of 35% and above in total production fell again in 2013, as did the average debt service ratio: at 30%, it showed its sharpest decrease since 2001, while remaining significantly above that year's level (27.6%);
 - The proportion of fixed-rate loans in total production rose again slightly to 92.8%, and they continued to make up the vast majority of outstanding loans (83.2%). Uncapped floating-rate loans, which entail the highest risk for borrowers, were no more than 4.8% of total loans at end-2013. Interest-only loans represent only a tiny proportion of production (0.3% in 2013);
 - Almost every home loan is covered by a mortgage or lender's lien, or by a guarantee issued by a credit institution or an insurance company;
 - The cost of risk on housing loans, which had slightly increased in 2012, dipped slightly to 0.065% of outstanding loans.
- ❑ However, there are certain trends that deserve attention, although some of them seem to reflect a change in borrower structure in favour of those with relatively higher than average income and/or assets:
 - The average loan amount continued to rise in 2013 despite falling property prices throughout France. In addition, the average loan-to-value (LTV) ratio at origination, i.e. the loan amount relative to the property purchase price, having contracted in 2012, rebounded by more than 4 percentage points to 84.1%, its highest level since 2001. However, these two trends have not been matched by a rise in the average debt service ratio (see above). Moreover, the sharp rise in the average LTV at origination partly reflects some banks' inadequate recording of loan transfers (see below) and the average LTV after origination may be estimated at just over 56% at the end of 2013, which is roughly unchanged relative to 2012;
 - The ratio of gross non-performing housing loans continued to rise in 2013, but, at just under 1.5%, it remained significantly below the average ratio of non-performing loans overall (3.8%), which grew much more sharply relative to 2012. Nevertheless, delinquency rates vary significantly from one segment to another, with first-time buyers in particular now exhibiting the highest levels (2.8%);
 - At the same time, the average coverage ratio for housing loans stabilised at around 27%. This is still significantly lower than the ratio for all types of loans to customers (55.4%), but it seems appropriate given the substantial guarantees provided to banks;

¹ In a context of lower interest rates, fixed-rate borrowers have an incentive to renegotiate their credit conditions with their bank or to contract a new loan from a new bank. In this paper, loan transfer refers to the situation where borrowers switch to another bank, so that there is an early redemption of their former loans.

- While banks benefit from borrowers' relatively good level of insurance against death or work disability, they are still exposed to prolonged unemployment risk as only a small fraction of their customers has taken out job-loss insurance;

- ❑ The strong growth in loan transfers is a major focal point in this context. Such transfers, whose underlying objective of retaining customers and increasing deposit taking from individuals appears hard to sustain over the long run given the relatively finite total volume of savings, should not lead to the underestimation of borrower default risk, which must be properly reflected in lending rates. In addition, the annual survey of the French Prudential Supervision and Resolution Authority (*Autorité de Contrôle Prudentiel et de Résolution* - ACPR) reveals that some banks are not updating the valuation of the underlying properties when granting the new loans, which appears inconsistent with a proper assessment of risk and should be corrected. More generally, even though the aggregate value of financed property currently seems to comfortably exceed outstanding principal amounts, it is important that banks are able to regularly assess their tangible security throughout the life of the loans so that they are in a position to anticipate any sudden reversal in the housing market.
- ❑ Finally, while lower property prices and historically low lending rates have driven some recovery in activity in the recent period, persistently difficult macroeconomic conditions should encourage French banks to keep a close watch on the development of risks within their housing loan portfolios.

Written by Emmanuel Point and Léa Le Quéau

Keywords: housing loans, average loan amount, average loan maturity, loan-to-value ratio, debt-service ratio, non-performing loans and coverage, risk weighting

JEL classifications: G21, R21, R31

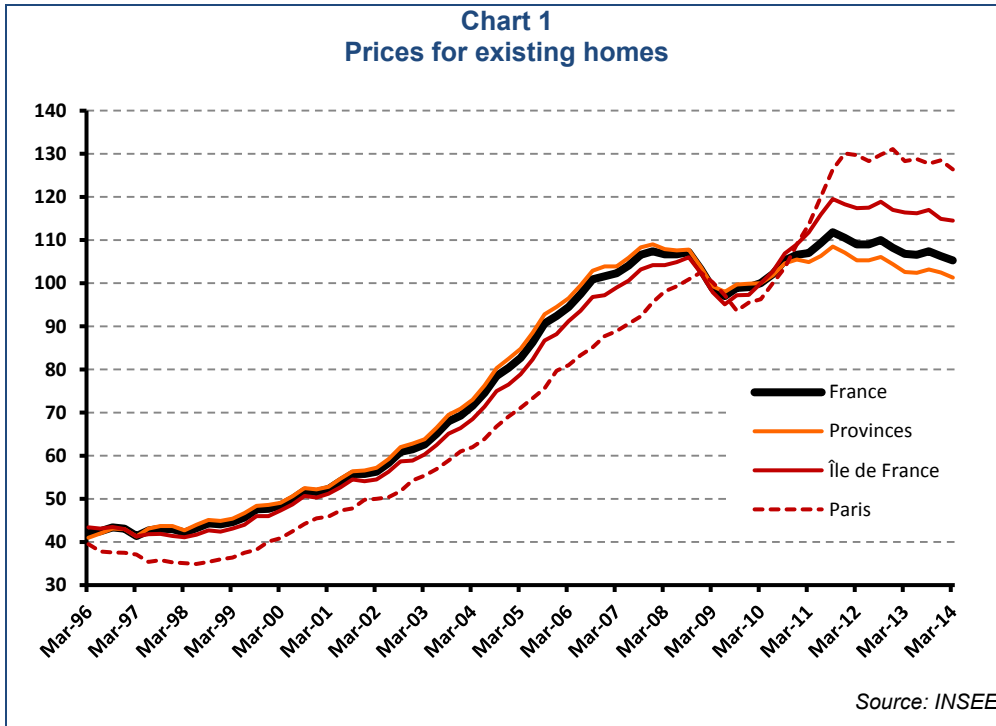
Preliminary comments

- ❑ This study is based on the information gathered through the annual survey by the Secretary General of the ACPR for 2013 as well as on the ACPR's monthly monitoring of housing loan production, which was set up in September 2011 from a sample of banks representing nearly 95% of housing loans at 31 December 2013. The study also draws on additional external sources of information including the Banque de France, INSEE and CGEDD.
- ❑ Several banks sent in information for previous years along with their responses to the 2013 questionnaire, which has helped to make a number of indicators more representative and to correct misreported information. As a result, some figures in the present study may differ from those published last year. In particular, the significant change in the breakdown of loans by guarantee type ([Chart 15](#)) relative to the previous year is due to two reclassifications affecting large volumes of loans. Similarly, the inclusion of a greater number of responses prompted amendments to the level of non-performing loans ([Chart 33](#)) and the NPL coverage ratio ([Chart 36](#)).

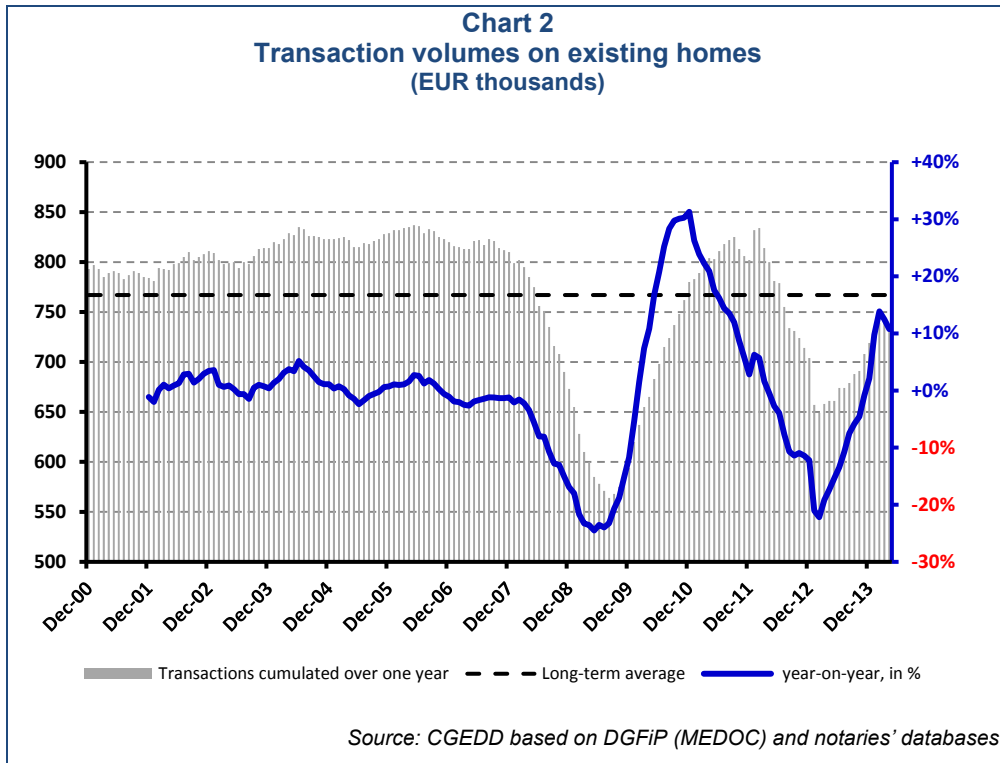
1. Main features of the French housing market in 2013

1.1. Housing sales picked up in 2013 while prices trended slightly downwards

After falling 2.1% nationwide in 2012, prices for existing homes fell a further 1.8% in 2013 (Chart 1). Falls were recorded across all parts of the country, although the trend was slightly more pronounced in *Île de France* (-1.6%) and Paris (-1.5%) than outside Ile de France (-1.3%). However, while prices are well above pre-crisis levels in the capital and surrounding region, they have slipped back below these levels in the rest of France.

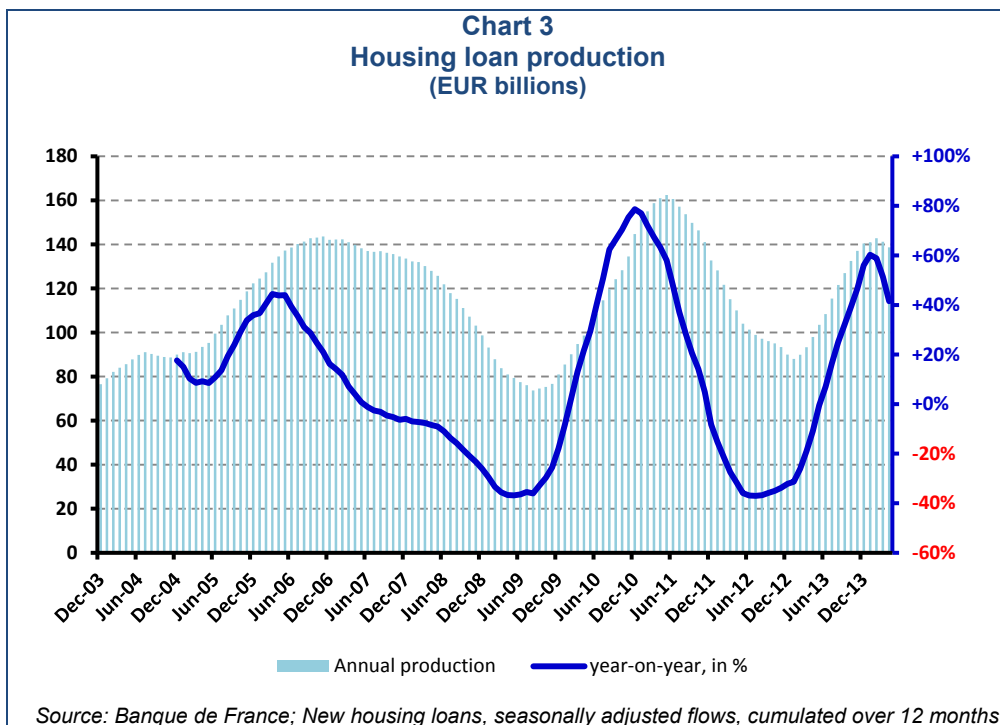


At the same time, the number of transactions for existing homes, the main market segment, showed a slight recovery, rising by 2.1% in 2013 (Chart 2). Although the trend picked up substantially in 2014, with transaction volumes reaching 10.7% growth in the 12 months to April, volumes remained nearly 5% below their long-term average.



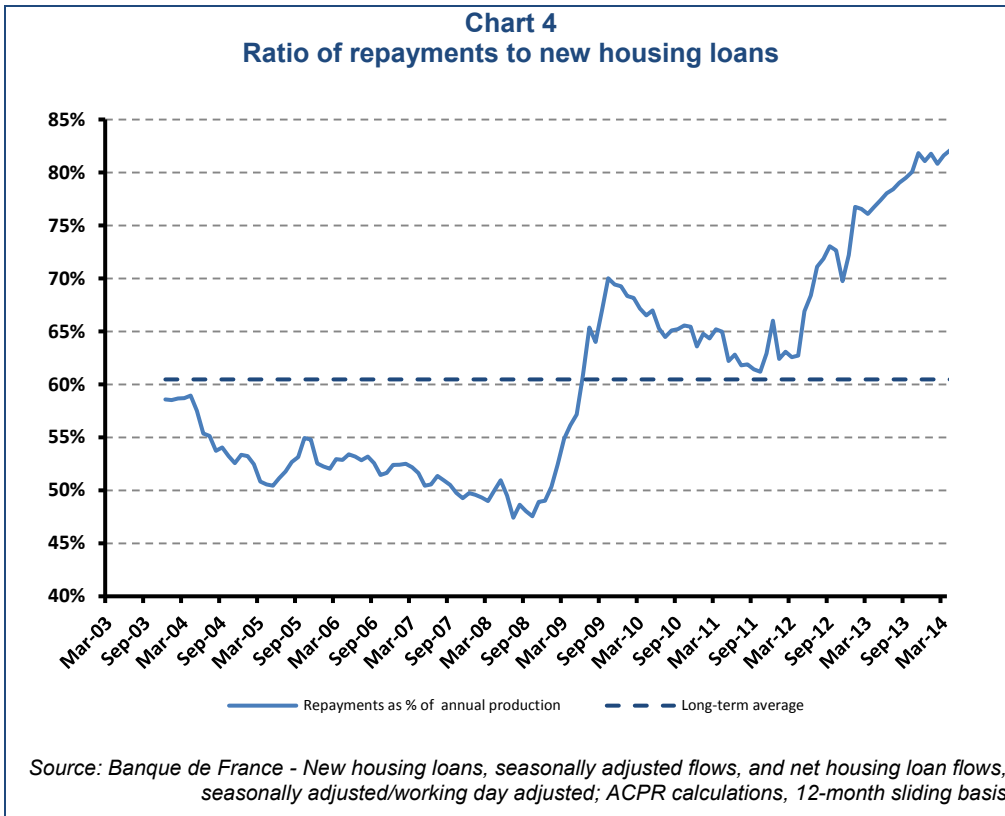
1.2. Sharp rebound in loan production, slight increase in outstanding loans

Housing loan production stood at EUR 140.4 billion in 2013, a very sharp increase of 56% on 2012. However, 12-month growth slowed somewhat in the early months of 2014 (+41.5% to end-April, [Chart 3](#)).

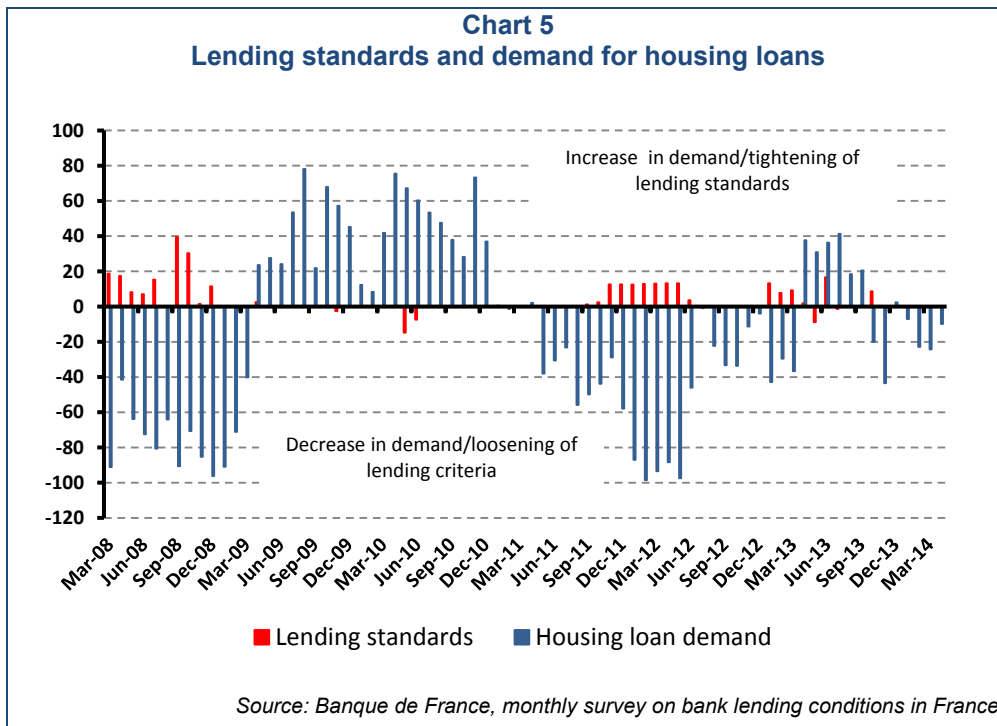


In the recent period, however, we have seen a significant widening in the gap between the growth rate of gross and net production, which takes account of repayments by borrowers (as set in loan contracts or in advance). In fact, during 2013, repayments (the difference between gross and net housing loan flows)

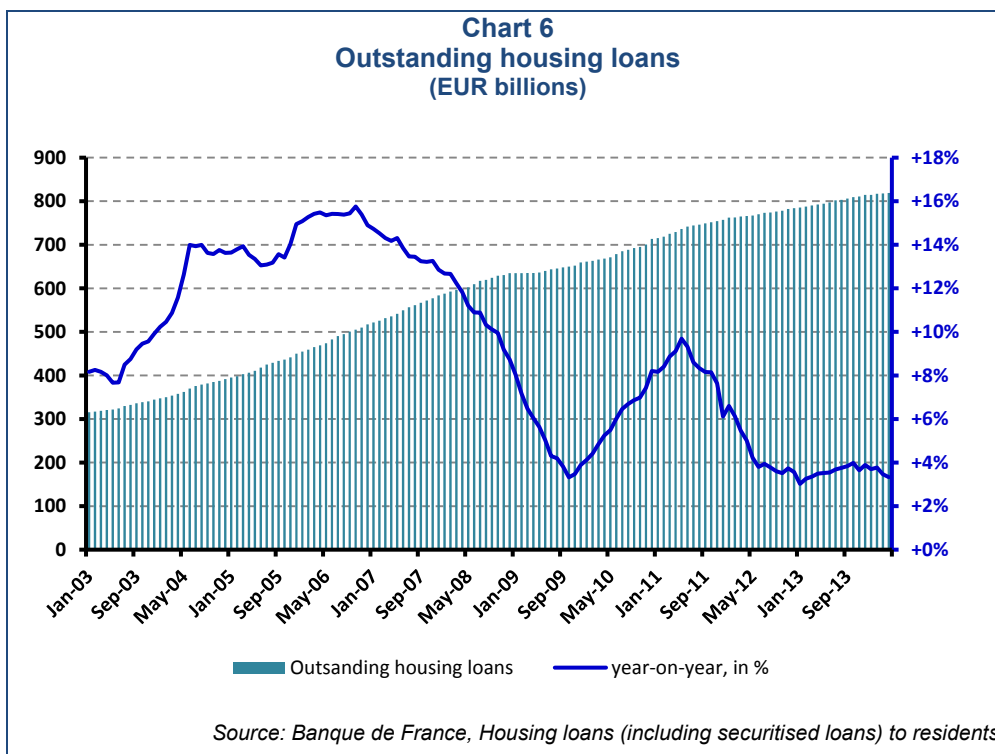
"absorbed" a far greater portion of production than the long-term average. What's more, this situation appears to be completely new (Chart 4).



