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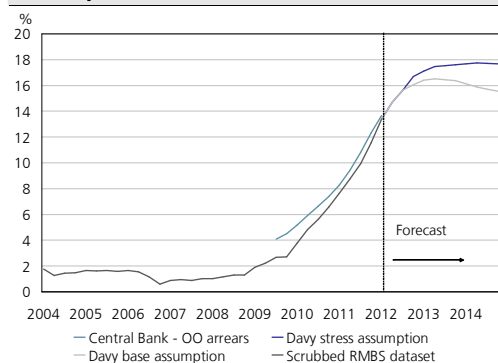
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## Irish mortgage arrears analysis

# Banking recovery requires resolution of mortgage arrears challenge

**Figure 1: Forecast owner occupier arrears development**



Source: Davy; Central Bank; Moody's

**Table 1: Household debt as % of nominal GDP, Q4 2011\***

Slovakia	28.3	France	63.4
Poland	32.6	Finland	64.1
Lithuania	33.0	Greece	68.3
Czech Republic	33.3	Euro area 17	69.4
Slovenia	35.2	Malta	79.4
Hungary	35.9	Sweden	82.9
Latvia	38.5	Spain	83.8
Estonia	46.6	United States	86.9
Luxembourg	50.4	Portugal	100.6
		United Kingdom	101.1
Belgium	52.9	<b>Ireland*</b>	<b>116.6</b>
Austria	54.5	Netherlands	129.2
Italy	57.3	Denmark	147.7
Germany	59.1		

\* The figures for Ireland are for Q1 2012

Source: European Central Bank; Thomson Reuters; Datastream

### Continued rise in mortgage arrears a concern

- We expect our RMBS measure of owner occupier arrears to rise from 13.4% by value in Q1 2012 to an eventual peak of 16.5%.
- This forecast is based on a statistical regression model of arrears, conditioned on our economic projections. A slowly stabilising labour market should reduce the pace of mortgage arrears formation.
- Arrears on buy-to-let (BTL) loans are a concern, running at over 2x owner occupier rates and driven up by mortgage terms switching to interest and principal payments.

### Restructurings to move beyond short-term measures

- Restructured mortgages have had limited success in restoring loan performance, with interest only and principal payment modifications prevalent.
- A remarkable feature of the Irish housing market bust is the lack of principal write-downs and repossessions.
- The new PIA regime may encourage repossession of BTL property loans, but there is a risk that the new measures merely delay loss recognition by banks.
- If banks attempt to liquidate a large number of their delinquent BTL loans, property prices could fall.

### Mortgage losses to exceed PCAR adverse case

- We now expect covered banks' mortgage book loan losses to exceed the €9bn in last year's PCAR exercise.
- But eventual losses of €10-11.5bn could be absorbed within the remaining €8.5bn of unused capital from PLAR deleveraging requirements.
- Tactical delinquency, increased bankruptcy, further property price falls and macroeconomic developments pose risks to this view.
- Banks need to show that they can absorb loan losses within Tier 1 capital to generate market confidence and return to profitability.

### Please refer to important disclosures at the end of this report.

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## 1. Introduction

A process of deleveraging by the Irish household sector is well underway. The level of household debt has fallen by 12% since peak, a sharper pace of decline than in other countries, evident in double-digit household savings rates and weak consumer spending. The stock of banks' mortgage lending has fallen by 13% and unsecured personal lending by 35%. However, despite these adjustments, the level of Irish household debt, at 117% of GDP, remains high by international standards. So a further correction in Irish households' balance sheet position seems likely.

A key concern for Irish banks is that within the high stock of Irish household debt, of which 87% comprises mortgage debt, deteriorating performance implies large loan losses. The number of owner occupiers in 90+ days arrears rose to 10.2% or 78,000 in Q1 2012, up sharply from 4.1% or 32,000 in Q1 2010. Arrears rates for BTL mortgage loans (which account for close to 25% of total mortgage lending) are running at much higher rates, over two times the owner occupier rate, based on banks' non-performing loans.

Where arrears rates may peak, how delinquent loans are dealt with and the extent of losses on Irish banks' mortgage loans is the focus of this research note. Short-term indicators of the likely path of 90-day arrears rates can be derived from Residential Mortgage Backed Securities (RMBS). This data suggest that early stage arrears formation has now levelled off, albeit at high rates. However, existing early stage arrears still suggest the headline 90+ day rate will continue to rise in 2012. The RMBS data also highlight a concerning trend where the rate at which arrears convert into longer-term arrears appears to be rising.

In the US, the advent of 'jingle mail' has often been cited as a key factor driving arrears, with borrowers more willing to default once in negative equity because banks' recourse was limited to the property that mortgage loans were secured against. However, more stringent bankruptcy laws mean similar behaviour by Irish borrowers has not been evident. We now believe over 50% of Irish mortgages are now in negative equity compared with just 10.2% of owner occupier loans in arrears in Q1 2012. So negative equity has not been the driver of mortgage arrears in Ireland.

Cuts in nominal wages and higher taxes, together pushing down on disposable incomes, will have been a factor pushing some marginal borrowers into arrears. However, the rise in the savings ratio demonstrates the ability of Irish households to re-orientate spending. In addition, Irish households have benefitted from cuts in ECB interest rates, which have pushed down on mortgage interest payments. So for those in employment, cuts in disposable income do not appear to have a significant impact on the ability to service mortgage debt.

Our view is that the key factor driving mortgage arrears has been labour market developments. Specifically, falling employment (and rising long-term unemployment) has reduced households' ability to pay. However, the sharpest declines in Irish employment now appear to have passed.

- But deteriorating loan performance within the existing stock of debt is a key problem for Irish banks

- Employment and labour market conditions have been the key factors driving up mortgage arrears rates in Ireland

- Our statistical forecast models indicate the rate of new arrears formation will stabilise, expected to peak at 16.5% by value in 2013, up from 13.4% in Q1 2012

Employment fell by 8.1% in 2009, 4.2% in 2010 and 2.1% in 2011. We expect employment to decline in 2012 before rising marginally in 2013. So slowly stabilising labour market conditions should lead to less severe increases in household mortgage arrears.

We have built a regression model to estimate the relationship between labour market variables and the owner occupier arrears rate. We can explain the bulk of the rise in the arrears rate (including the sharp rises through 2011) through developments in employment and long-term unemployment. By linking our statistical relationships with our forecast for the labour market, we can derive a projection for the arrears rate. Our models suggest that the 90-day owner occupier arrears rate will rise from 13.4% by value in Q1 2012 to a peak 16.5% in 2013. This projection captures our view that the labour market will slowly stabilise, reducing early stage arrears formation. That said, a clear risk to this view is that any rise in tactical delinquency as the new personal solvency regime is implemented will push on arrears.