After picking up somewhat in the second and third quarters of 2013, housing loan demand fell again at the end of the year and continued to shrink in 2014 (Chart 5). Meanwhile, lending standards remained relatively unchanged.



Consequently, growth in outstanding housing loans has been relatively modest and significantly below its long-term average (Chart 6): at end-March 2014, outstanding housing loans stood at EUR 819.1 billion, an increase of 3.3% over the previous 12 months, compared with average growth of 9.2% per annum.

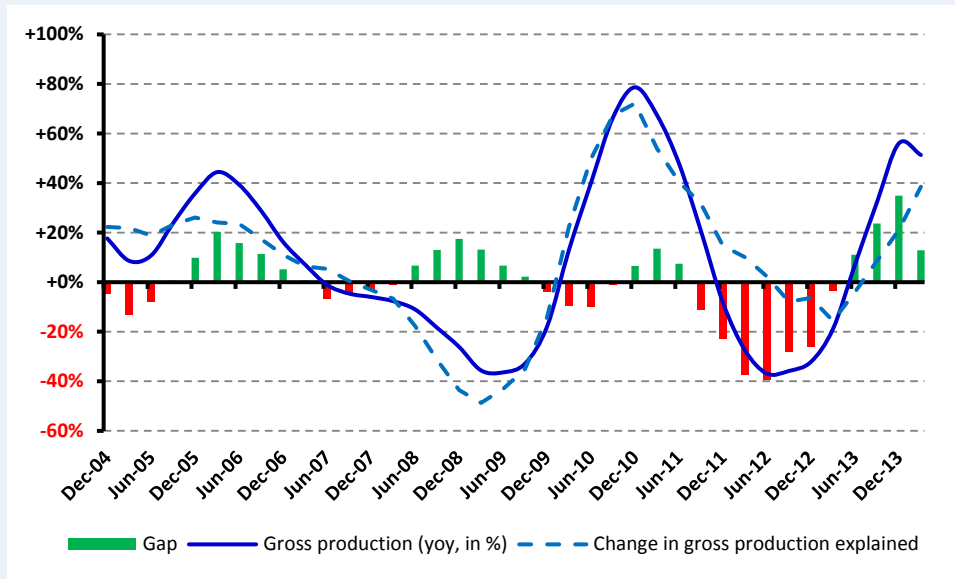


Methodology box 1:
Analysis of the determinants of housing loan production

A simple linear model is tested in this case: it is assumed that the annual variation in housing loan production ($\Delta P/P$) is a function of the variation in property prices ($\Delta C/C$), the variation in the volume of transactions ($\Delta V/V$) and the level of interest rates on property loans (T): $\Delta P/P = \alpha \Delta C/C + \beta \Delta V/V + \delta T + \varepsilon$; the model is tested first on gross production and then on net production.

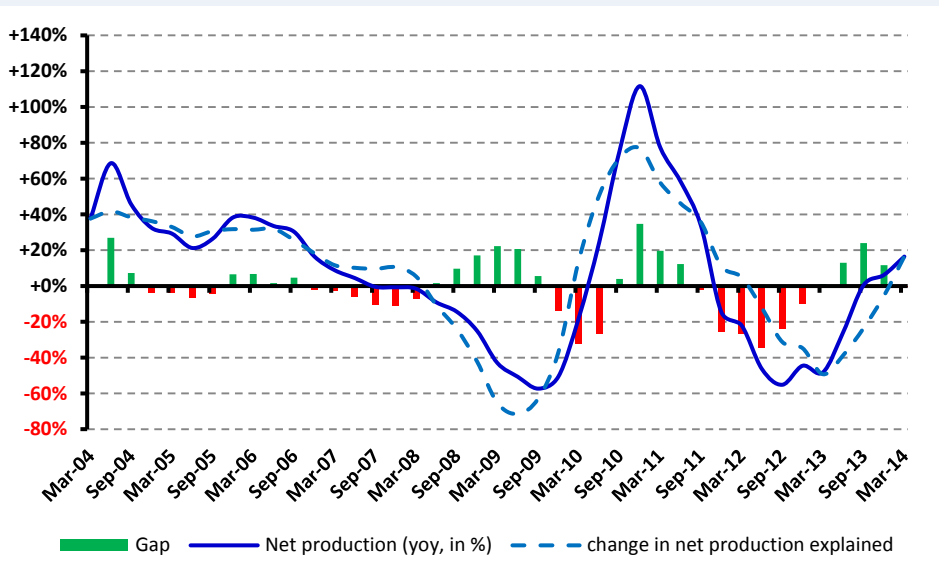
It appears that, in general, the model explains a significant portion of the variation in housing loan production, as [Chart 7](#) and [Chart 8](#) illustrate (NB: the “gap” equals the difference between observed and modelled variation; it appears a little more significant than in 2011-2012, which indicates that the projected variation based on the equation is an overestimate).

Chart 7
Changes in gross housing loan production



Source: Banque de France, INSEE and CGEDD according to DGFIP (MEDOC) and notaries' databases; ACPR calculations

Chart 8
Changes in net housing loan production



Source: Banque de France, INSEE and CGEDD according to DGFIP (MEDOC) and notaries' databases; ACPR calculations

While actual net production returned to its expected level in early 2014, gross production remains above that level, although the gap seems to be shrinking rapidly having gone from nearly 35% at end-2013 to a little under 13% in early 2014.

Nevertheless, gross production and net production trends do not appear to be sensitive to the same factors: in the case of gross production, interest rate levels and the number of transactions appear to be the determining factors, as well as the constant in the model; by contrast, transaction volumes and price movements mainly account for net production trends, while the level of interest rates has only a very limited impact (Table 1).

Table 1
Regression coefficients for gross and net production (period: 2004-2014)

	Production	
	gross	net
α ($\Delta C/C$)	-14.88 NS	3.28 (***)
β ($\Delta V/V$)	0.72 (***)	2.34 (***)
δ (T)	1.65 (***)	2.05 NS
ε	66.18% (***)	- NS
R^2	76.20%	84.29%
DW	0.3474	0.635

Source: Banque de France, INSEE and CGEDD according to DGFIP (MEDOC) and notaries' databases; ACPR calculations; (***) and (**) indicate statistical significance at 1% and 5% respectively

The greater significance of property prices on net production than on gross production may be attributed to loan renegotiation (see below) which skews gross production dynamics relative to other economic determinants.

However, positive residual autocorrelation can be detected in both cases ($DW \in [0 ; d_1]$, $d_1 = 1.580$ for gross production, with a confidence interval of 1% and 1.112 for net production) suggesting that other variables may have to be taken into account in this model, which is very much a preliminary approach².

The net production model may nevertheless be slightly improved by lagging the variables T and $\Delta C/C$ by four and two quarters respectively (Table 2), even though positive residual autocorrelation remains. The quality of the gross production model is weakened as a result, insofar as gross production in particular appears far more responsive to changes in interest rates.

Table 2
Regression coefficients for gross and net production (period: 2004-2014) with lagged interest rate and property price variables

	Production	
	gross	net
α ($L_{\Delta C/C}$)	-7.17 NS	12.95 (***)
β ($\Delta V/V$)	0.19 (***)	2.41 (***)
δ (L_T)	1.92 NS	2.56 (**)
ε	38.85% NS	-57.58% (**)
R^2	70.38%	86.54%
DW	0.323	0.575

Source: Banque de France, INSEE and CGEDD according to DGFIP (MEDOC) and notaries' databases; ACPR calculations (***) and (**) indicate statistical significance at 1% and 5% respectively

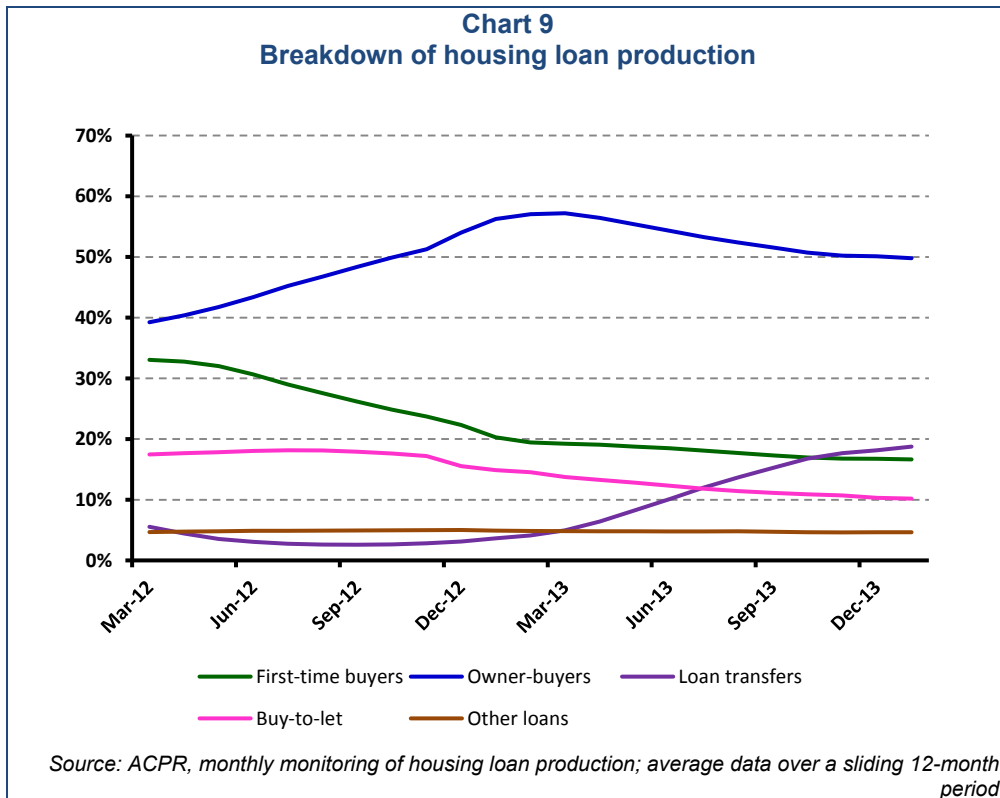
1.3. Credit activity dominated by owner-buyers and loan transfers.

Owner-buyers continued to account for a significant share of activity in 2013, although the percentage was slightly down on the March 2013 peak (Chart 9); however, the outstanding feature of 2013 was the very sharp growth in loan transfers,³ which accounted for 18.1% of production⁴ at the end of the year, the highest level since 2007 (Chart 10).

² For example, the relationship between changes in production and demand and banks' lending standards could be tested but the available histories are relatively limited.

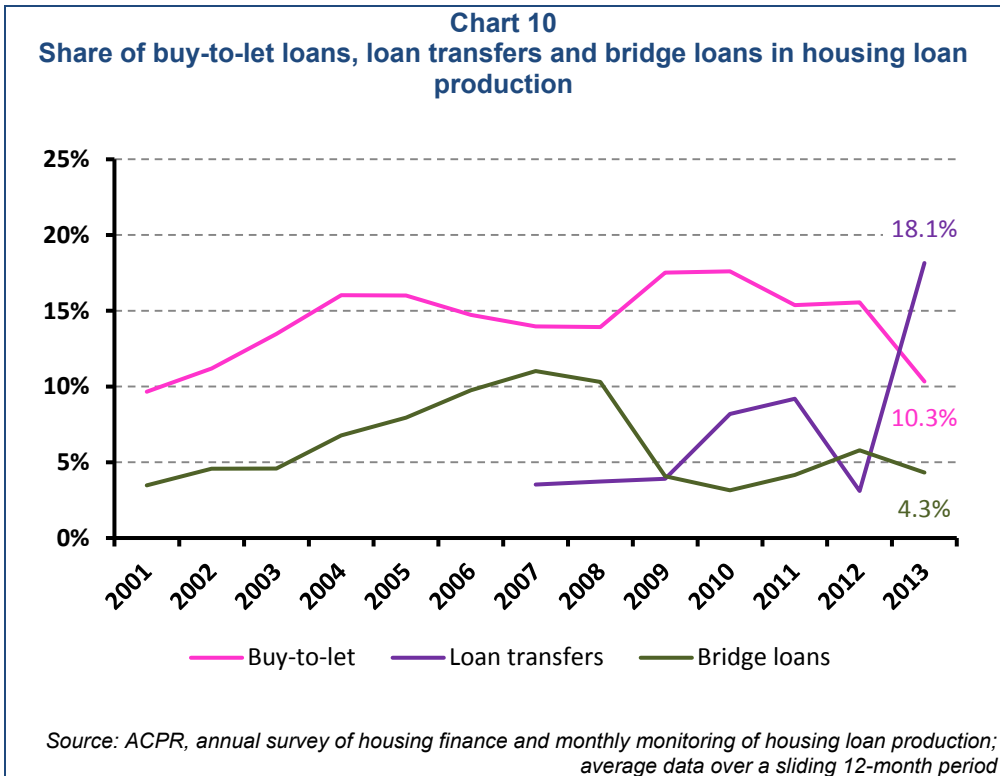
³ In a context of lower interest rates, fixed-rate borrowers have an incentive to renegotiate their credit conditions with their bank or to contract a new loan from a new bank. In this paper, loan transfer refers to the situation where borrowers switch to another bank, so that there is an early redemption of their former loans.

This overall figure, which is consistent with the sharp increase in repayments in 2013 (see [Chart 4](#)), masks a wide range of individual responses, with the share of loan transfers in loan production ranging from 0% to 34.4% depending on the banks surveyed.

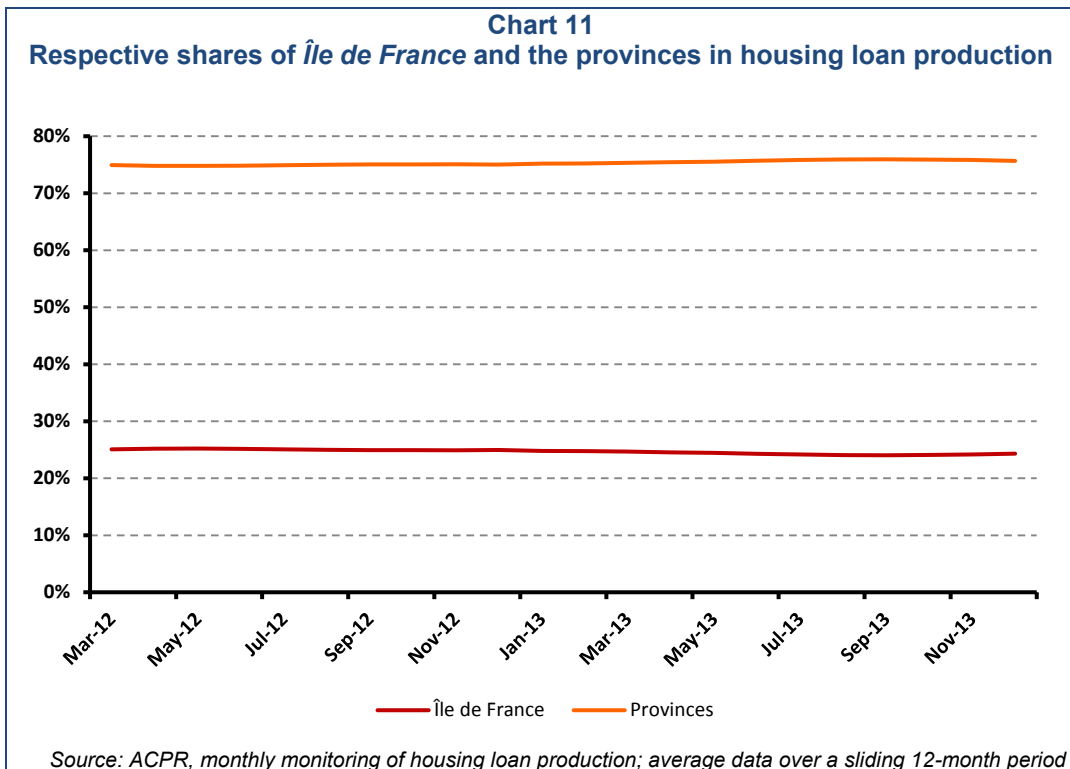


By contrast, buy-to-let investment fell significantly to a level close to 2001. Similarly the share of bridge loans in overall production remained small at almost 6 percentage points below its 2007-2008 level.

⁴ This figure does not take account of any rescheduling of loans granted by banks to their own customers.

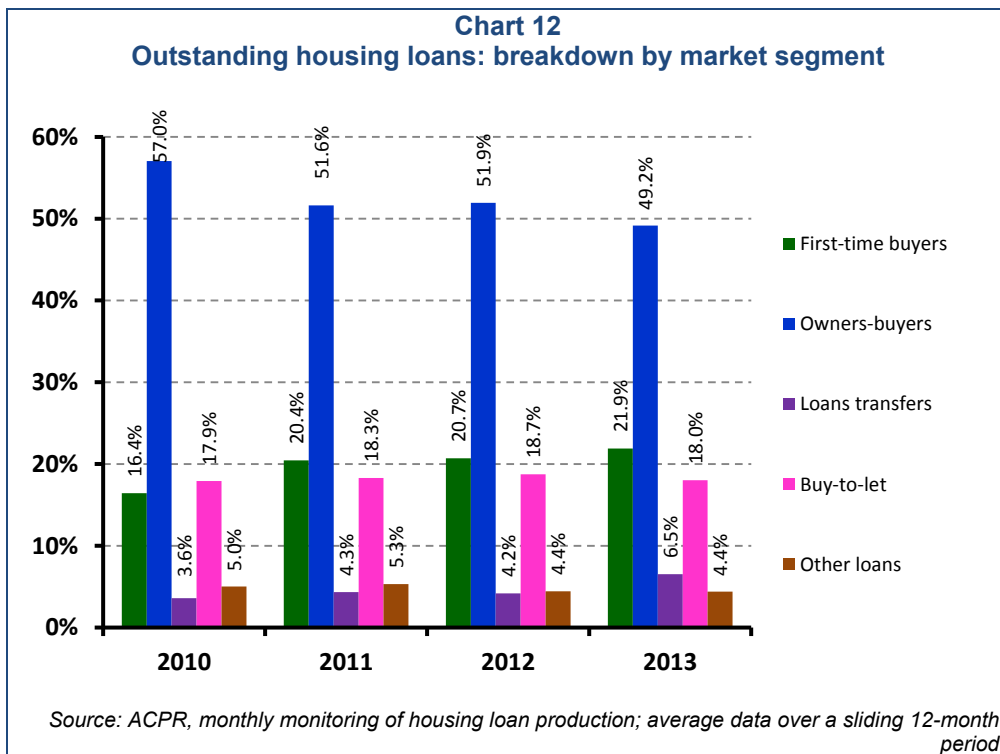


The *Île de France* and provincial percentages in total loan production remained relatively stable, at around 25% and 75% respectively (Chart 11).



The breakdown of outstanding loans by loan type is relatively unchanged from 2012; there has simply been a slight reduction in owner-buyers due to combined

increases in first-time buyers, which reflects their relatively greater share in past loan vintages than at present⁵ and loan transfers (Chart 12).

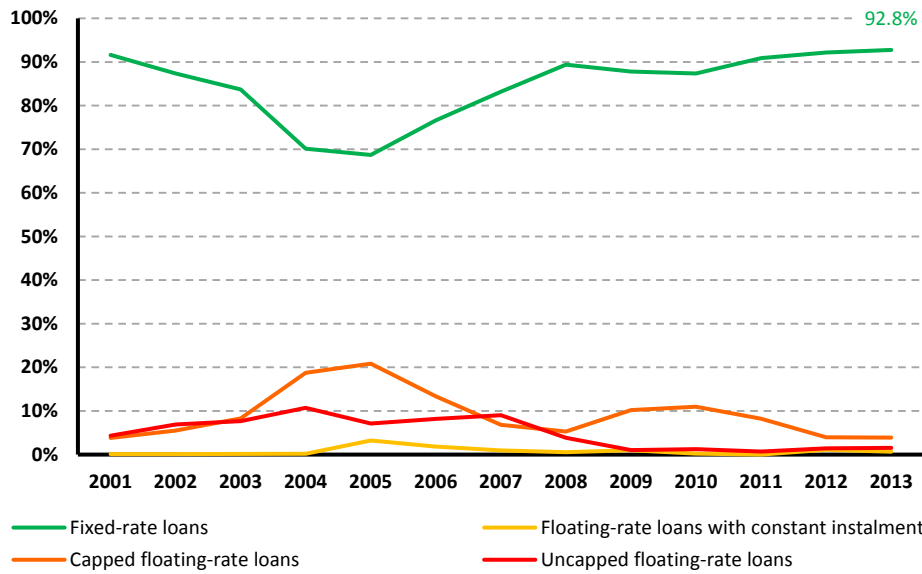


1.4. Fixed-rate loans remain predominant

The proportion of fixed-rate loans in total production rose slightly to reach 92.8% in 2013. Floating-rate loans now make up only 6% of the total. In particular, uncapped floating-rate loans, which are the most risky for borrowers, represented no more than 1.5% of loan production in 2013 (Chart 13).

⁵ The decline in first-time buyers in total production seems to be a relatively recent phenomenon (see above); before lending standards for interest-free loans (*prêt à taux zéro* – PTZ) were tightened, they could account for up to 37.5% of monthly flows (in January 2012), which is significantly higher than their share in outstanding loans at end-2013.

Chart 13
New housing loans: breakdown by interest rate type*



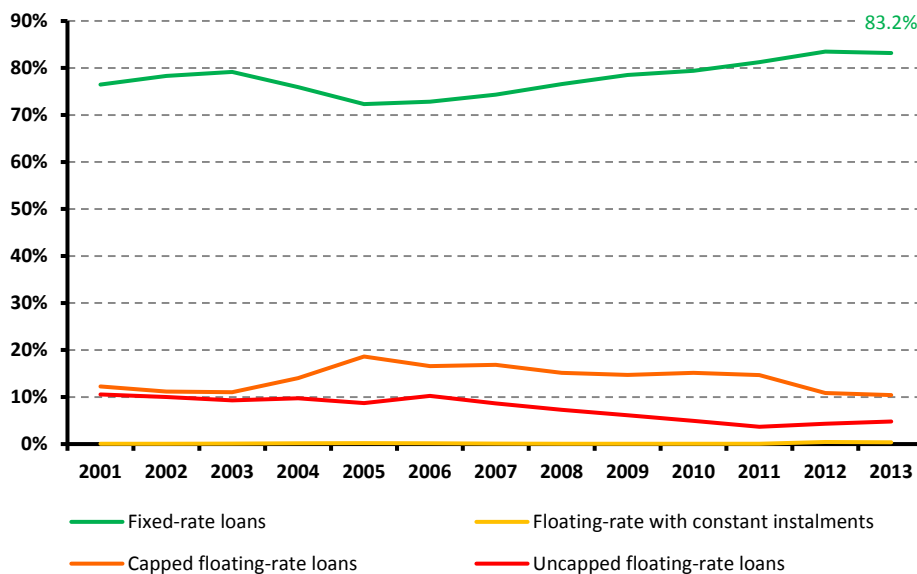
Source: ACPR, annual survey on housing finance

*Other types of loans are not represented given their very low share (1.2% in 2013)

Other types of loans include interest-only loans which were only a tiny share of new loans in 2013 (0.33%). Although this is an average that covers a range of individual figures, the highest proportion of interest-only loans among the banks surveyed is still very small at 4.1%.

Meanwhile, while the share of fixed-rate loans in outstanding housing loans fell slightly to 83.2% at end-2013, it remains at its highest level since 2001. Among floating-rate loans, whose share stabilised at 15.6%, uncapped loans represent no more than 4.8% of total outstanding loans at end-2013 (Chart 14).

Chart 14
Outstanding loans: breakdown by interest rate type*



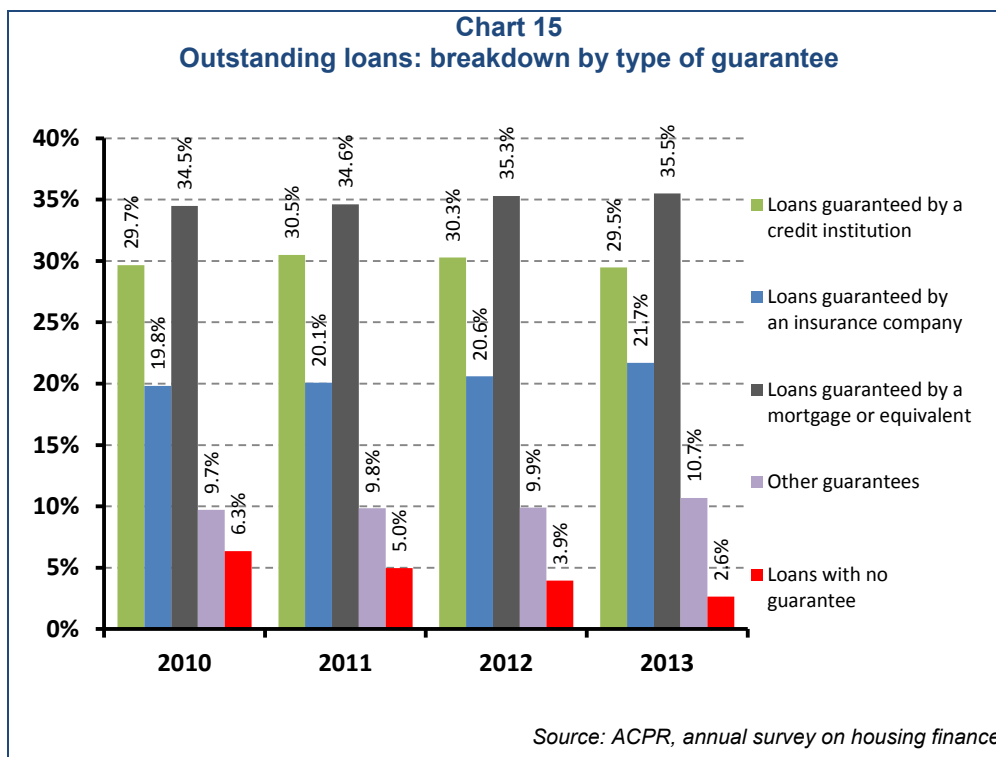
Source: ACPR, annual survey on housing finance

*Other types of loans are not represented given their very low share (1.2% in 2013)

1.5. Nearly all housing loans are secured

In 2013, 97.4% of outstanding loans were secured, and the proportion has been rising since 2010 (Chart 15).

Covering a little over one-third of outstanding housing loans, mortgages are predominant and were up slightly over the period, reflecting, at least in part, the rising proportion of first-time buyers (see above).



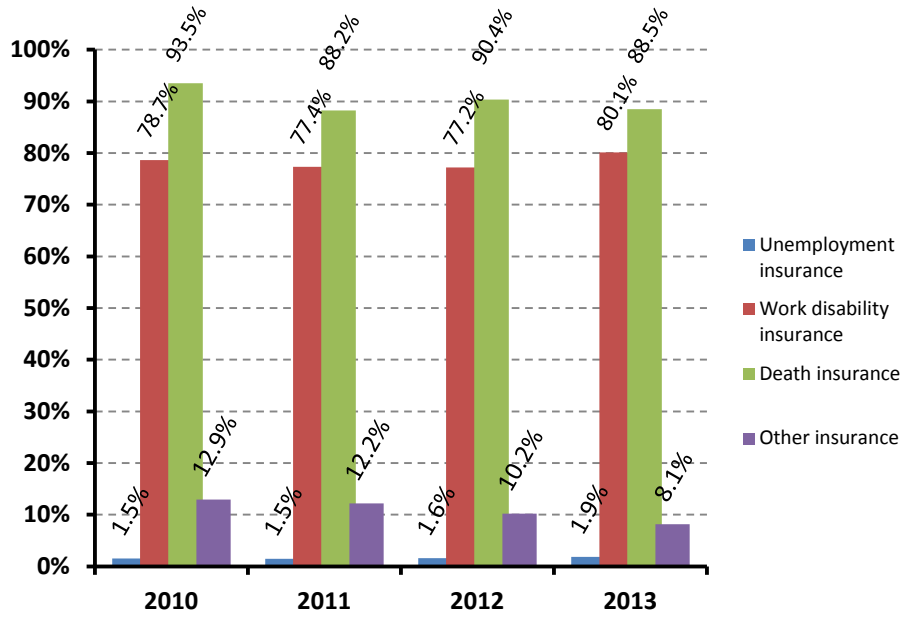
Guarantees from credit institutions are in second place, at a little under 30% of outstanding loans, a relatively stable proportion over the period under review. These mainly involve loans covered by a guarantee issued by *Crédit Logement*, as well as the property mutual guarantee companies (*sociétés de caution mutuelle immobilières* - SOCAMI), owned by the Banques Populaires, or the Cautionnement Mutuel de l'Habitat (CMH, a Crédit Mutuel Group guarantee body).

Guarantees issued by insurance companies accounted for just under 22% of guarantees at end-2013, which is slightly up on 2010. They are mainly from insurance subsidiaries of major French banking groups: *Compagnie Européenne de Cautionnement et de Garantie* (CEGC, belonging to BPCE group) and *Caisse d'Assurances Mutuelles du Crédit Agricole* (CAMCA).

Other guarantees, which can take many forms including collateral and personal guarantees, include in particular the *Fonds de Garantie à l'Accession Sociale* (FGAS; Social Purchase Guarantee Fund – a state-funded guarantee scheme for low income borrowers).

The vast majority of borrowers are also insured against work disability and death (Chart 16), as was the case last year. Unemployment cover is still uncommon.

Chart 16
Proportion of borrowers covered by an insurance policy



Source: ACPR, annual survey on housing finance

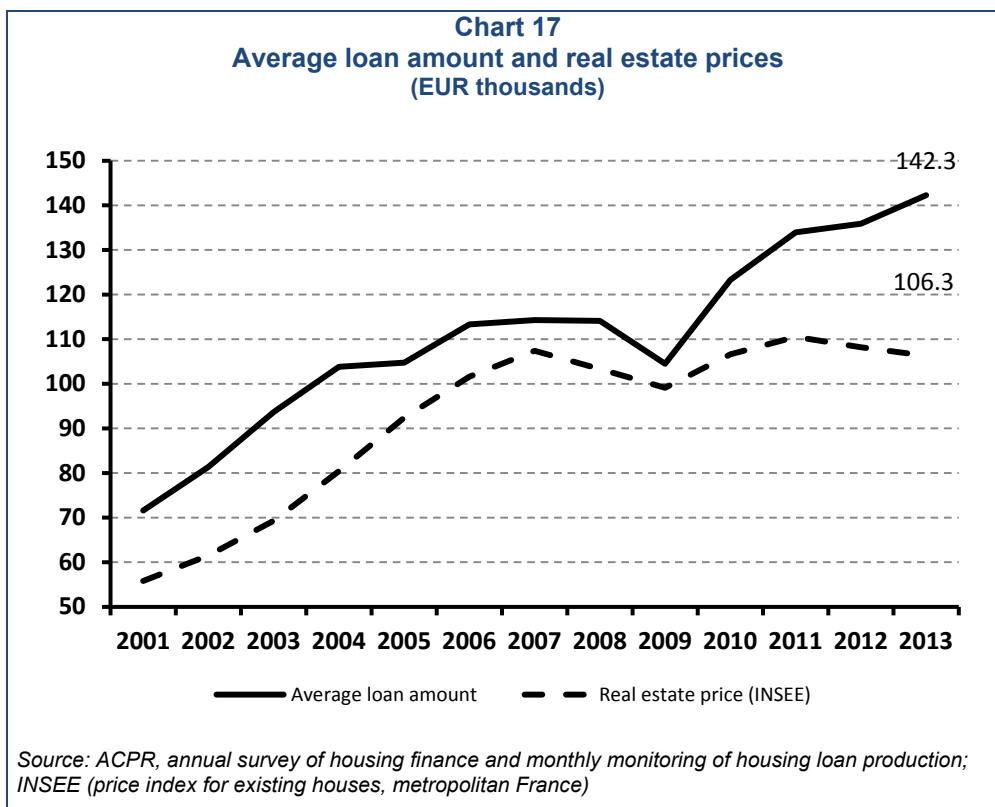
2. Borrowers' risk profile

As the bulk of housing loans issued in recent years are fixed-rate or capped floating-rate loans, borrowers are largely covered against rises in interest rates. Consequently, the monitoring of underwriting standards is pivotal to ensuring borrower solvency.