However, existing non-performing loans remain a large unresolved problem on Irish banks' balance sheets, set against large provisions and high Tier 1 capital ratios in expectation of future losses. Thus far, measures to improve loan performance have had limited success. Close to half of restructured owner occupier mortgages remain in 90+ day arrears. Restructurings have been heavily biased towards moving payments to interest only, term extension or reduced principal payments. The most effective solutions, debt-write downs and repossessions, have been negligible. Indeed, the lack of repossessions in Ireland is an equally remarkable feature of the housing market crash as the collapse in property prices itself.

- Measures to address non-performing loans by restructuring mortgages have had limited success, with repossessions extraordinarily low in Ireland

However, Irish banks are now piloting 'advanced forbearance options' in tandem with the new personal insolvency regime. At first glance, the rollout of new products such as split mortgages, trade downs, voluntary sale for loss and mortgages to rent falls well short of principal forbearance. So the likely success in improving loan performance may be limited. That said, a constructive ambiguity may be necessary in any move by banks toward principal forbearance to ensure a snowball effect does not emerge with respect to write-downs for borrowers who cannot pay and will not pay. It is essential for banks to show forbearance and consider solutions to non-performing loans on a case-by-case basis.

The new Personal Insolvency Arrangement (PIA) legislation falls well short of the expectations of 'debt forgiveness' that had circulated in 2011. Secured creditors retain a veto, and there is no right of appeal on the part of disgruntled debtors. That said, negotiations within the new PIA process will take place against the backdrop of the reformed bankruptcy regime with discharge reduced from 12 years to three years.

- There is a risk that new advanced forbearance options and the new PIA regime merely act to delay ultimate loss recognition

The key issue remains whether credible long-term solutions to non-performing loans will be delivered or if both the PIA and banks' forbearance measures merely delay and tie up debtors in unsustainable loans. There is a risk that attempts to protect capital and delay loss recognition could incentivise debtors to pursue bankruptcy as a more credible, visible alternative to the PIA or advanced forbearance solutions.

Nonetheless, irrespective of forbearance measures, an increased level of repossessions seems inevitable. The PIA process protects the family home but makes it more likely that BTL loans will need to be liquidated. At end-2011, 25% of the covered banks' BTL loans were in 90+ day arrears.

- The PIA regime may facilitate a higher level of repossessions of delinquent BTL property loans

As with owner occupiers, we believe that macro-economic factors will push up on BTL arrears rates into 2013. However, we are cognisant that an additional factor pushing up on BTL arrears is the switch of mortgage payments from interest only to cover both interest and principal.

- Delinquent BTL loans will rise further as mortgage payments convert from interest only into principal and interest

BTL mortgage contracts originated in the peak years of the property bubble included terms to switch payments from interest only to both interest and principal after a period of around five years. This switch in payments appears to have pushed up on Irish banks' non-performing loans as BTL borrowers have reached the trigger point. As principal has been added to monthly payments, BTL borrowers have been either unable or unwilling to increase their mortgage servicing. The substantial amount of BTL lending that originated in H2 2007 and in 2008 has not yet hit the trigger to increase payments to both interest and principal. We estimate that 29% of Bank of Ireland's BTL balances and 35% of Allied Irish Banks' outstanding BTL mortgages have yet to switch to principal and interest repayments.

- But it will not be possible for banks to liquidate their entire delinquent Buy-To-Let portfolio through repossessions given the scale of the problem, implying other solutions such as rent receivers

We expect that by value the proportion of BTL loans in arrears will rise to 38.4%. Based on a 60% fall in property prices, peak-to-trough, delinquent loans will have a current market value of €6-7bn or close to 40,000 BTL properties will be in arrears. Although BTL repossessions are likely to rise within the PIA process, it will not be possible for the banks to liquidate this entire portfolio. In comparison, Allied Irish Banks has committed to new mortgage lending of €1bn, and Bank of Ireland has a target of €1.5bn in 2012. These levels are not high enough to allow the housing market to absorb large-scale sales of repossessed BTL properties without further sharp falls in property prices.

However, an increased number of repossessions is desirable to help unlock and add transparency to the illiquid housing market even if it entails further falls in house prices. The starting point is that repossessions have been negligible despite high arrears rates, both for owner occupiers and BTL. Recent legal developments have facilitated the appointment of rent receivers to delinquent property loans. Despite the Dunne ruling, it has been clarified that banks have a contractual right to appoint a rent receiver if such a condition exists in the mortgage document. It is also the right of the receiver to sell the property, but we have seen little incidence of such sales so far. Again, such conditions were more prevalent in BTL mortgage lending.

- We now expect mortgage book losses at the covered Irish banks to exceed the €9bn PCAR adverse scenario

In this note, we re-estimate our expectations for banks' mortgage book loan losses, based on our statistical models of where arrears rates will peak. These estimates indicate that losses will be above the €9bn adverse case scenario in last year's PCAR exercise, perhaps €10-11.5bn in various scenarios. That said, these additional losses are manageable given the excess capital left over from the banks' deleveraging requirements, with just €1bn used of the €9.5bn injected to meet discounts as banks sold

- Irish banks need to take credible steps to reduce non-performing loans, even if this implies falls in their Tier 1 capital ratios

non-core assets. However, risks to our view are a greater incidence of tactical arrears, bankruptcy or BTL liquidations that drive down property prices.

The current stalemate of negligible repossessions and debt write-downs set against banks' high core tier 1 capital ratios, arrears rates and non-performing loans cannot be expected to persist indefinitely. Investors still question banks' ultimate mortgage book losses given rising arrears rates, uncertain collateral values and an illiquid housing market. This uncertainty holds back market confidence and Irish banks' access to wholesale market funding at sufficiently low rates to help profitability and facilitate a recovery in lending growth to the real economy.

A credible roll-out of advanced forbearance measures and PIA restructurings is desirable to show that banks can work through mortgage arrears difficulties. Impractical forbearance options may delay loss recognition and protect capital ratios in the short term. But banks need to demonstrate they can deal with unsustainable mortgages through long-term solutions. Visible credible solutions to unsustainable loans, which will result in lower capital ratios, are needed in our view.

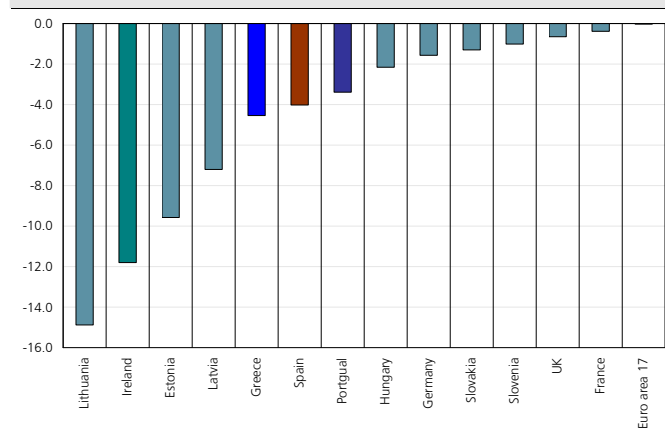
- The ratio of Irish household debt to income remains exceptionally high by international standards

## 2. Ireland's household debt problem

### Households are deleveraging, but debts remain exceptionally high

The ratio of Irish household debt to disposable income peaked at 224% in 2009 and had fallen to 213% in Q1 2012. The table below illustrates that household debt remains exceptionally high by international standards at 116.6% of nominal GDP, down from a peak of 132% at the end of 2009.

**Figure 2: Percentage change from peak in household debt levels to Q4 2011**



Source: European Central Bank

**Table 2: Household debt as % of nominal GDP, Q4 2011**

Slovakia	28.3	France	63.4
Poland	32.6	Finland	64.1
Lithuania	33.0	Greece	68.3
Czech Republic	33.3	Euro area 17	69.4
Slovenia	35.2	Malta	79.4
Hungary	35.9	Sweden	82.9
Latvia	38.5	Spain	83.8
Estonia	46.6	United States	86.9
Luxembourg	50.4	Portugal	100.6
Belgium	52.9	United Kingdom	101.1
Austria	54.5	Ireland	116.6
Italy	57.3	Netherlands	129.2
Germany	59.1	Denmark	147.7

Source: European Central Bank; Thomson Reuters; Datastream. The figures for Ireland are for Q1 2012.

- But the 12% decline from peak in nominal household debt is more striking and has outpaced other economies

- Short-term borrowing has almost halved from its peak in Q4 2007

- Personal credit card issuance and outstanding credit card debt have fallen back too

However, the decline in the ratio of Irish household debt to income has been limited by falling nominal GDP, declining wages and rising tax rates. Expressed in purely nominal terms, the peak-to-trough (PTT) fall in Irish household debt of 12% is more striking and more pronounced than in other European economies.

Table 3 illustrates that Irish households' short-term borrowing has fallen from peak by 46%<sup>1</sup>. Long-term borrowing has declined by 9.5% from a peak of €190.2bn. So the decline in Irish household debt has reflected a sharper adjustment in short-term borrowing (such as consumer credit being paid down at a sharper pace than mortgage debt).

Personal credit cards in issue in Ireland have declined from 2.22m in January 2009 to 1.94m in June. Outstanding credit card personal debt has fallen from €3bn in December 2009 to €2.5bn in June 2012. Consumer credit has halved from peak levels, €15bn in June 2012, down from €29bn in January 2009.

Table 3 matches household debt to the stocks of credit from financial institutions. Lending was €148.4bn in Q1 2012, comprising €129.6bn of mortgage lending (including securitisations) and €18.8bn of other personal lending. Approximately €30bn is unaccounted for, comprising

<sup>1</sup> Borrowing with a maturity up to one year.

lending by Bank of Scotland Ireland, informal lending, unpaid tax liabilities, store credit and other residual items.

**Table 3: Irish household debt and borrowing from Irish financial institutions (€bn)**

	Households Financial Liabilities					Household Income	Irish Credit Institutions Lending to Households			
	Total financial liabilities	Loans	Short-term loans	Long-term loans	Accounts payable	Disposable income	Total lending	Mortgage lending	of which securitised	Other personal lending
2003	81.5	78.2	4.9	73.2	3.3	67.6	67.0	54.2	4.5	12.8
2004	103.2	99.4	6.1	93.3	3.9	73.3	85.7	70.0	4.2	15.7
2005	131.7	126.4	8.7	117.7	5.3	80.7	109.5	89.6	3.8	19.8
2006	163.3	157.5	10.1	147.4	5.8	87.1	135.7	114.5	8.2	21.1
2007	191.1	184.9	13.9	170.9	6.2	94.8	157.9	134.5	15.9	23.3
2008	210.3	200.8	13.1	187.7	9.4	100.4	170.7	146.5	25.3	24.1
2009	211.1	201.1	11.7	189.4	10.1	93.5	178.6	151.1	38.9	27.5
2010	200.8	191.2	9.5	181.8	9.6	89.2	164.7	142.5	36.4	22.2
2011	194.4	185.7	8.2	177.5	8.6	87.6	152.8	132.4	38.6	20.4
Q1 2011	196.5	188.0	8.8	179.1	8.5	84.9	155.3	134.0	35.1	21.3
Q2 2011	195.6	186.9	8.4	178.5	8.7	90.9	153.8	133.1	34.7	20.7
Q3 2011	193.8	185.4	8.0	177.4	8.4	88.9	152.1	132.2	34.2	19.9
Q4 2011	191.5	182.6	7.7	174.9	8.9	85.8	150.1	130.6	50.2	19.6
Q1 2012	188.5	180.4	7.5	172.9	8.1	87.9	148.4	129.6	49.7	18.8

Source: Central Bank of Ireland; Central Statistics Office

- Irish banks have seen the stock of mortgage lending fall at a slower pace than personal lending
- There has been a sharper reduction in the stock of BTL lending over that of owner occupiers
- Mortgage debt is predominantly variable rate, with trackers linked to the ECB rate accounting for 53% of the total

Total lending has fallen by €29.7bn or by 16.7% from peak; mortgage lending (including securitisations) by €19.6bn or 13.1%; and other personal lending by €10.1bn or 34.9%. Monthly data indicate that mortgage lending had fallen further to €129.2bn in April 2012.

Mortgage lending to owner occupiers has fallen at a slower pace than to the BTL sector. Table 3 illustrates that, excluding securitised loans, mortgage lending to the BTL sector rose from €7.9bn in 2003 to a peak of €32.6bn in 2008, a 313% rise. Since the peak, the stock of bank lending to the BTL sector has fallen to €19.4bn or by 41%. Mortgage lending to owner occupiers rose by 113% between 2003 and 2008 and has fallen back by 20% since the peak<sup>2</sup>.

Unfortunately, assessing the size of the Irish mortgage market is complicated by inconsistencies in the official data. The Central Bank's quarterly arrears data show that owner-occupier mortgages were €113bn at end-2011, higher than the €99.7bn indicated in Table 4. We understand the discrepancy is accounted for by Lloyds legacy book (in run-off) and remaining sub-prime exposure.

Of the €129.6bn of mortgage debt, €69bn (or 53%) comprises trackers explicitly tied to the ECB rate, €43.5bn (34%) consists of standard variable rates and €14.5bn (11%) on fixed rates.

<sup>2</sup> However, assessing reductions in the stock of household debt accounted for by owner occupiers and the BTL sector is complicated by the lack of data for securitised loans prior to 2011. We therefore cannot draw firm conclusions.