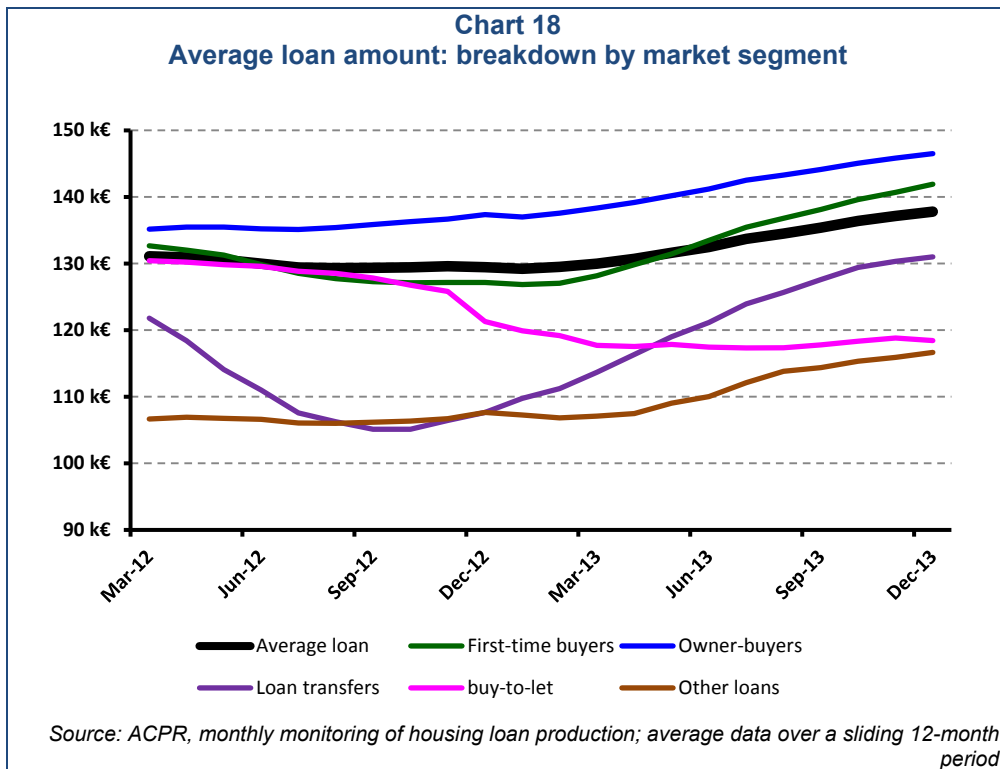
It is important to remember that lending decisions are in general based mainly on an assessment of borrowers' creditworthiness and ability to meet their loan repayments as they fall due. As such, the banks tend to focus mainly on income stability and affordability, and, unlike in other markets, particularly in the US and UK, the value of the property is most often a secondary consideration.

2.1. The average loan amount up in 2013

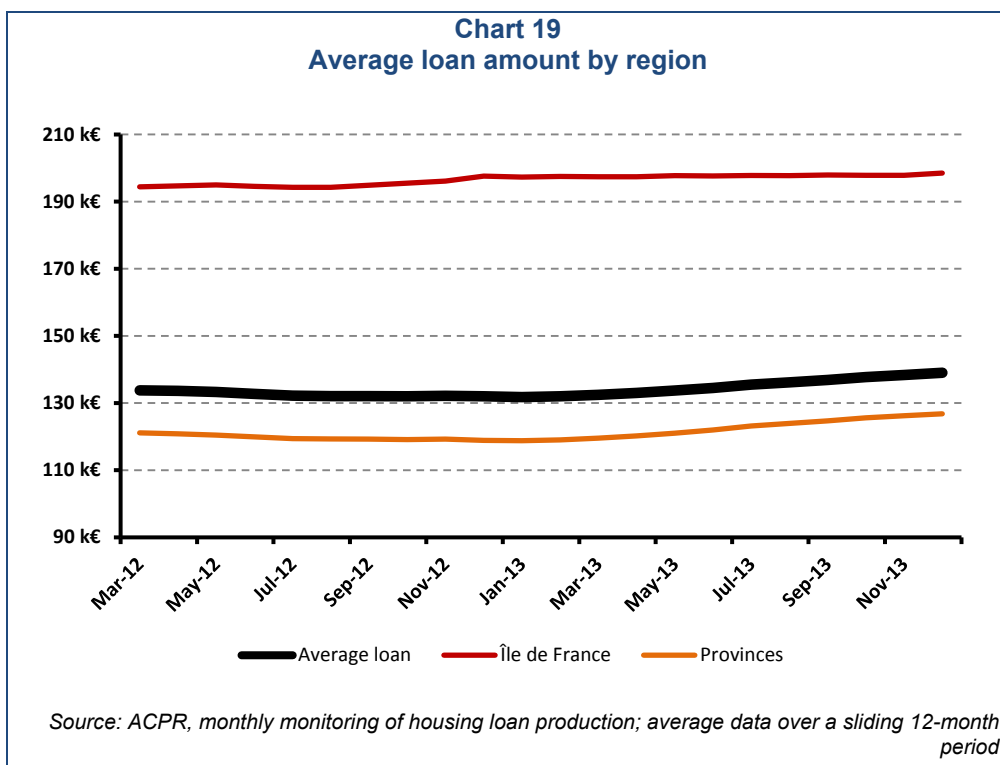
Despite decreasing property prices, the average loan amount continued to rise in 2013 to EUR 142,264 (Chart 17).



With the exception of buy-to-let loans, the average loan amount rose across all types of transactions, with loan transfers rising particularly sharply (Chart 18), a trend that may reflect transfers being made earlier in the life of the loan and therefore involving larger principal amounts.



Finally, while the average loan amount has risen in the provinces since the second quarter of 2013, it has remained relatively stable in *Île de France* since the beginning of 2013 (Chart 19).



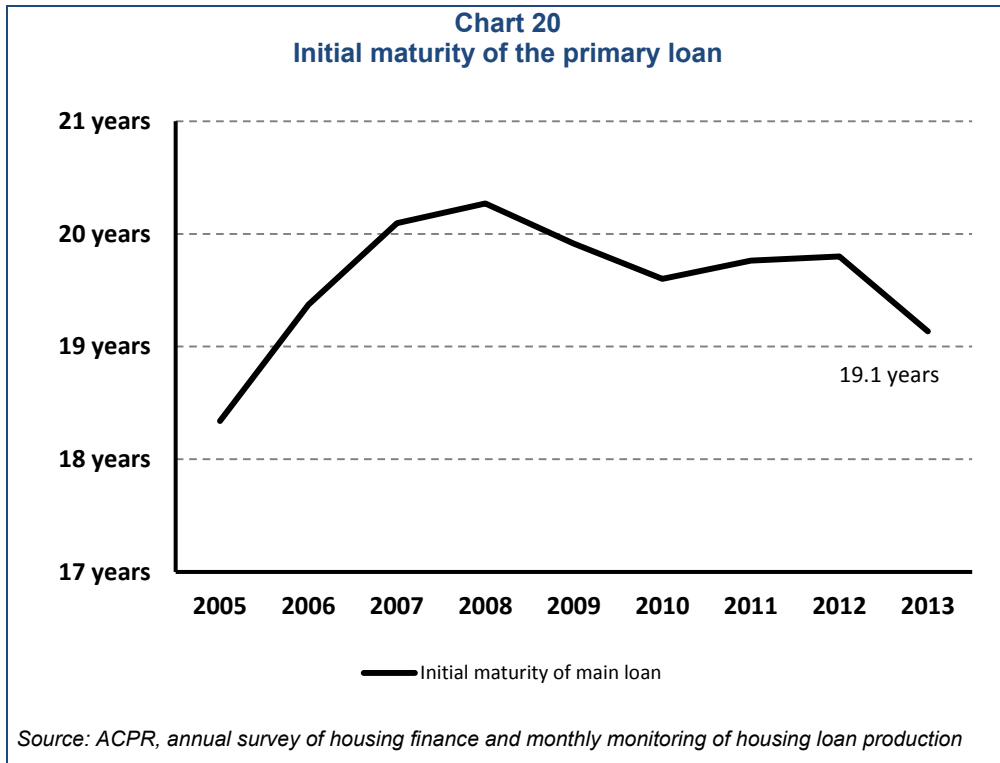
2.2. Initial and effective maturities of primary loans decreased

Definitions

Initial maturity: for a given housing loans vintage, the initial maturity is the loan-weighted average of maturities as set up in the lending contracts at issuance.

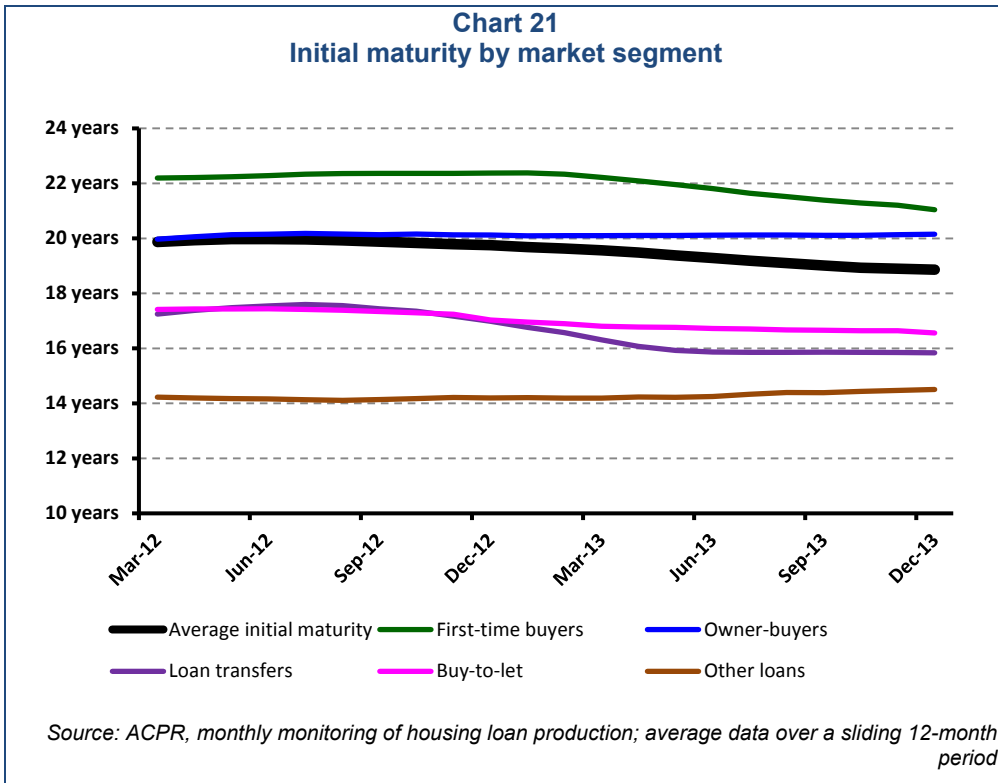
Residual maturity: this refers to its remaining expected life until its expiry date, as set up in the lending contract.

The initial maturity of primary loans⁶ declined substantially in 2013, to 19.1 years, which is below the 2006 level (Chart 20).



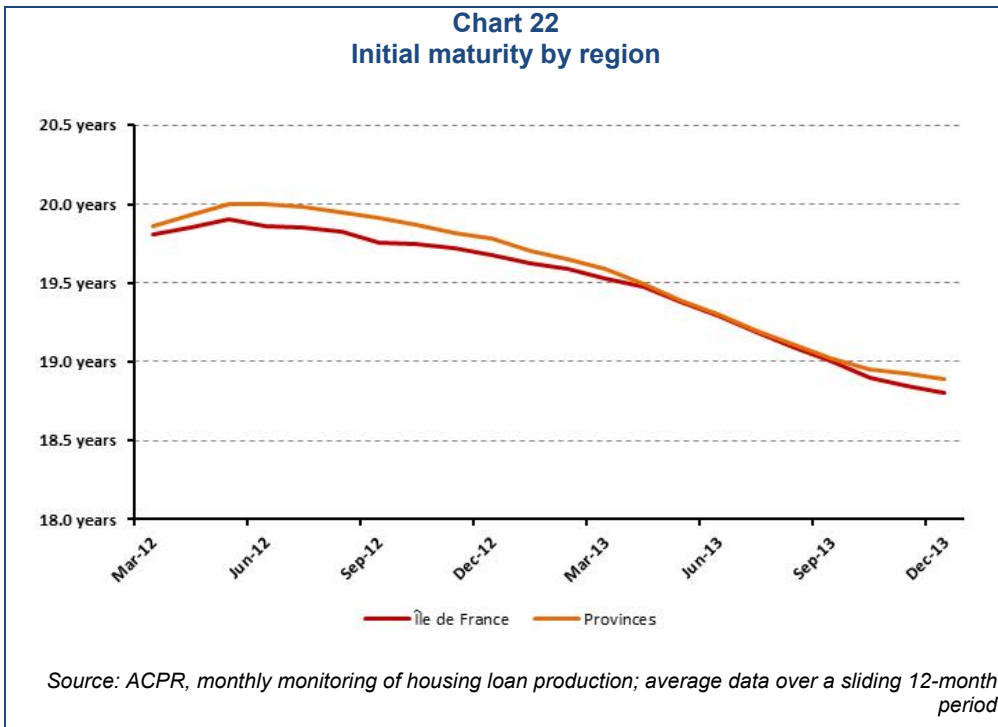
The decline in the average initial maturity of primary loans appears due primarily to first-time buyers and transferred loans, and to a lesser extent, buy-to-let loans. By contrast, the initial maturity of loans for owner-buyers is stable (Chart 21).

⁶ As opposed to loans for home improvements and bridge loans.



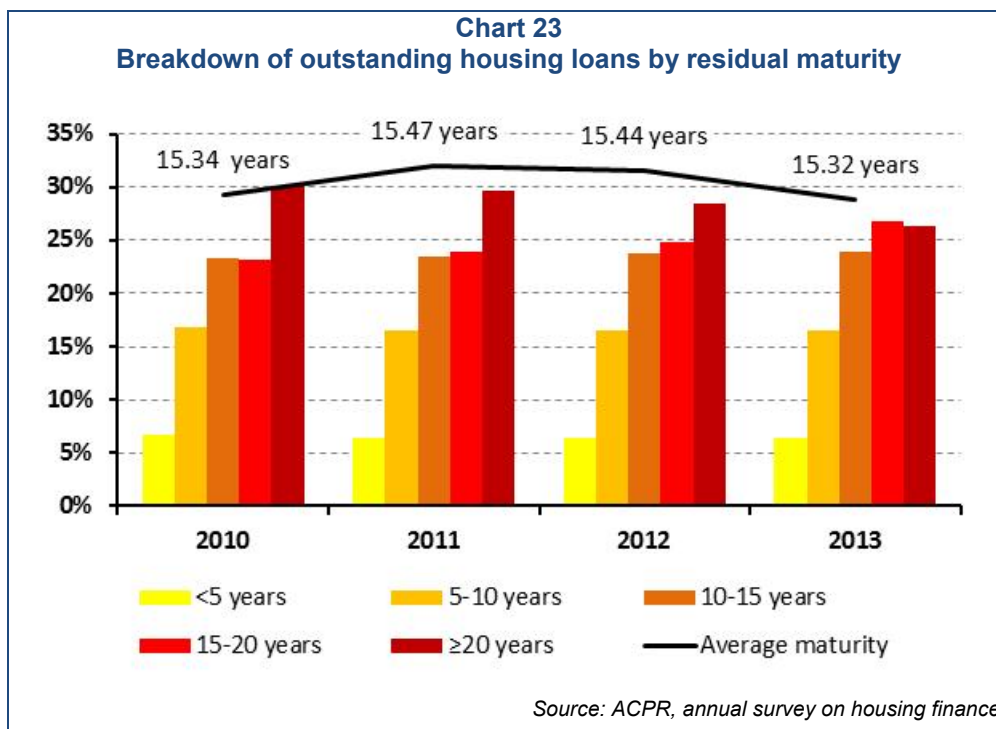
According to the banks surveyed, loans with the longest initial maturities (i.e. > 25 years) tend to be granted to borrowers from manual and clerical socioeconomic categories, who are young (below the 40-45 age bracket) and are using a subsidised *prêt à l'accession sociale* (loan for social purposes - PAS) along with a PTZ interest-free loan to buy a first property.

Finally, the situations in *Île de France* and the provinces remain almost identical (Chart 22).



It is worth noting, however, that the residual maturity of outstanding housing loans fell slightly in 2013, due to the progressive decline in loans with more than 20 years

left to run and an increase in those with a residual maturity of between 15 and 20 years. The structure of the other segments was extremely stable (Chart 23).

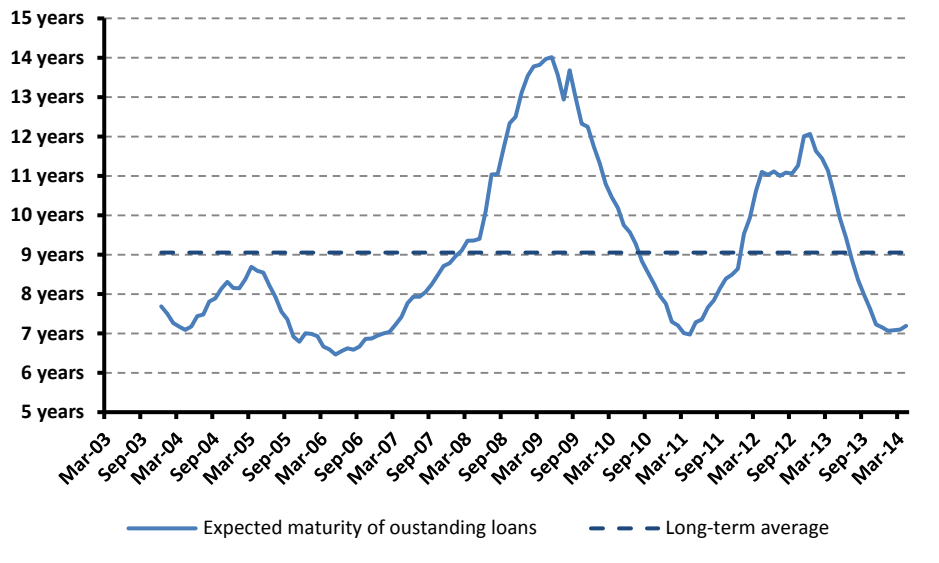


Expected maturity of outstanding housing loans

The expected maturity of outstanding housing loans can be calculated by comparing gross and net production flows with outstanding amounts. The expected maturity equals the ratio, on a given date, between outstanding loans and repayments calculated as the difference between gross and net flows over a sliding 12-month period (see above).