**Table 4: Mortgage lending (€bn)**

	Total mortgage lending	Principal dwellings	Buy-to-let	of which securitised	Bank lending (ex securitisation)	Principal dwellings	Buy-to-let
2003	54.2			4.5	49.7	41.0	7.9
2004	70.0			4.2	65.8	53.0	12.0
2005	89.6			3.8	85.8	67.5	17.3
2006	114.5			8.2	106.3	79.9	25.1
2007	134.5			15.9	118.6	86.3	30.9
2008	146.5			25.3	121.3	87.2	32.6
2009	151.1			38.9	112.2	80.5	30.5
2010	142.5			36.4	106.1	77.5	27.4
2011	132.4	101.9	29.3	38.6	93.9	69.5	23.2
Q4 2010	135.8	103.0	31.5	36.2	99.6	73.2	25.2
Q1 2011	134.0	103.1	29.7	35.1	98.9	73.1	24.6
Q2 2011	133.1	102.3	29.6	34.7	98.3	72.7	24.5
Q3 2011	132.2	101.7	29.3	34.2	98.0	72.6	24.2
Q4 2011	130.6	100.6	28.8	50.2	80.4	59.7	19.6
Q1 2012	129.6	99.7	28.6	49.7	79.9	59.4	19.4

Source: Central Bank of Ireland

## Over half of mortgages are in negative equity, but interest servicing costs are low

A Central Bank Report of individual loan-level data indicated that 31% of 475,000 mortgages from the three covered banks were in negative equity at end-2010. These mortgages accounted for 47% of the outstanding balances. However, given a further 21.6% fall in residential property prices through 2011 and 2012, the Central Bank analysis suggests that 46% of mortgages (by number) are now negative equity.

**Table 5: Distribution of housing equity, end-2010, by number**

Negative equity (%)		Positive equity (%)	
>100%	0.4%	1%-10%	8.1%
91%-100%	0.1%	11%-20%	7.4%
81%-90%	0.1%	21%-30%	7.1%
71%-80%	0.1%	31%-40%	7.2%
61%-70%	0.3%	41%-50%	6.9%
51%-60%	1.5%	51%-60%	6.9%
41%-50%	3.3%	61%-70%	7.1%
31%-40%	4.8%	71%-80%	7.1%
21%-30%	5.7%	81%-90%	6.9%
11%-20%	7.0%	91%-100%	4.5%
0.1%-10%	7.6%		
<b>Total</b>	<b>30.9%</b>		<b>69.1%</b>

Source: Central Bank of Ireland

However, we believe that the official CSO index understates the true falls in house prices. This problem may have been particularly acute in 2011 because of the growing importance of cash transactions. So the proportion of mortgages in negative equity is probably higher than 50%. The end-2011 data from the three covered banks provide greater detail on the outstanding balance of loans now in negative equity. In

aggregate, 54% of the value of loans by outstanding balance were in negative equity at that stage.

**Table 6: Distribution of housing equity, end-2011, by value**

<i>Loan to value ratio</i>	<i>Permanent TSB</i>	<i>Bank of Ireland</i>	<i>Allied Irish Banks</i>	<i>Total</i>
Less than 50%	10%	12%	12%	11%
50%-70%	10%	11%	11%	11%
71% to 90%	19%	14%	14%	15%
91% to 100%	12%	8%	8%	9%
Loans with equity	51%	45%	45%	46%
101% to 120%	17%	18%	18%	18%
121% to 150%	16%	22%	21%	20%
Greater than 150%	16%	15%	16%	16%
Negative equity	49%	55%	55%	54%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<b>H1 2012 LTV</b>	<b>Bank of Ireland</b>
Less than 100%	41%
Greater than 100%	59%

Source: Company reports; Davy

However, the worst performing mortgage books were those of foreign lenders that came to the market during the peak years. In aggregate, the figures in the table therefore understate the true extent of negative equity in the Irish mortgage market. The Central Bank report found that BTL mortgages were more likely to be in negative equity given their sharp rise towards the peak-years. BTL mortgages accounted for 16% of outstanding mortgages by number but 23% of those in negative equity.

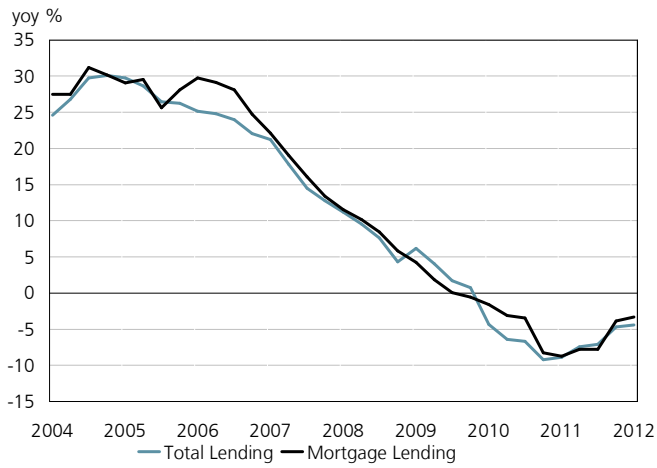
In Ireland, the average interest rate on the stock of mortgage lending is 3%, lower than in the UK (3.3% on household secured loans) and euro area (3.8%). The lower rate in Ireland reflects the prevalence of tracker mortgages explicitly linked to the ECB policy rate. Irish households' interest payments peaked at €8.1bn in 2008 but had halved to just €4.2bn in 2010, reflecting cuts in the official ECB rate.

**Table 7: Structure of mortgage lending by product**

	<i>Tracker</i>	<i>Standard variable rate</i>	<i>1-year fixed rate</i>	<i>Fixed rate &gt;1 year</i>	<i>Total</i>
Product (€bn)	69.0	43.5	2.5	14.5	129.6
% of total	53.3%	33.6%	1.9%	11.2%	100.0%

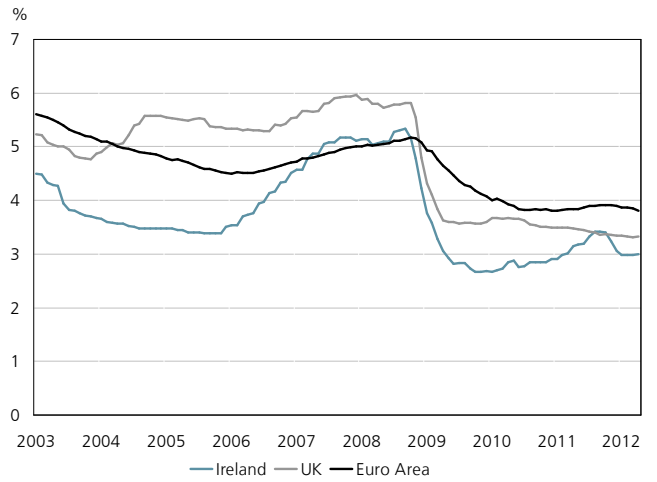
Source: Central Bank of Ireland

**Figure 3: The growth of Irish bank lending**



Source: Central Bank of Ireland

**Figure 4: Average interest rate on stock of mortgage lending**



Source: Central Bank of Ireland; Bank of England; European Central Bank. Data for UK refer to effective interest rate on stock of lending to households secured on dwellings

### 3. The growing problem of mortgage arrears

#### Troubled mortgages reached 15.2% of owner occupier balances in Q1

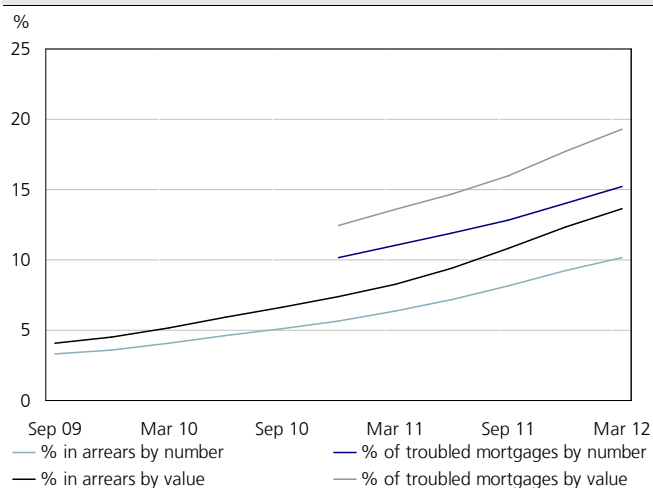
The Central Bank has published arrears data covering €113bn of owner occupier mortgage lending since Q3 2009<sup>3</sup>. However, we do not possess similar detail on BTL lending arrears.

**Table 8: Irish mortgages in arrears**

000's	Q3 2009	Q1 2010	Q1 2011	Q1 2012
Total mortgages	795	791	782	764
In arrears > 90 days	26	32	50	78
Restructured (not in arrears)			37	39
Total troubled mortgages			86	116
<b>% by number</b>				
In arrears > 90 days	3.3	4.1	6.3	10.2
Restructured (not in arrears)			4.7	5.1
Total troubled mortgages			11.0	15.2
<b>€bn</b>				
Total mortgages	118.6	118.1	116.0	112.7
In arrears > 90 days	4.8	6.1	9.6	15.4
Restructured (not in arrears)			6.2	6.3
Total troubled mortgages			15.8	21.7
<b>% by value</b>				
In arrears > 90 days	4.1	5.2	8.3	13.7
Restructured (not in arrears)			5.3	5.6
Total troubled mortgages			13.6	19.3

Source: Central Bank of Ireland

**Figure 5: Irish mortgage arrears and troubled mortgages**



Source: Central Bank of Ireland

- **Arrears rates for BTL borrowers are twice the rate of owner occupiers**

Troubled owner occupier mortgages, incorporating those in arrears and restructured, accounted for 15.2% of the total 764,138 owner occupier mortgages in Q1 2012, up from 11.0% in Q1 2011. In value terms, this means that 19.3% of owner occupier mortgages, with a balance of €21.7bn, are now in arrears. It is clear from the above chart that arrears rose at a faster pace in 2011 than in 2010.

Assessing the extent of arrears in the BTL sector (accounting for 25% of total mortgage lending) is more difficult due to the lack of official data. However, aggregating the books of the main lenders shows that non-performing loans appear to be roughly twice as high for BTL borrowers compared with owner occupier arrears.

**Table 9: Aggregate Irish mortgage book, arrears, NPLs as % of book**

	End-2010	End-2011	BKIR June 2012*	ALBK June 2012*
Owner-occupier	5.3%	10.8%	9.0%	12.9%
Buy-to-let	10.2%	25.1%	21.0%	37.1%
Total	6.6%	14.30	12.0%	18.5%

Source: Company reports for ALKB/EBS, BKIR, PTSB \* interim updates

<sup>3</sup> The €113bn is above the €99.7bn indicated in the table, mainly reflecting the absence of Lloyds in the data and other statistical coverage differences.

## Covered banks account for two-thirds/€94.9bn of the mortgage market

The three covered Irish banks accounted for €94.9bn/two-thirds of mortgage lending at end-2011. Ulster Bank had the next greatest exposure. In total, the Irish mortgage market is close to €146bn, a little above the €130bn indicated by the Central Bank due to the exclusion of Lloyds and remaining sub-prime lenders.<sup>4</sup>

**Table 10: Irish mortgage market by bank**

<i>End-2011</i>	<i>Owner occupier</i>	<i>BTL</i>	<i>Total Book</i>
ALBK/EBS	32152	9515	41,667
BKIR	20863	6991	27,854
PTSB	18740	6679	25,419
Aggregate for Irish covered banks			94,940
IBRC			1,873
Ulster Bank			22,089
KBC			12,800
Lloyds			8,337
Danske			3,200
Rabobank			3,200
<b>Market (ex sub-prime)</b>			<b>146,439</b>

Source: Company accounts; Davy calculations

- Non-performing loans at the three covered banks have risen but less sharply than the entire market

The table below illustrates that NPLs for residential mortgages was 14.3% at end-2011, a sharp increase on the 6.6% reported at end-2010. For owner occupiers, the 10.8% NPL figure compares with the 12.3% reported by the Central Bank for the entire market at end-2011. So NPLs for owner-occupiers are lower at the three covered banks than in the market as a whole. The covered banks held €5.1bn in provisions at end-2011, up from €1.6bn at end-2010, comprising 37.1% of NPLs.

<sup>4</sup> These include Start Mortgages, which has a book of circa €1bn, and GE Capital, whose €600m Irish sub prime book is to be acquired by Australian non-bank lender Pepper. For Ulster Bank, we assume 90% of its book is in the Republic of Ireland.