In the long run, housing loans have an average expected maturity of slightly more than nine years. Over the recent period, however, this has shortened substantially, to a little over seven years at the beginning of 2014 (Chart 24), due to the sharp rise in the volume of repayments resulting from the increase in transfers (see Chart 24 above).

Chart 24
Expected maturity of outstanding housing loans



Source: Banque de France - New housing loans, seasonally adjusted flows; net housing loan flows, seasonally adjusted/working day adjusted; Outstanding housing loans (including securitised loans) - ACPR calculations

2.3. Further increase in average LTV

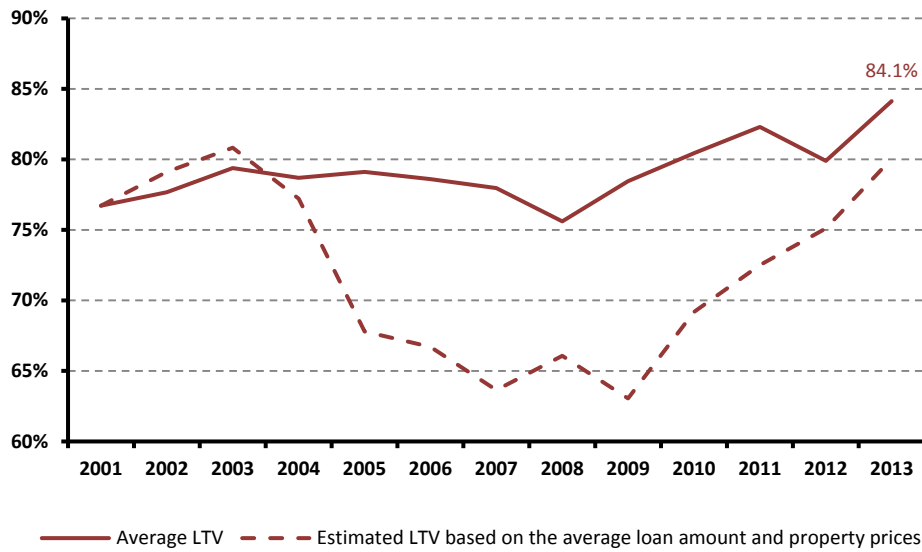
Definitions

The loan to value (LTV) at origination is the ratio between the amount of the primary loan for home buying and the purchased property price (excluding stamp duty and legal fees). During the life of the loan, the LTV is the ratio between the outstanding principal of the loan and the market value of the financed property.

Credit institutions provide average LTV information broken down by transaction weighted by the loan amounts granted during a given period of time.

The average LTV at origination jumped sharply relative to 2012, from 79.9% to 84.1% (Chart 25), its highest level since 2001.

Chart 25
Initial average LTV



Source: ACPR, annual survey of housing finance and monthly monitoring of housing loan production; INSEE

If we compare the average LTV with the LTV updated annually based on changes in the average loan amount and in property prices (dotted curve⁷), two distinct periods emerge – one before and one after the crisis:

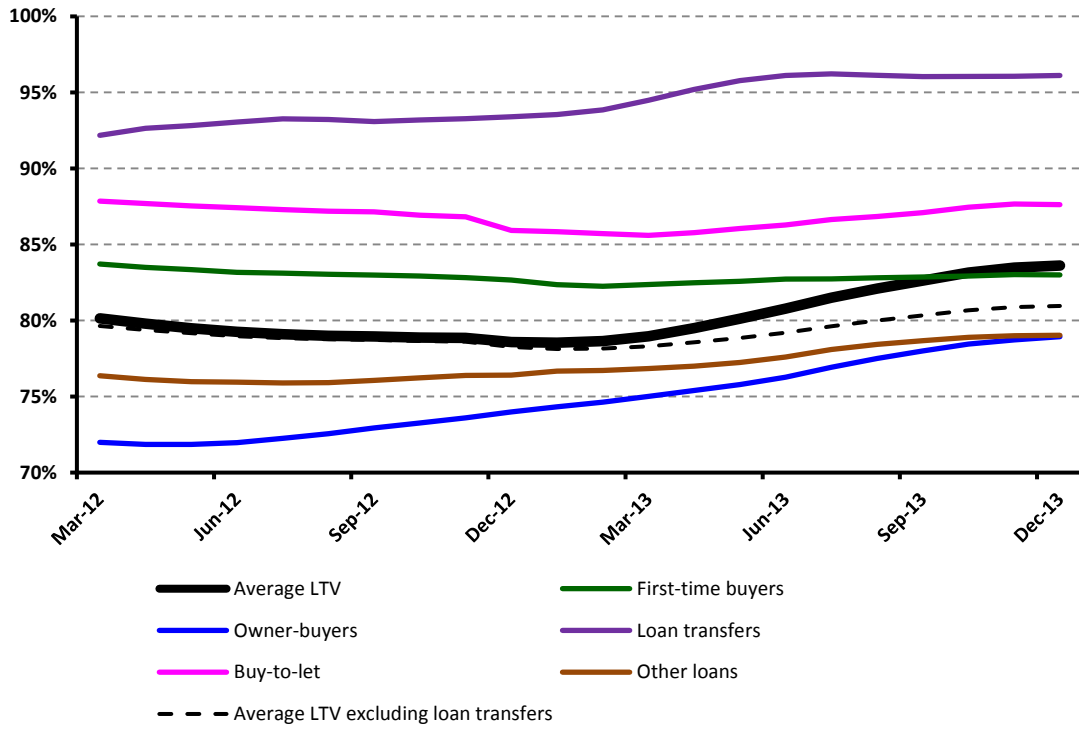
- From 2003 to 2007, the average initial LTV fell much less sharply than the average updated LTV, despite the sharp rise in property prices; this suggests a relaxation of lending standards or less selectivity (increase in the proportion of lower income/asset customers with smaller deposits);
- Since 2007, however, LTV has been rising, but less rapidly than the updated LTV: falling prices and a higher average loan amount should have resulted in a sharper increase in initial LTV. This may point to a certain tightening of lending standards or greater selectivity (increase in the proportion of higher income/asset customers with substantial deposits). The phenomenon was particularly pronounced in 2008, when initial LTV continued to fall rapidly despite falling prices, which raised the updated LTV.

Over the recent period, while the sharp rise in the LTV ratio is partly due to the increase on the main market segment (owner-buyers, see [Chart 26](#)), it should also be seen in relation to the substantial increase in loan transfers, which tend to involve credit with significantly higher-than-average LTV at origination⁸. Excluding this structural effect, the increase in average LTV at origination would have been smaller (rising from 78.3% at end-2012 to 81.2% at end-2013).

⁷ The average LTV at origination for 2001 (LTV_{2001}) is updated, on each payment date, using the average loan amount (L) and the property price index (I): $\forall n > 2001, LTV_n = LTV_{2001} \times (L_n/L_{2001}) / (I_n/I_{2001})$. The difference between the two curves is interpreted as the result of a structural effect (change in the proportion of loans with a higher/lower LTV than average) and changes in lending standards, although the respective contributions of the two variables cannot be identified at this stage.

⁸ This situation, which is relatively atypical – as the estimates of LTV during the life of the loan below illustrate, with no loan vintage showing an LTV above 95% in 2013 – relates to the fact that the outstanding principal on transferred loans is very often entered in banks' IT systems instead of the value of the property. This automatically produces LTVs close to 100%.

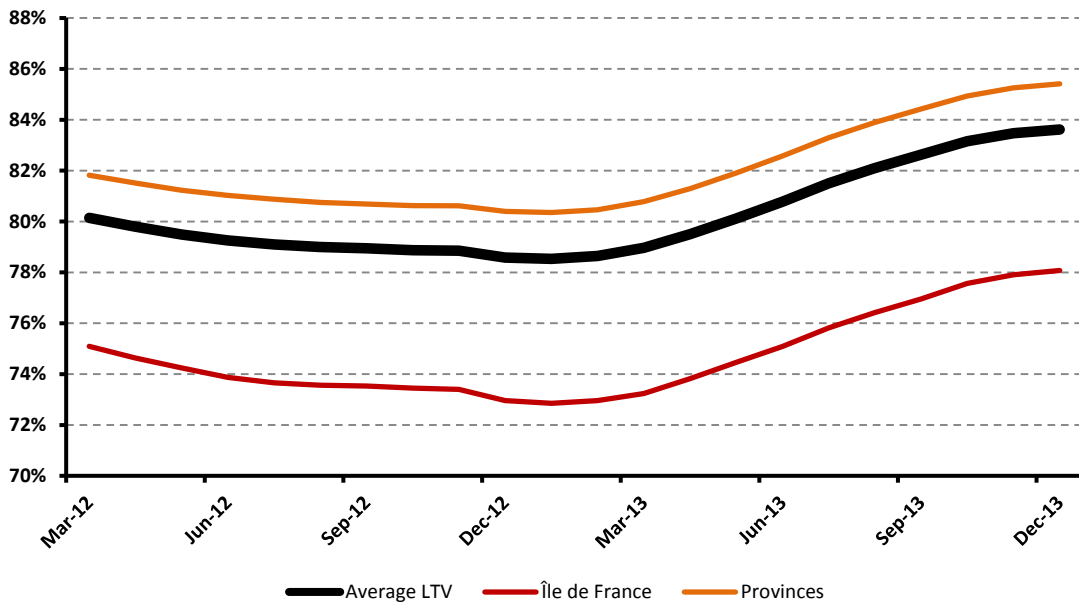
Chart 26
Average LTV at origination by market segment



Source: ACPR, monthly monitoring of housing loan production; average data over a sliding 12-month period

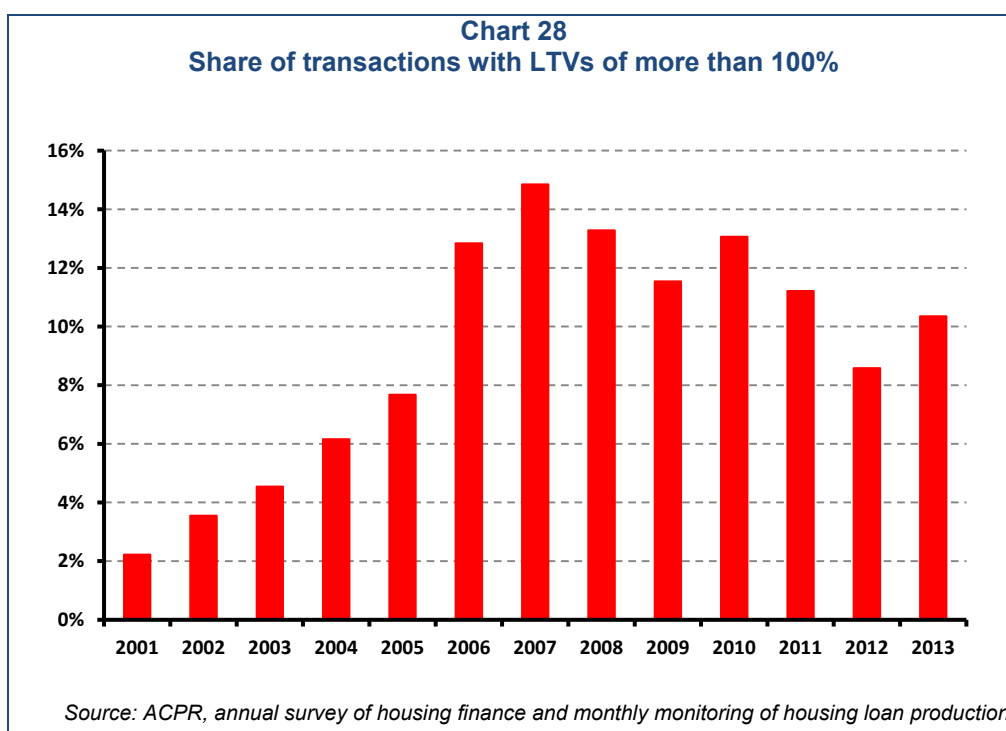
In addition, the increase in average LTV at origination is relatively similar in the provinces and in *Île de France*, although the latter remains substantially higher (Chart 27).

Chart 27
Average LTV at origination by region



Source: ACPR, monthly monitoring of housing loan production; average data over a sliding 12-month period

Finally, the increase in average LTV at origination also reflects the rebound in transactions involving LTVs of more than 100%, particularly for owner-buyers (Chart 28). This is where the borrower's contribution is negative with the bank financing not only the purchase but also notary fees and/or guarantee-related charges, etc. Nevertheless, at 10.4% of the total in 2013, such transactions remained below their 2007 peak of 14.9%.



Stripping out loan transfers, the profile of borrowers with loans with the highest LTVs at origination was relatively unchanged. Such loans are mainly extended to:

- first-time buyers, who are generally younger borrowers, the majority of whom are manual or office workers, with quite low incomes and little savings, who are sometimes buying a property with the help of social assistance schemes;
- buy-to-let investors, for whom the search for tax optimisation leads to an almost 100% leverage. In this case, borrowers are mainly middle or senior managers or professionals with high incomes and substantial assets.

The ACPR's research has revealed that, while borrower default risk tends to increase along with LTV, this does not hold for LTVs above 100%, beyond which point the relationship is reversed since the borrowers concerned generally have high incomes and/or significant assets⁹.

Methodology box 2:
Estimating LTV during the life of the loan

Although banks were asked in the annual survey on housing finance to provide the average LTV of their outstanding loans, in aggregate and by tranche¹⁰, this information is not yet usable since the majority of respondents reported figures close to the average LTV at origination.

As such, an estimate was made of the LTV of outstanding housing loans based on annual loan vintages since 2003¹¹, the average characteristics of the loans at

⁹ See ACPR, [Débat économique et financier n° 13](#), June 2014.

¹⁰ <70%, [70% - 80%[, [80% - 90%[, [90% - 100%[and ≥100%.

¹¹ First available year in the figures published by the Banque de France.

origination (interest rate, duration, LTV), taken from the annual survey of housing finance and the residential property price index (whole of France):

- based on the amount of loan vintage k ($CRD_{0,k}$), as well as the average interest rate (t_k) and the average initial maturity (d_k) of loans of this vintage, the annual repayment amount is calculated (A_k), assuming that all the loans are issued at the beginning of the year; therefore, the outstanding principal of loan vintage k for year n , is¹²:

$$CRD_{n,k} = CRD_{0,k} - \sum_{i=0}^{n-1} (A_k - CRD_{i,k} \times t_k)$$

- based on the production amount of loan vintage k and the corresponding average LTV at origination ($LTV_{0,k}$), the total value of financed property at origination ($V_{0,k}$) is estimated: $V_{0,k} = CRD_{0,k} / LTV_{0,k}$; these properties are subsequently revalued each year based on the price index for existing residential property (I , assuming, as a preliminary estimate, that all properties follow the price index for France as a whole); thus, the value of properties for year n is:

$$V_{n,k} = V_{0,k} \times I_n / I_0$$

- the LTV of loan vintage k for year n is calculated by comparing the outstanding principal of that vintage for year n against the revalued property for the same year: $LTV_{n,k} = CRD_{n,k} / V_{n,k}$; the LTV of outstanding housing loans for year n is estimated by adding together all loan vintages:

$$LTV_n = \frac{\sum_{k=1}^n CRD_{n,k}}{\sum_{k=1}^n V_{n,k}}$$

Table 3 shows the results of calculations for loan vintages from 2003 to 2013.

Table 3
Estimate of LTV after origination by loan vintage

Average LTV after...	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years
	72.77%	67.76%	64.02%	59.27%	54.56%	50.69%	45.96%	39.67%	32.58%	25.28%	17.36%
2003	67.24%	55.07%	45.31%	38.73%	34.19%	32.90%	31.41%	26.41%	22.68%	20.17%	17.36%
2004	65.06%	54.62%	49.43%	46.09%	49.64%	48.60%	37.47%	34.57%	34.08%	31.10%	-
2005	66.10%	60.13%	56.43%	61.23%	60.48%	47.13%	44.06%	44.14%	41.11%	-	-
2006	68.99%	65.33%	71.61%	71.53%	56.46%	53.55%	54.55%	51.81%	-	-	-
2007	71.49%	78.98%	79.58%	63.40%	60.77%	62.63%	60.28%	-	-	-	-
2008	76.36%	77.33%	61.95%	59.74%	61.99%	60.12%	-	-	-	-	-
2009	78.98%	63.08%	60.65%	62.76%	60.71%	-	-	-	-	-	-
2010	72.04%	69.29%	71.74%	69.45%	-	-	-	-	-	-	-
2011	76.67%	79.82%	77.75%	-	-	-	-	-	-	-	-
2012	78.65%	76.69%	-	-	-	-	-	-	-	-	-
2013	82.32%	-	-	-	-	-	-	-	-	-	-

Source: Banque de France and annual survey on housing finance; ACPR calculations

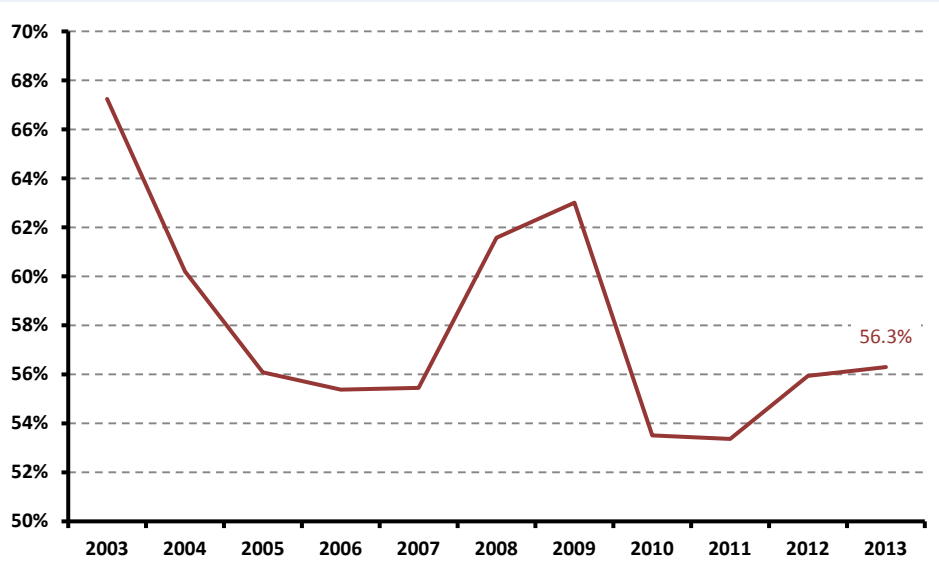
Key information:

- on average, the LTV of a given loan vintage after one year is 72.77%; at the end of one year, however, the 2013 loan vintage showed an LTV of 82.32%;
- the data in the yellow cells are the LTVs of each loan vintage included in the calculation at end-2013 (e.g. the LTV of the 2003 vintage is estimated at 17.36% at end-2013).