**Table 11: Non-performing loans and provisions**

End-2011	BKIR			PTSB			ALBK			Total		
	O/O	BTL	Total	O/O	BTL	Total	O/O	BTL	Total	O/O	BTL	Total
Mortgage balances	20.7	7	27.9	18.7	6.7	25.4	32.2	9.5	41.7	71.8	23.2	94.9
Impairments	0.6	0.8	1.3	1.7	1.4	3.1	3.3	2.8	6	5.6	4.9	10.5
Non-performing loans	1.5	1.2	2.7	2.7	1.7	4.4	3.5	3	6.5	7.7	5.8	13.5
<b>NPL (%)</b>	<b>7.4%</b>	<b>16.8%</b>	<b>9.7%</b>	<b>14.5%</b>	<b>25.0%</b>	<b>17.2%</b>	<b>10.8%</b>	<b>31.3%</b>	<b>15.5%</b>	<b>10.8%</b>	<b>25.1%</b>	<b>14.3%</b>
Impairment provisions	489	537	1026	855	774	1629	1098	1361	2459	2442	2672	5114
Provisions % loans	2.3%	7.7%	3.7%	4.6%	11.6%	6.4%	3.4%	14.3%	5.9%	3.4%	11.5%	5.4%
Provisions % NPLs	31.8%	45.9%	37.9%	31.5%	46.4%	37.2%	31.6%	45.7%	38.1%	31.6%	45.9%	37.8%
<b>Wtd Avg. LTV</b>	<b>100%</b>	<b>118%</b>	<b>105%</b>	<b>110%</b>	<b>134%</b>	<b>116%</b>	<b>97.5%</b>	<b>110.6%</b>	<b>110.5%</b>	<b>101%</b>	<b>120%</b>	<b>106%</b>
<b>Wtd Avg. LTV - NPL</b>	<b>121%</b>	<b>129%</b>	<b>125%</b>	<b>122%</b>	<b>139%</b>	<b>129%</b>	<b>11.8%</b>	<b>121.8%</b>	<b>116.4%</b>	<b>117%</b>	<b>128%</b>	<b>122%</b>
<b>Wtd. Avg LTV - Performing</b>	<b>98%</b>	<b>116%</b>	<b>103%</b>	<b>108%</b>	<b>132%</b>	<b>113%</b>	<b>95.8%</b>	<b>105.5%</b>	<b>97.6%</b>	<b>101%</b>	<b>115%</b>	<b>104%</b>
<i>Jun 2012</i>	<i>O/O</i>	<i>BTL</i>	<i>Total</i>				<i>O/O</i>	<i>BTL</i>	<i>Total</i>			
Mortgage balances	20.7	6.9	27.6				31.7	9.4	41.1			
Non-performing loans	1.9	1.4	3.3				4.1	3.5	7.6			
<b>NPL (%)</b>	<b>9.2%</b>	<b>20.7%</b>	<b>12.1%</b>				<b>12.9%</b>	<b>37.2%</b>	<b>18.5%</b>			
Impairment provisions	672	651	1323				1247	1556	2803			
Provisions % loans	3.2%	9.5%	4.8%				3.9%	16.6%	6.8%			
Provisions % NPLs	35%	46%	40%				30%	45%	37%			
<b>Wtd Avg. LTV</b>	<b>106%</b>	<b>125%</b>	<b>110%</b>				<b>n/a</b>	<b>n/a</b>	<b>n/a</b>			
<b>Wtd Avg. LTV - NPL</b>	<b>129%</b>	<b>137%</b>	<b>132%</b>				<b>n/a</b>	<b>n/a</b>	<b>n/a</b>			
<b>Wtd. Avg LTV - Performing</b>	<b>96%</b>	<b>82%</b>	<b>93%</b>				<b>n/a</b>	<b>n/a</b>	<b>n/a</b>			

Source: Company accounts; Davy

It comes as no surprise that the peak issuance years 2006-2008 account for a sizeable proportion of banks' mortgage books and arrears across all three banks. This suggests that more conservative underwriting has been the principal factor explaining Bank of Ireland's less severe arrears. In contrast, we know that foreign lenders came late to the market, so strong issuance during the peak years has pushed up on arrears for them.

**Table 12: Mortgage origination and performance in peak years, 2006-2008**

At end 2011	Value (€bn)	By value mortgage balance		By numbers of mortgages	
		Proportion of mortgage book	Proportion of arrears value	Proportion of outstanding mortgages	Proportion of arrears (%)
ALBK/EBS	21	50%	62%	38%	48%
BKIR	13.7	49%	64%	36%	49%
PTSB	16.6	65%	80%	45%	68%
Total	51.3	54%	70%	39%	59%
<b>At end June 2012</b>					
BKIR	13.4	49%	63%	36%	49%

Source: Company accounts; Davy

- The peak years of the housing market account for the bulk of arrears, particularly for foreign lenders who entered the market around that time.

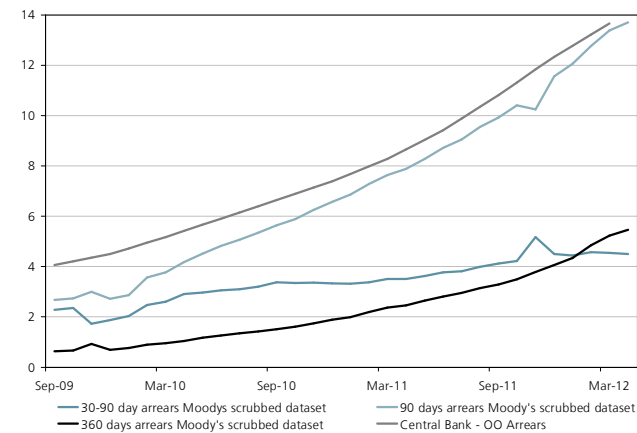
## RMBS data suggest that Irish mortgage arrears rates have further to rise

A key question for the Irish banking system and broader macro-economy is where the arrears rates may finally peak. As previously shown, the level of foreclosure has remained very low notwithstanding the fact that a high proportion of restructured loans have relapsed into arrears.

Data derived from Moody's rated Irish prime RMBS (which includes both public and retained issues) provide additional detail on mortgage arrears development. We have scrubbed the dataset – removed KBC's Phoenix and BOSI's Wolfhound securities – to more accurately reflect an owner occupier industry sample, which at €33.5bn (a quarter of the market) represents a credible sample size for market trends. We have used data to end-April as not all securitisation data are available to end June, especially in the case of Ulster Bank (given its current IT difficulties).

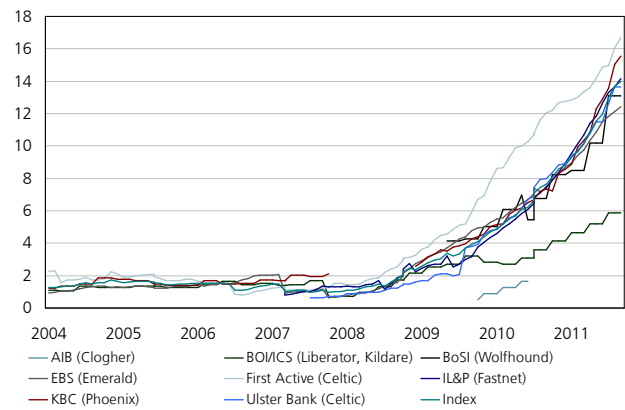
The chart below illustrates that movements in these arrears in excess of 90 days have been well correlated with official Central Bank series for owner occupiers. At end Q1, mortgages in arrears >90 days (by balance) were 13.4% in the scrubbed dataset, which was close to the 13.65% reported by the Central Bank for its owner occupier data series<sup>5</sup>.

Figure 6: Delinquency rates derived from RMBS indices



Source: Moody's Investors Service; Bloomberg; Davy calculations

Figure 7: Delinquency rates of Irish RMBS pool



Source: Moody's Investors Service; Bloomberg

An interesting point is that the numbers in earlier stage arrears between 30-90 days appear to have stabilised.<sup>6</sup> So the rate of increase in delinquencies in excess of 90 days should begin to level off eventually. In the near-term, however, the RMBS data suggest that arrears in excess of 90 days will continue to rise.

<sup>5</sup> That the data series is below the owner occupier rate is to be expected as it is more likely that mortgages included in securitisations would be of higher quality given the more stringent criteria for their inclusion.

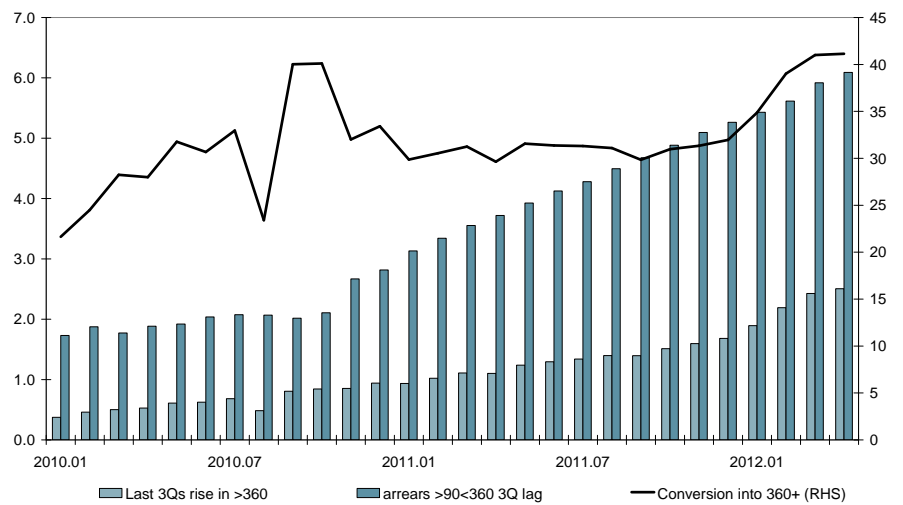
<sup>6</sup> A point echoed by the IBF in its recent comments following the publication of the Central Bank Q1 owner occupier arrears data.

The chart above illustrates delinquency rates by separate RMBS securities. There is significant variation around the weighted average. First Active's Celtic securities and KBC's Phoenix securities have the worst performing delinquency rates. In contrast, Kildare securities relating to Bank of Ireland have the lowest rates of delinquency.

Determining the outlook for loan performance is hindered by the lack of short-term data. A simple flow analysis of the scrubbed dataset suggests that the headline 90+ days measure increases from 13.7% in April to 14.7% by June. So further increases in Irish mortgage arrears rates seem likely. However, looking further ahead, we need to consider the underlying macroeconomic determinants driving mortgage arrears.

Our analysis of the RMBS data also gives us greater insight into the movement of delinquent mortgages into longer-term arrears, i.e. 360 days+, the best proxy for unsustainable mortgages. The movement of delinquent mortgages from earlier stage arrears into longer-term arrears also indicates the success or otherwise of mortgage modifications. It appears that the flow of loans in arrears greater than 90 days into the 360+ category appears to be rising. This suggests that the rate at which loans in arrears have been 'cured' has been falling. So long-term delinquency rates will continue rising.

**Figure 8: Flow of mortgages in arrears into long-term arrears**



Source: Moody's; Davy

\* this analysis assumes that mortgages do not flow out/or get cured from the 360+ category, which we believe is a fair assumption given the lack of repossessions and the fact that banks have yet to begin offering trial solutions for long-term sustainable mortgages.



## 4. Macroeconomic determinants of loan performance

In this section we discuss the macroeconomic factors explaining the rise in arrears rates and where arrears may peak looking forward. Our conclusion is that a slowly stabilising labour market should reduce the formation of mortgage arrears so that the pace of increase in the 90+ days arrears rate begins to slow.

### Lower interest costs have offset weaker disposable income for the employed

Since late 2008, cuts in ECB interest rates have helped to reduce the cost of Ireland's household mortgage debt. Irish households' interest payments peaked at €8.1bn in 2008 but had halved to just €4.2bn in 2010. A Central Bank of Ireland study ("The Irish Mortgage Market: Stylised Facts, Negative Equity and Arrears" by Kennedy, McIndoe Calder, 2011) found that a particularly high proportion of mortgages that originated in the peak years of 2006, 2007 and 2008 were tracker mortgages. So individuals with larger mortgage debts are also most likely to benefit from lower ECB rates.

- Interest rate cuts have shielded Irish mortgage holders from falling nominal wages

**Table 13: Distribution of mortgage type by year of origination**

	2004	2005	2006	2007	2008	2009	2010	Total
Fixed rate mortgages	14.2	14.6	12.6	9.7	14.7	35.8	61.5	17.9
Tracker mortgages	43.3	49.9	62.3	74.2	66.6	1.4	0.4	51.9
Variable rate mortgages	42.6	35.5	25.1	16.1	18.7	62.7	38.1	30.2
Primary mortgage balance (€ 000s)	187	211	244	256	245	206	185	228

Source: Central Bank of Ireland

Average weekly earnings data show that nominal wage cuts in the Irish economy have been less than 10% in most sectors and just 4.5% in aggregate. The magnitude of these pay cuts does not seem sufficient to explain the rise in mortgage arrears. Indeed, the Irish savings ratio remains in double-digit levels, illustrating households' ability to re-orientate their spending behaviour despite cuts in disposable income.

- The cuts in nominal pay have not been sufficiently large to explain rising arrears

The Central Bank of Ireland estimated that the ratio of mortgage repayments to income was still below 25% for four of every five Irish households in 2010 after accounting for cuts in pay. For the remaining 20% of households, the ratio was estimated to be below 35% for the majority. That said, clearly the ability of Irish households to continue servicing mortgage debt relies on continued low ECB interest rates.

- The ratio of mortgage repayments to income remains low 35% for the vast majority of Irish households

The key point is that for those individuals still in employment, squeezed disposable incomes do not appear to be a key driver of mortgage arrears. Employment cuts, rather than reductions in nominal pay and disposable income, are likely to be the key factor driving the deterioration in Irish households' ability to service mortgage debt.

## Correlation between negative equity and arrears appears weak

- The relationship between unemployment and arrears seems to be faster for BTL borrowers

- It does not appear that negative equity has driven mortgage arrears for owner occupiers – indicative of a lack of strategic non-payment

Beyond the deterioration in ability to pay, the possibility remains that some households have engaged in strategic non-payment of loans, particularly for those in negative equity. Clearly, this trend was extremely prevalent in the US, where the ability of banks to pursue borrowers was constrained to the housing assets that the loans were secured against. Borrowers in Ireland have had little ability to 'walk away' from mortgage debt given the stringent bankruptcy laws.