Chart 29 shows the estimated average LTV of total housing loans, which reached 56.3% at end-2013, virtually unchanged on 2012 (56%).

¹² The model only takes account of contractual repayments; early repayments are not included.

Chart 29
Estimated LTV for outstanding housing loans after origination



Source: Banque de France and annual survey on housing finance; ACPR calculation

All things being equal and on average, property prices would have to fall by 44% for the value of financed properties to be less than the remaining principal of outstanding loans.

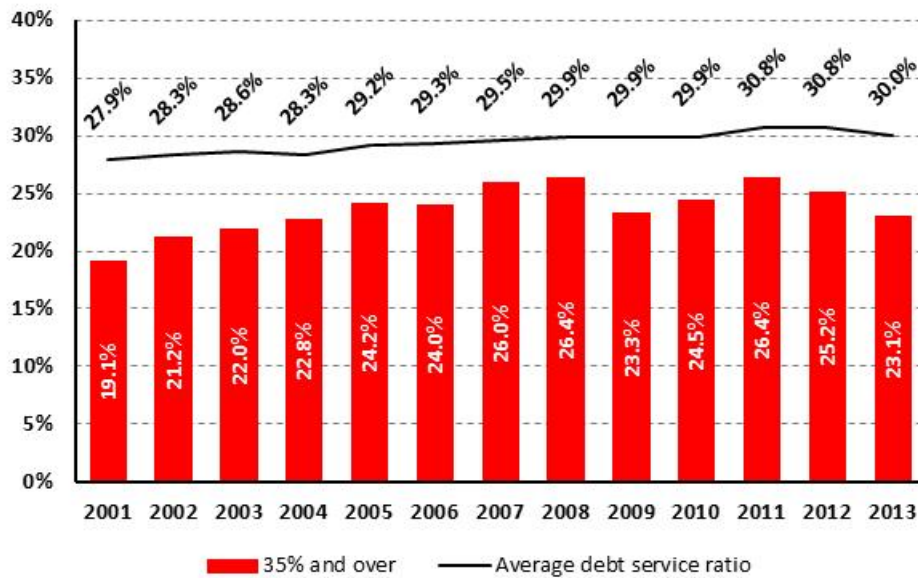
2.4. Stable average debt service ratio, but declining proportion of the most indebted borrowers

Definitions

The debt service ratio is calculated by dividing all of the borrower's regular outgoings (including repayments of all loans) by the borrower's gross income.

The average household debt service ratio was 30% in 2013, slightly below 2011 and 2012 levels (Chart 30). The proportion of the most indebted borrowers in total production fell for the second consecutive year (-2.1 percentage points).

Chart 30
Average debt service ratio and proportion above 35%



Source: ACPR, annual survey of housing finance and monthly monitoring of housing loan production

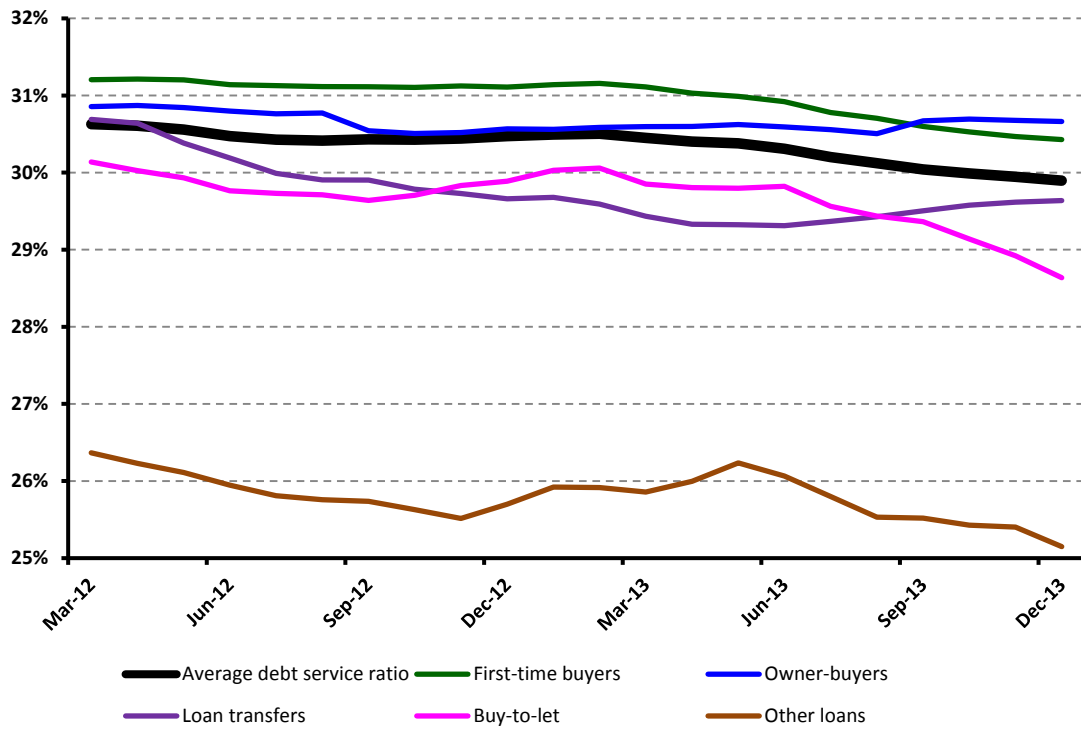
According to the banks included in the survey, the majority of loans with an initial debt service ratio above 35% were issued to relatively affluent borrowers (managers, tradespeople, professionals and entrepreneurs) buying property for investment purposes.

In the same way as for LTV, the ACPR's studies have shown that borrower default risk tends to increase along with the debt service ratio as long as it is below 35%. However, the relationship is reversed above this threshold, since borrowers at this level generally have high incomes and/or significant assets¹³.

The decline in the debt service ratio reflects trends in buy-to-let investment, first-time buyers and other loans (Chart 31).

¹³ See ACPR, [Débat économique et financier n° 13](#), June 2014.

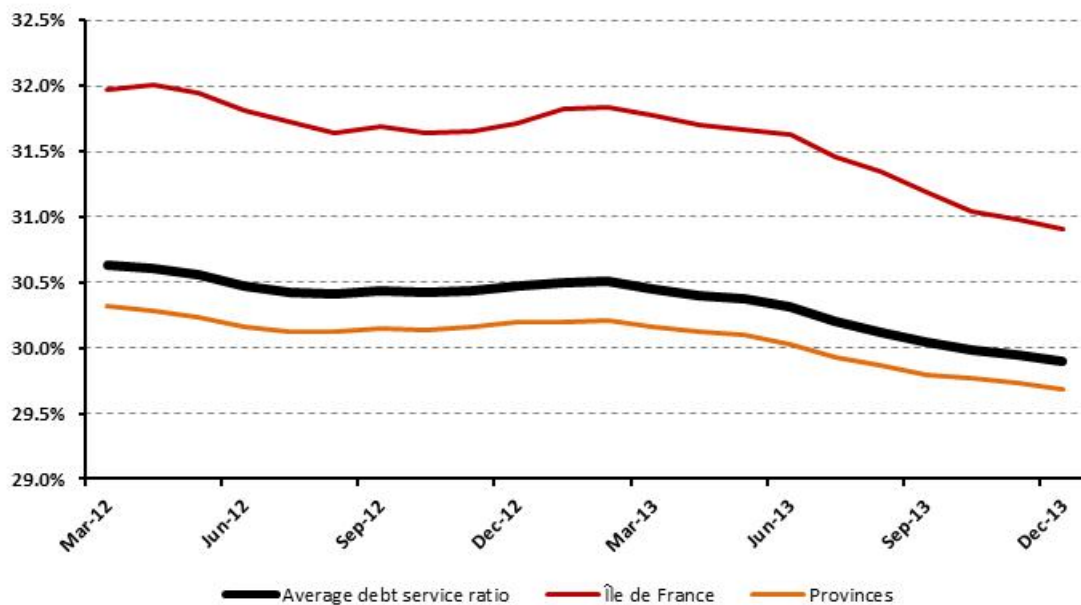
Chart 31
Average debt service ratio by market segment



Source: ACPR, monthly monitoring of housing loan production; average data over a sliding 12-month period

The debt service ratio fell at a similar rate in both *Île de France* and the provinces, although a significant gap remains between the two regions, with the *Île de France* showing substantially higher levels (Chart 32).

Chart 32
Average debt service ratio by region



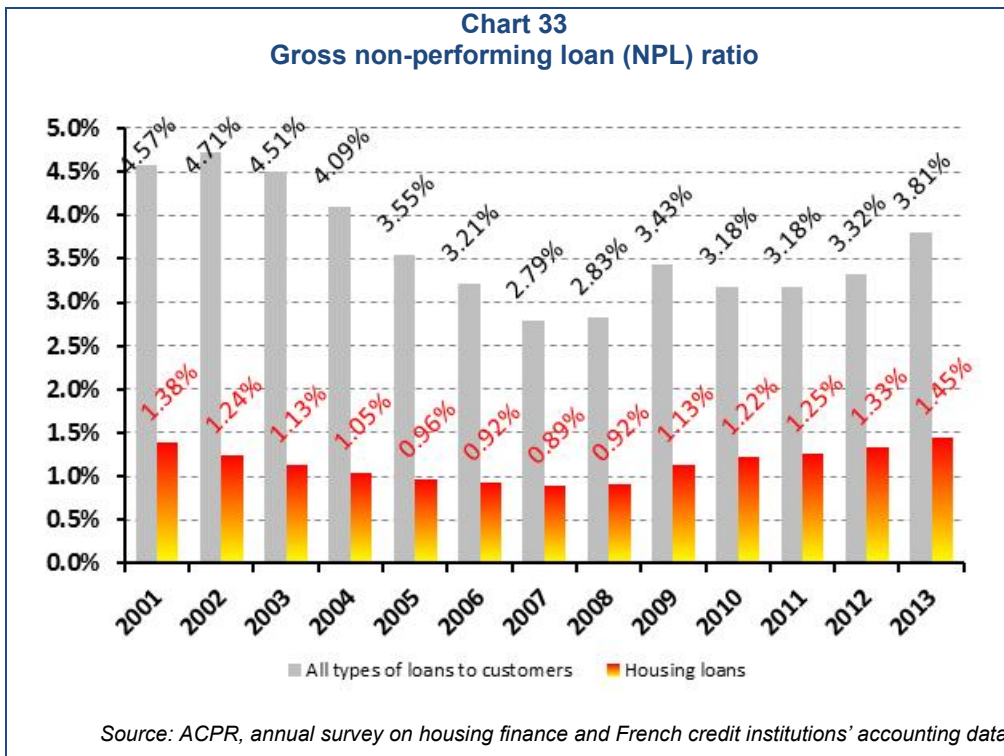
Source: ACPR, monthly monitoring of housing loan production; average data over a sliding 12-month period

3. NPL ratios rose in 2013 but the cost of risk on housing loans is moderate

3.1. Non-performing loans and coverage ratios

3.1.1. The non-performing loan ratio grew at a moderate pace in 2013

The gross non-performing loan (NPL) ratio for housing loans¹⁴ grew once again in 2013, reaching 1.45%, its highest level since 2001. However, it is still largely below the average NPL ratio for all types of loans to customers¹⁵ issued by credit institutions in France (Chart 27).



Nonetheless, the relatively low rate of outstanding housing loans in default should be somewhat qualified: the figures shown in Chart 33 are based solely on the non-performing loans on the balance sheets of the banks included in the annual survey. However, apart from in extremely rare cases where guarantors do not accept them, loans in default covered by guarantees are transferred to the guarantors' balance sheets, which lowers the "actual" gross NPL ratio for housing loans. As an illustration, the inclusion of non-performing loans recorded on Crédit Logement's

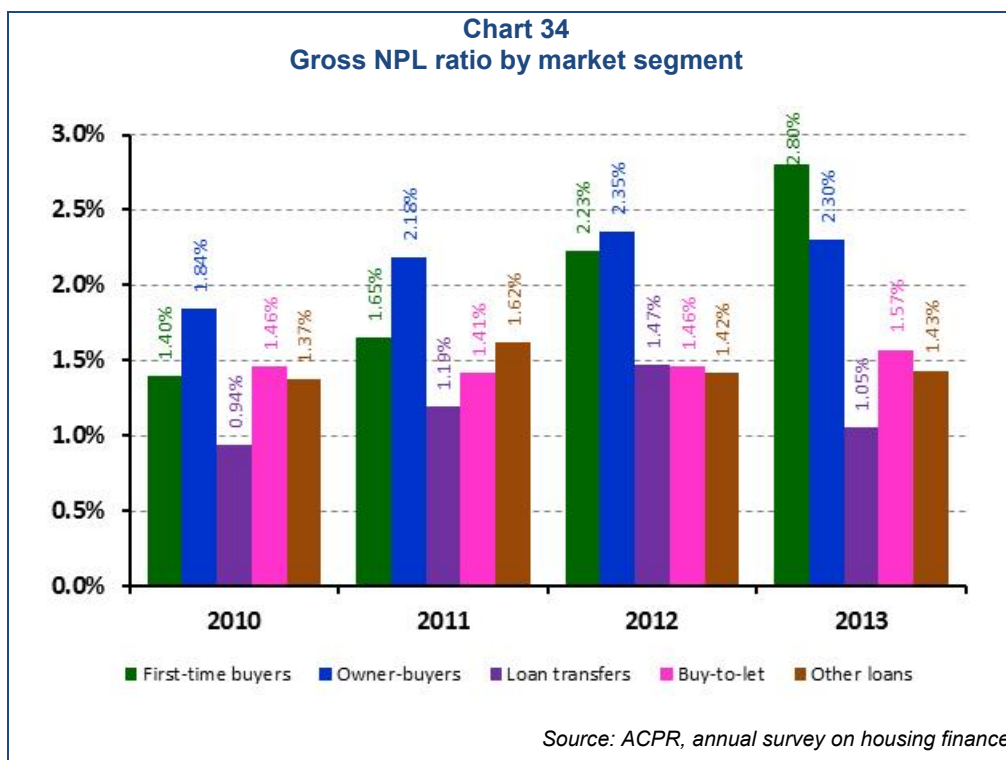
¹⁴ The gross non-performing loan ratio (D) differs from the probability of default of outstanding housing loans (p). The first is a measure of the total outstanding loans in default on a given date, which may cover several vintages of loans in default, while the second simply follows flows of outstanding loans that have fallen into default in the year under review; in order to get from p to D we need to know the average period n that loans in default are "parked" on the bank's balance sheet: $D \approx n \times p$. This period n reflects the average time taken to complete legal proceedings resulting either in the resumption of payments on the loan (return to a performing loan), or to clear the debt after the exercise of all remedies and, where applicable, moving the irrecoverable balance to loss.

¹⁵ Loans to customers (resident and non-resident) cover:

- commercial loans, export credits, cash loans, investment credits, housing loans and other credit, factoring, securities received under repurchase agreements and current account overdrafts.
- loans issued to non-financial companies, individual entrepreneurs, private individuals, insurance companies and pension funds, not-for-profit institutions serving households (*institutions sans but lucratif au service des ménages* - ISBLSM), central governments, local authorities and social security agencies,
- as well as loans to financial institutions.

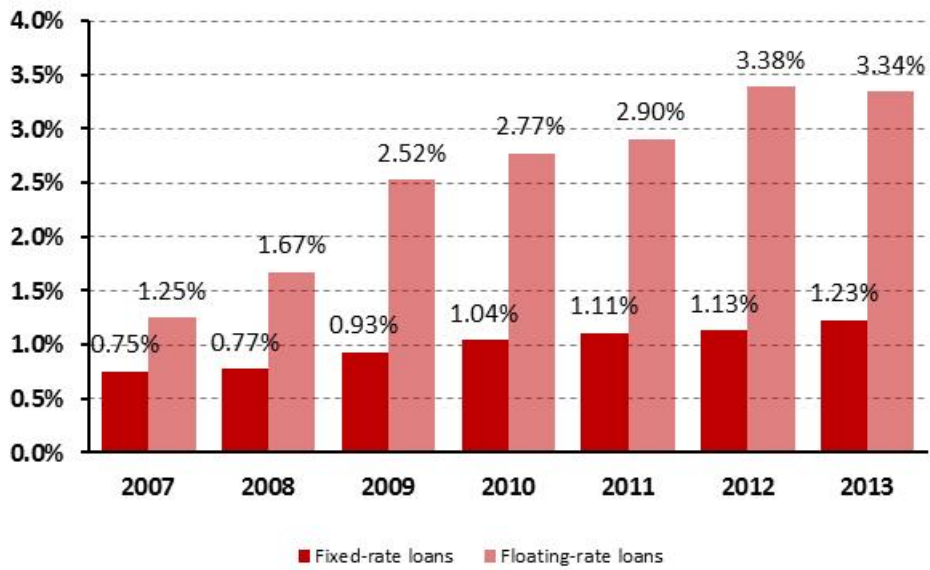
balance sheet at 31 December 2013 increases the gross non-performing loan ratio from 1.45% to 1.55%.

A closer look reveals material differences across market segments. First-time buyers, who displayed some of the lowest gross NPL ratios in 2010, were the riskiest segment in 2013, with a doubling of the gross NPL ratio over the past four years (Chart 34). Conversely, owner-buyers, who previously accounted for the highest ratio, experienced a very slight drop in their gross non-performing loan ratio. Trends are less pronounced on the other segments. However, these figures should be viewed with caution as the number of banks that provided information on this point is still limited.



After rising steadily since 2007, the gross NPL ratio for floating-rate loans fell for the first time in 2013. Despite this, they still show a significantly higher ratio than fixed-rate loans, for which the default rate rose only slightly (Chart 35). The relatively high gross NPL ratio for floating-rate loans, which may seem paradoxical given that interest rates have been falling overall since the financial crisis, may be due to the fact that these loans more often involve weaker borrowers with greater financial constraints who opt for floating-rate loans because these generally offer lower rates than fixed-rate loans of the same maturity.

Chart 35
Gross NPL ratio by interest rate type

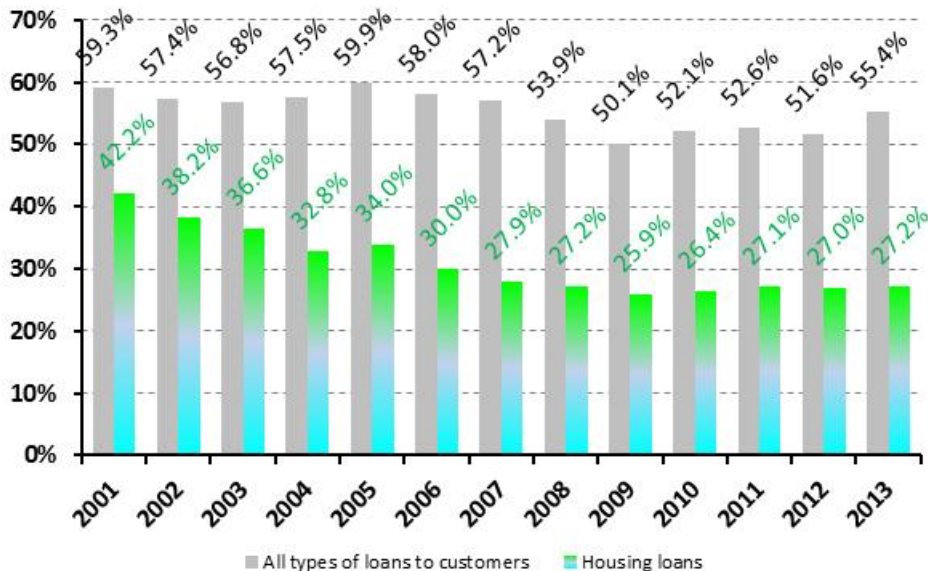


Source: ACPR, annual survey on housing finance

3.1.2. A stable coverage ratio

The overall coverage ratio of non-performing housing loans was relatively stable in 2013, at a level almost unchanged since 2008. However, it is still much lower than the overall coverage ratio of NPL for all types of loans to French customers of banks operating in France (Chart 36).

Chart 36
NPL coverage ratio



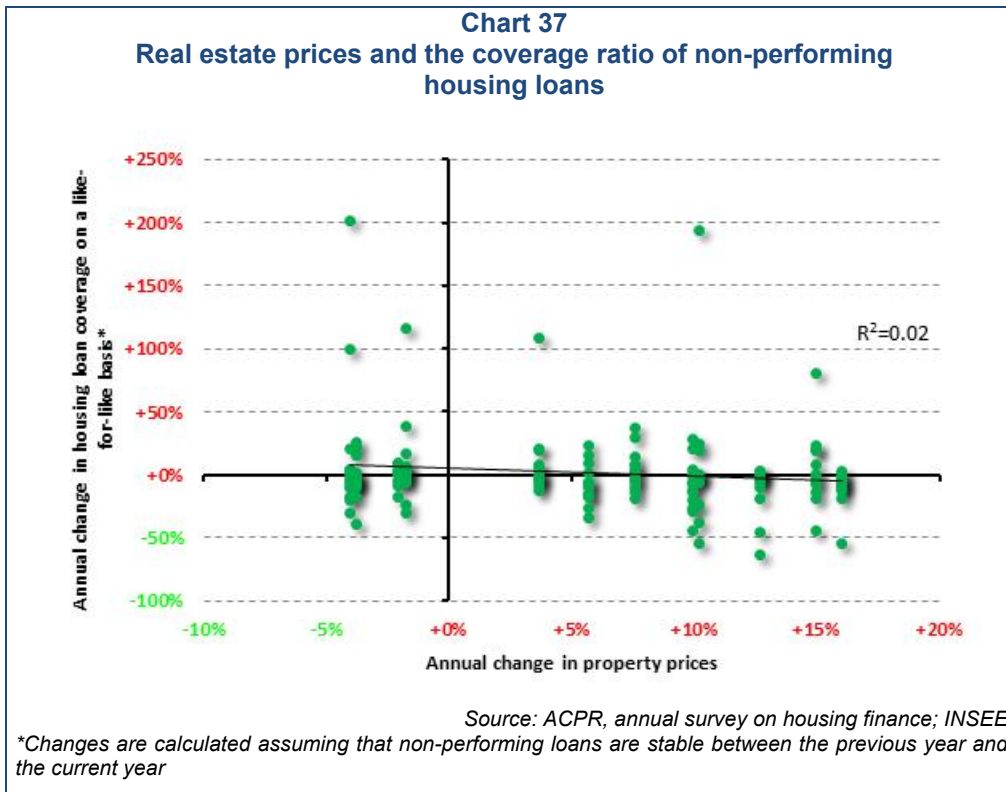
Source: ACPR, annual survey on housing finance and French credit institutions' accounting data

While the coverage ratio of non-performing housing loans is relatively low, it should be remembered that the banks benefit from numerous types of security over their loans (guarantees, mortgages, etc.) and that under the French Civil Code the banks have recourse to all of the income and assets of their borrowers to pursue

repayment of loans¹⁶. Assuming that outstanding non-performing housing loans have the same guarantee structure as total outstanding loans, it is therefore reasonable to believe that banks' residual risk is negligible on average¹⁷.

Furthermore, the average coverage improved somewhat (29.37% versus 27.17%) if, as before, we include the "provisions"¹⁸ recorded by Crédit Logement on 31 December 2013 for the non-performing loans on its balance sheet.

In the long run, the relationship between the coverage ratio and property prices is very slightly negative overall (all things being equal, a rise in property prices leads to a fall in the coverage ratio, and vice versa). However, the correlation between the two variables seems very weak (Chart 37), which may be explained by the significance of guarantees, the value of which is independent of property prices.



Just as for NPL ratios, examining coverage ratios by market segment - which is also based on highly limited data - reveals significant contrasts (Chart 38).

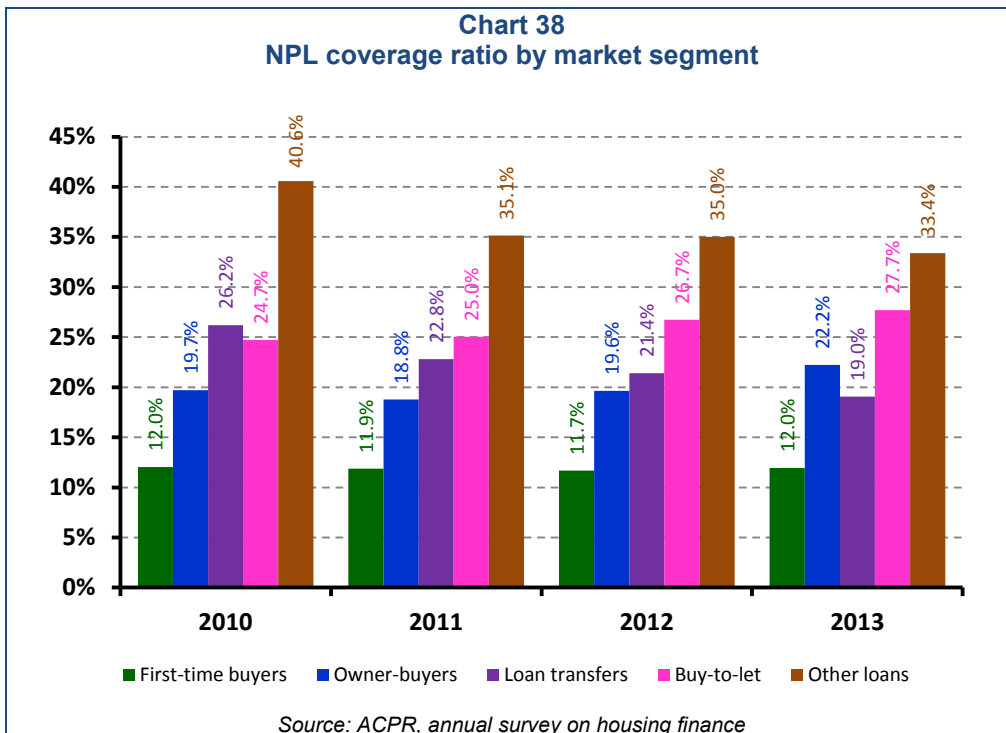
¹⁶ See Articles 2028 and 2029.

¹⁷ Indeed, if the borrower defaults:

- the guarantees issued by credit institutions and insurance companies (which cover 51.2% of outstanding loans) generally enable the lender to recover the full amount of outstanding principal and accrued interest of the loan in default;
- mortgages/lender's liens (which cover 35.5% of outstanding loans) enable recovery of 1.8 times the amount of loans covered on average (see above); even if property prices were to fall by 30%, the loans in question would be fully covered by the value of the financed properties.

Not including other guarantees, the remainder of the outstanding housing loans requiring cover may be considered to be no more than 13.3% (i.e. 100% - 51.2% - 35.5%), which is less than the coverage ratio of housing loans overall.

¹⁸ In practice, Crédit Logement does not record provisions for non-performing housing loans, but rather "ringfences" a portion of the mutual guarantee fund in order to cover expected losses on the relevant loans.

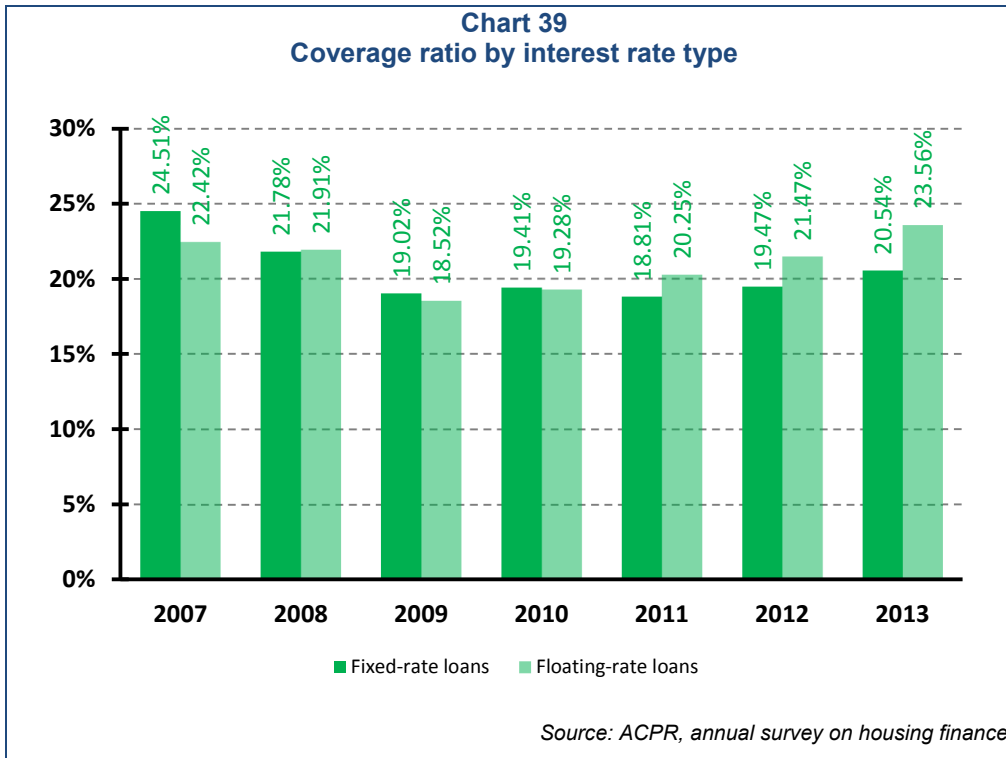


Accordingly, the coverage ratio for first-time buyers remained extremely low compared with other segments. This may be due to the fact that a portion of these outstanding loans are insured by the FGAS (see above). Nevertheless, coverage ratios on this segment range from 3.6% to 28.1% across the nine credit institutions that provided this information at the end of 2013.

In contrast, “other loans”, which include, among other things, second home financing, show a much higher-than-average coverage ratio, although it has been following a slightly downward trend since 2010.

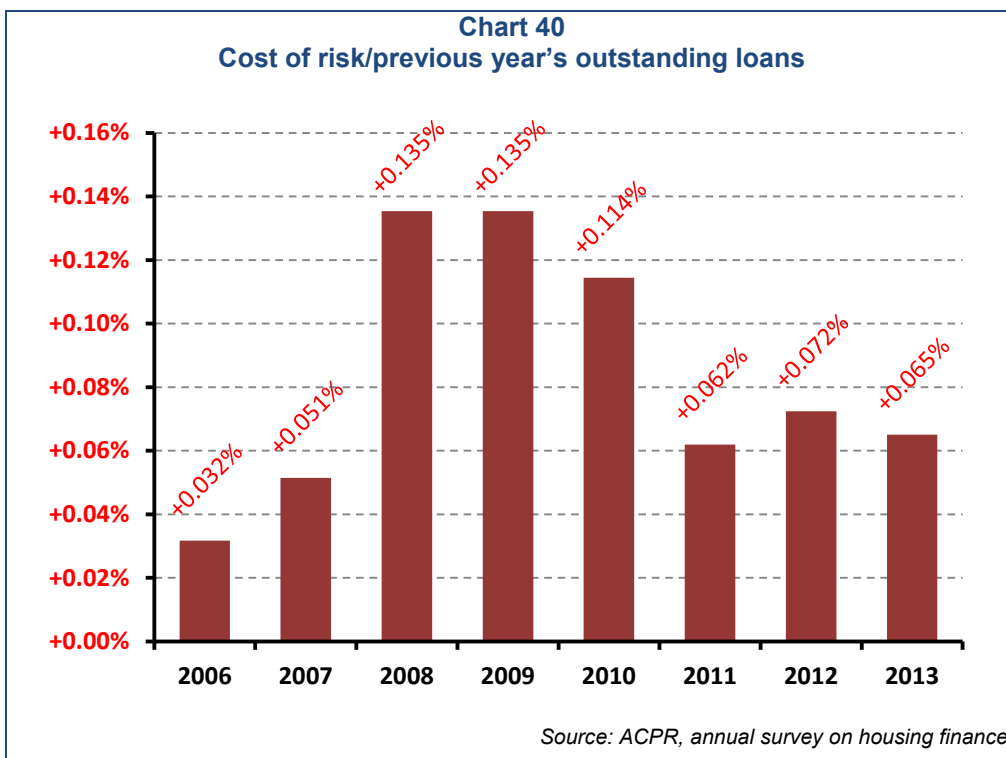
Similarly, the coverage ratio of non-performing loan transfers has been progressively declining since 2010, but is rising in both the buy-to-let and, since 2011, the owner-buyers segments.

Finally, coverage ratios for non-performing housing loans are slightly better for fixed-rate than for floating-rate loans (Chart 39).

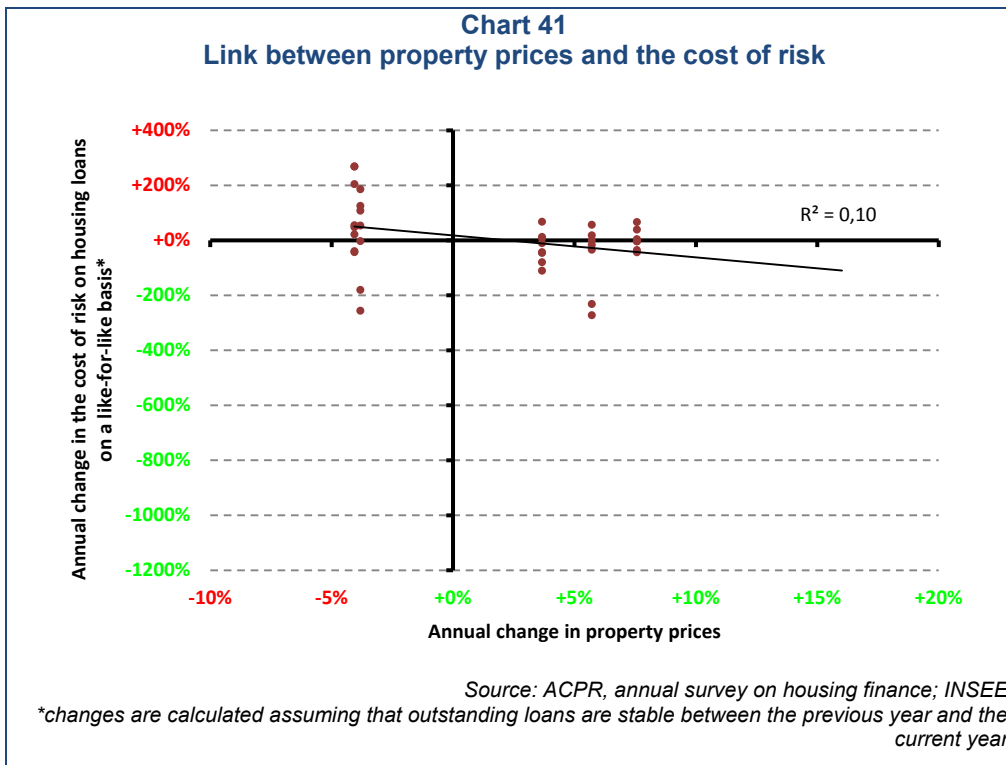


3.1.3. The cost of risk falls slightly in 2013

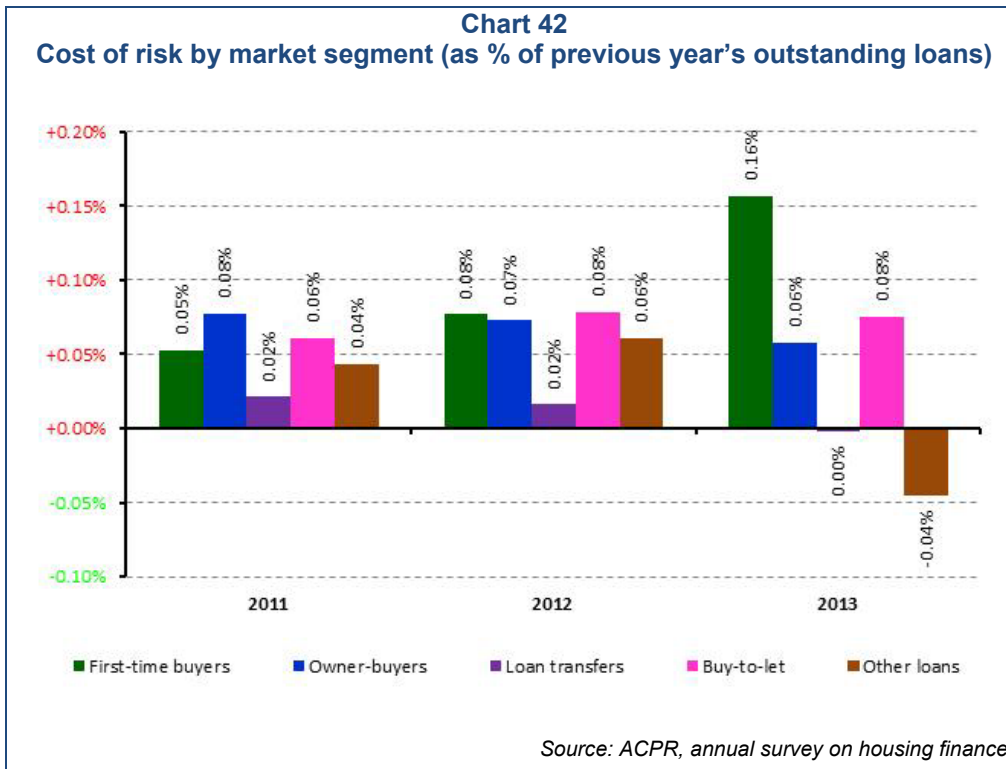
The cost of risk for outstanding housing loans edged down from +0.072% in 2012 to +0.065% in 2013, which is close to the 2011 level, but still higher than the 2006 and 2007 rates (Chart 40).



Just as for the coverage ratio of non-performing loans, there appears to be very little connection over the long term between the cost of risk of housing loans and property prices (Chart 41).



Based on what are again highly limited responses, it appears that the cost of risk of first-time buyers rose sharply in 2013; conversely, in the owner-buyers, loan transfers and other loans segments the cost of risk was down in 2012, even moving into negative territory in the latter two segments in 2013 (Chart 42). For buy-to-let loans, the figure was stable relative to the previous year.



3.2. Risk related to first-time buyers rose in 2013

Table 4 lists the values calculated for each of the previously discussed risk indicators, for each segment¹⁹. The risk indicators may be grouped into two subsets: *ex ante* (first four criteria in the table) and *ex post* (last three criteria).

Table 4
Risk level estimates for each market segment in 2013

2013/12/31	First-time buyers	Owners-buyers	Credit transfers	Buy to let	Other loans	Île de France	Provinces
Average loan amount at origination	0.71	0.86	0.57	0.29	0.14	1.00	0.43
Average LTV at origination	0.57	0.29	1.00	0.86	0.43	0.14	0.71
Average maturity at origination	1.00	0.86	0.29	0.43	0.14	0.57	0.71
Average debt-service ratio at origination	0.71	0.86	0.43	0.29	0.14	1.00	0.57
<u>Average 1</u>	<u>0.75</u>	<u>0.71</u>	<u>0.57</u>	<u>0.46</u>	<u>0.21</u>		
NPL	1.00	0.80	0.20	0.60	0.40		
Coverage ratio	1.00	0.60	0.80	0.40	0.20		
Cost of risk	1.00	0.60	0.40	0.80	0.20		
<u>Average 2</u>	<u>1.00</u>	<u>0.67</u>	<u>0.47</u>	<u>0.60</u>	<u>0.27</u>		
All criteria	0.86	0.69	0.53	0.52	0.24	0.68	0.61
<i>Reminder: 2012 score</i>	<i>0.78</i>	<i>0.70</i>	<i>0.45</i>	<i>0.57</i>	<i>0.35</i>	<i>0.71</i>	<i>0.54</i>
<i>Change</i>	<i>+0.07</i>	<i>-0.01</i>	<i>+0.08</i>	<i>-0.05</i>	<i>-0.11</i>	<i>-0.04</i>	<i>+0.07</i>

Source: ACPR, annual survey of housing finance and monthly monitoring of housing loan production

The main areas of risk have changed somewhat compared to last year: the first time buyers' score is now very high, having risen (+0.07) due mainly to a higher level of default and cost of risk (see above). Similarly, there has been an increase in the level of risk for housing loans in the provinces (+0.07). This reflects a rise in the score for average LTV and initial maturity – although the increase is limited in absolute terms – and for loan transfers, whose score rose +0.08%. In the latter segment, the higher score reflects a decline in the coverage ratio for non-performing loans, although the level of risk is most likely overstated given that the actual LTV should be lower than the banks' reports.

The average level of risk fell in the other segments, including a relatively big drop for "other loans", which was already the least risky segment in 2012.

¹⁹ Methodology: *n* is the number of segments for which data are available for a given risk indicator (for example, "non-performing outstanding housing loans" data are available for five segments); for this indicator, the score $1/n$ is attributed to the segment which shows the lowest risk level and 1 (or n/n) to the segment which shows the highest risk level; the overall score of a segment is set as the arithmetical average of its scores for each risk criterion.

4. Housing loan weightings

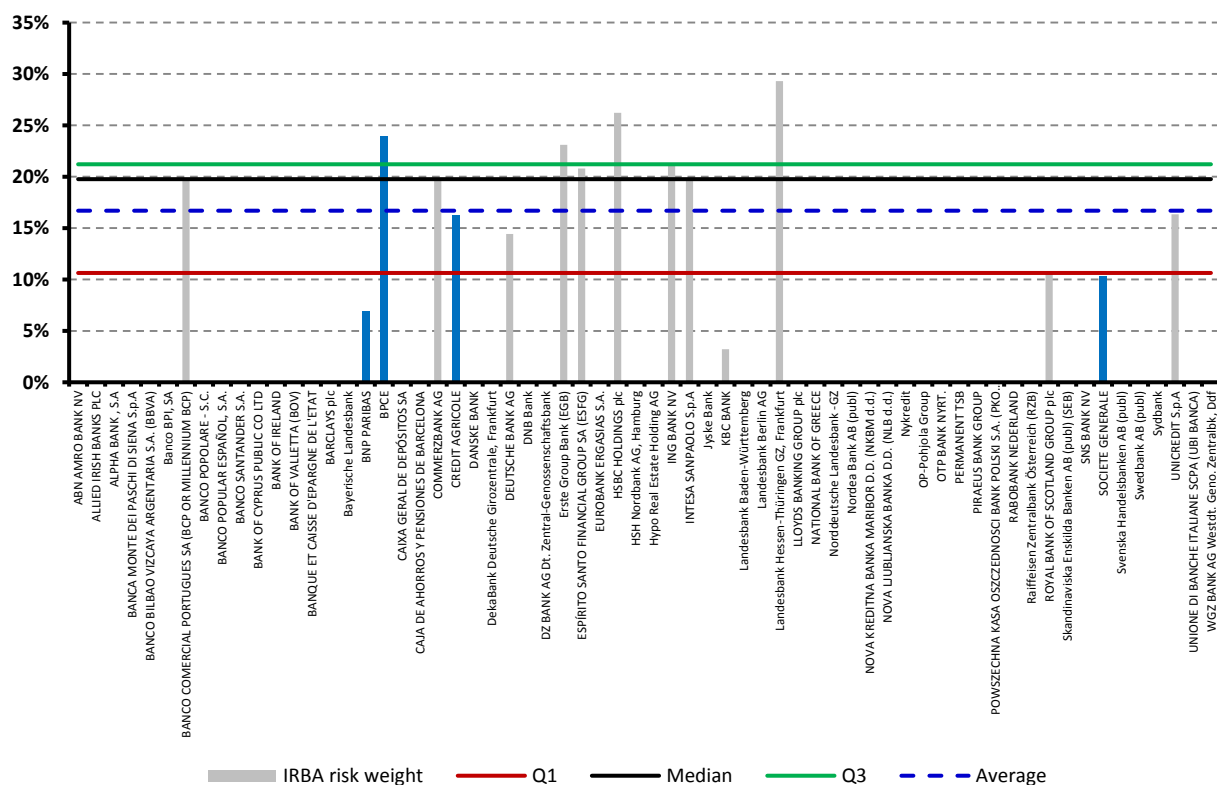
The data published by the European Banking Authority (EBA) as part of the Transparency Exercise²⁰ can be used to compare the risk weightings of housing loans issued by French banks in France and assessed using the Internal Ratings Based Approach (IRBA), with those of their European competitors.

In the first analysis, the weightings of housing loans from French banks under the IRBA are highly diverse: while the BPCE Group's weighting lies above the third quartile, the Crédit Agricole Group is in the middle, and SG and especially BNPP fall below the first quartile (Chart 43). Overall, the average weighting of French banks' housing loans under the IRBA is 16.64% compared with 23.93% for their foreign competitors.

However, it is worth remembering that a portion of the loans are covered by the Crédit Logement guarantee, which has an impact on the capital cost of real estate loans for the banks concerned. Indeed, because the banks are shareholders of Crédit Logement, they are required to deduct the amount of their investment (capital and equity loans) in the bank from their capital once the investment is over 10%. The four French banking groups covered by the Transparency Exercise fall into this category.

Including this cost changes the French banks' position significantly: once their stake in Crédit Logement, weighted at 1250%²¹ has been added in, the average risk weighting of housing loans issued by French banks rises to 22.12%, which is comparable to the average.

Chart 43
Risk weighting of housing loans in France (IRBA)



Source: EBA, Transparency Exercise; ACPR calculations

²⁰ See <http://www.eba.europa.eu/risk-analysis-and-data/eu-wide-transparency-exercise>

²¹ A deduction from capital being equivalent to a 1250% weighting.

Appendix 1 – Historical data from the ACPR’s annual survey on housing finance

Representativeness

1. New loans

(EUR millions)

Home loans production

o/w buy-to-let

o/w loan transfers

o/w bridge loans

Average loan amount (EUR thousands)

(production breakdown by interest rate type)

Uncapped floating rate loans

Floating rate loans with fixed installments

Capped floating rate loans

Fixed rate loans

Others

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	60,570	73,290	94,855	112,206	135,209	154,177	155,412	124,441	107,555	164,248	155,660	109,212	140,552
71%	9.66%	11.19%	13.47%	16.02%	16.01%	14.72%	13.97%	13.92%	17.52%	17.60%	15.37%	15.55%	10.33%
76%							3.53%	3.73%	3.91%	8.19%	9.19%	3.11%	18.15%
75%	3.48%	4.57%	4.58%	6.78%	7.94%	9.75%	11.02%	10.30%	4.08%	3.15%	4.17%	5.79%	4.33%
75%	72	81	94	104	105	113	114	114	104	123	134	136	142
84%	4.3%	6.9%	7.6%	10.7%	7.1%	8.2%	9.0%	3.8%	1.0%	1.2%	0.7%	1.4%	1.5%
84%	0.1%	0.1%	0.2%	0.2%	3.2%	1.8%	0.9%	0.5%	1.0%	0.2%	0.0%	1.1%	0.6%
84%	3.8%	5.5%	8.3%	18.7%	20.8%	13.3%	6.8%	5.3%	10.2%	11.0%	8.2%	4.0%	3.9%
84%	91.6%	87.4%	83.7%	70.1%	68.7%	76.6%	83.2%	89.4%	87.8%	87.4%	90.9%	92.2%	92.8%
84%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	1.0%	0.0%	0.2%	0.2%	1.3%	1.2%

2. Outstanding loans

(EUR millions)

Outstanding home loans excluding NPLs

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	254,517	292,367	326,632	369,372	429,342	493,446	549,920	606,147	633,288	672,876	713,537	737,502	770,753

2.1 Breakdown by market segment

o/w first time buyers

o/w owners-buyers

o/w loan transfers

o/w buy-to-let

o/w other loans

70%										16.44%	20.45%	20.70%	21.90%
70%										57.05%	51.63%	51.94%	49.16%
70%										3.58%	4.32%	4.18%	6.52%
70%										17.92%	18.30%	18.73%	18.02%
70%										5.01%	5.30%	4.44%	4.39%

Uncapped floating rate loans

Floating rate loans with fixed installments

Capped floating rate loans

Fixed rate loans

Others

70%	10.6%	10.0%	9.3%	9.7%	8.7%	10.3%	8.6%	7.3%	6.1%	4.9%	3.7%	4.3%	4.8%
70%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.4%	0.4%
70%	12.3%	11.2%	11.0%	14.0%	18.6%	16.6%	16.9%	15.1%	14.7%	15.1%	14.7%	10.9%	10.4%
70%	76.5%	78.3%	79.2%	75.9%	72.3%	72.8%	74.3%	76.6%	78.5%	79.4%	81.2%	83.5%	83.2%
70%	0.6%	0.5%	0.4%	0.2%	0.2%	0.2%	0.1%	0.9%	0.6%	0.5%	0.4%	0.9%	1.2%

2.3 Breakdown by residual maturity

< 5 years

5-10 years

10-15 years

15-20 years

> 20 years

89%										6.7%	6.5%	6.4%	6.4%
89%										16.7%	16.5%	16.5%	16.5%
89%										23.2%	23.5%	23.8%	24.0%
89%										23.1%	23.9%	24.8%	26.8%
89%										30.2%	29.7%	28.5%	26.4%

Average residual maturity

89%										15.3 y	15.5 y	15.4 y	15.3 y
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2.4 Type of guarantees

Guarantee from a credit institution

Guarantee from an insurance company

Mortgage or equivalent

Other guarantees

Without guarantee

89%										29.7%	30.5%	30.3%	29.5%
89%										19.8%	20.1%	20.6%	21.7%
89%										34.5%	34.6%	35.3%	35.5%
89%										9.7%	9.8%	9.9%	10.7%
89%										6.3%	5.0%	3.9%	2.6%

Representativeness

3. **Risk measurement**

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

LTV

Average LTV at origination	97%	76.7%	77.7%	79.4%	78.7%	79.1%	78.6%	78.0%	75.6%	78.5%	80.4%	82.3%	79.9%	84.1%
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Debt-service ratio

≥ 35%	54%	19.1%	21.2%	22.0%	22.8%	24.2%	24.0%	26.0%	26.4%	23.3%	24.5%	26.4%	25.2%	23.1%
Average debt-service ratio	54%	27.9%	28.3%	28.6%	28.3%	29.2%	29.3%	29.5%	29.9%	29.9%	29.9%	30.8%	30.8%	30.0%

Average loan maturity

Initial primary loan maturity	43%	15.19 y	15.08 y	15.85 y	17.59 y	18.34 y	19.37 y	20.10 y	20.27 y	19.91 y	19.60 y	19.76 y	19.80 y	19.14 y
Actual bridge loan maturity	62%					0.28 y	0.31 y	0.61 y	0.75 y	0.71 y	1.39 y	1.38 y	1.39 y	1.30 y

3.2 **NPLs and coverage**

NPL ratio	100%	1.38%	1.24%	1.13%	1.05%	0.96%	0.92%	0.89%	0.92%	1.13%	1.22%	1.25%	1.33%	1.45%
<i>a/w on fixed rate loans</i>	99%							0.75%	0.77%	0.93%	1.04%	1.11%	1.13%	1.23%
<i>a/w on floating rate loans</i>	99%							1.25%	1.67%	2.52%	2.77%	2.90%	3.38%	3.34%
Coverage ratio	100%	42.22%	38.23%	36.56%	32.79%	33.99%	30.01%	27.92%	27.22%	25.91%	26.42%	27.09%	27.03%	27.17%
<i>a/w on fixed rate loans</i>	64%							24.51%	21.78%	19.02%	19.41%	18.81%	19.47%	20.54%
<i>a/w on floating rate loans</i>	64%							22.42%	21.91%	18.52%	19.28%	20.25%	21.47%	23.56%

3.3 **Cost of risk**

Cost of risk as a % of Y-1 outstanding loans	65%							+0.032%	+0.051%	+0.135%	+0.135%	+0.114%	+0.062%	+0.072%	+0.065%
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