A recent Central Bank of Ireland study ("What Lies Beneath? Understanding Recent Trends in Irish Mortgage Arrears", by Lydon and McCarthy, 2011) of confidential loan level data (from the banks participating in last year's PCAR exercise) found that changes in the unemployment rate appeared to have a faster impact on BTL arrears than owner occupier arrears. The authors interpreted this result as evidence that BTL owners had less incentive to maintain payments on properties in which they were not resident. This is consistent with owner occupiers maintaining mortgage payments with existing savings following job losses.

The study found a clear relationship between the loan-to-value (LTV) ratio and the arrears rate for BTL borrowers but not for owner occupiers. This result suggests that falling house prices, driving owner occupiers into negative equity, has not been a trigger driving arrears. The apparent relationship for BTLs could reflect more risky loans at origination – that is, inherently riskier borrowers took out loans with higher LTVs. So the apparent relationship could reflect risk-preferences among borrowers rather than any evidence of strategic non-payment by borrowers triggered by negative equity.

**Table 14: Cross correlation between house prices and negative equity, end-2010 Central Bank of Ireland data, PCAR banks, % mortgages**

	<i>Negative equity</i>	<i>Positive equity</i>	<i>Total</i>
In arrears > 90 days	2.45	2.6	5.1
Not in arrears	28.2	66.8	94.9
<b>Total</b>	30.6	69.4	100.0
Proportion in arrears	8.0%	3.7%	5.1%

Source: Central Bank of Ireland

The table above illustrates a summary of the loan-level data studied by the Central Bank for end-2010. Amongst the 30.6% estimated to be in negative equity, just 2.5% were in arrears. We believe over 50% of Irish mortgages by number are now in negative equity compared with the 10.2% of owner occupiers in arrears in Q1 2012.

Clearly, the group of mortgages both in negative equity and arrears will have grown well above 2.5% since end-2010. Residential property prices have fallen by a further 21% since the end of 2010, and the owner-occupier arrears rate has doubled from 5.1% in Q1 2011 to 10.2% in Q1 2012. The table also shows that at end-2010 close to 50% (€2.5bn versus €2.6bn) of those mortgages in arrears were also in negative equity compared with 30.6% for the total mortgage sample.

However, the evidence suggests that negative equity has not been a clear trigger for arrears behaviour; rather, employment cuts reducing households' ability to pay have been the key driver. That said, the fact that, within the sample of those mortgages in arrears, LTV ratios tend to be high is a key factor that will determine banks' mortgage book loan losses.

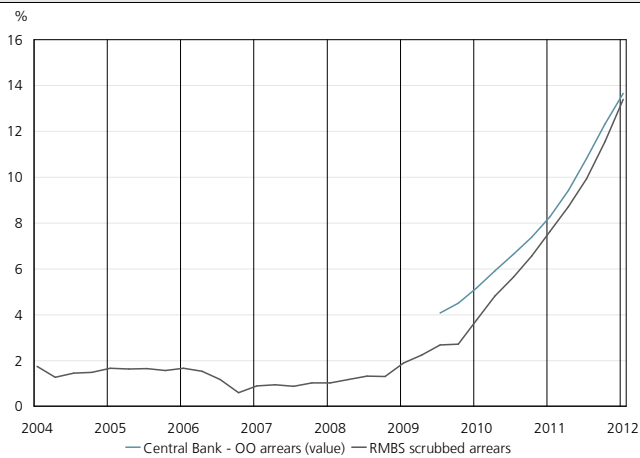
### Unemployment has been the key variable driving arrears

- Labour market conditions have been the key driver of arrears – influencing ability to pay

We believe employment cuts are the principal driver of mortgage arrears. How may arrears evolve given the outlook for labour market conditions? Unfortunately, official data for owner occupier arrears are only published by the Central Bank of Ireland for the period from Q3 2009 onwards.

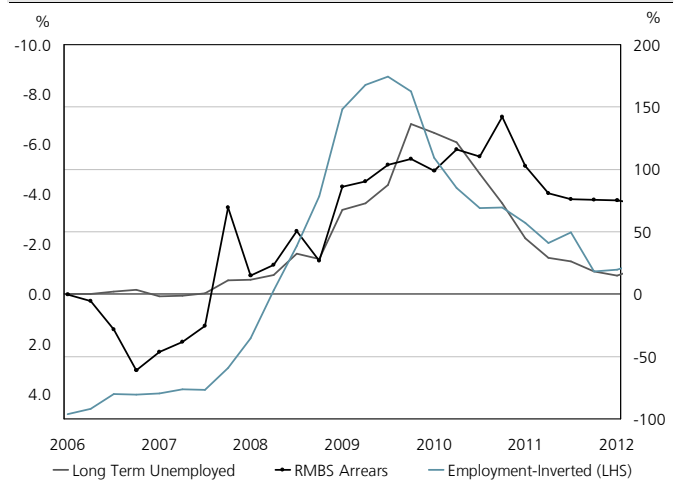
We use RMBS data to give a longer time series for arrears rates to compare against developments in the Irish labour market. A close correlation exists between the official Central Bank series for owner occupier arrears rates and our scrubbed RMBS dataset.

Figure 9: Irish mortgage arrears rate, value



Source: Bloomberg; Moody's Investors Service; Central Bank of Ireland

Figure 10: Annual changes in the arrears rate and Irish labour market variables



Source: Central Statistics Office; Moody's Investors Service

- We expect labour market conditions to slowly stabilise, limiting further increases in arrears

The pace at which employment has contracted has slowed from -8.7% in Q3 2009 to just 1% in Q1 2012. Similarly, the pace of increase in long-term unemployment has started to slow. Broadly speaking, labour market variables have been well correlated with the pick-up in owner occupier arrears since 2008.

- Labour market variables have been well correlated with arrears

A key point is that the exceptionally sharp 8.1% and 4.2% declines in Irish employment in 2009 and 2010 are unlikely to be repeated. So, as labour market variables slowly stabilise, the inflow of new arrears should begin to decline.

## Forecast model suggests owner occupier arrears may peak at 16.5%

We have devised a statistical regression model to provide projections of where the arrears rate may peak. Our forecast is based on the relationship between our scrubbed RMBS 90+ days arrears rate and employment, long-term unemployment (greater than one year) and the interest rate on the outstanding stock of Irish mortgage debt.

We highlight two forecasts from our statistical model: the first based on our current forecasts for the Irish economy and the second based on a more adverse set of assumptions outlined in the following table.

**Table 15: Macro assumptions underpinning statistical model**

	Base scenario		Adverse scenario	
	Employment	Long-term unemployment	Employment	Long-term unemployment
2012	-0.9	12.5	-1.2	19.1
2013	0.4	5.6	-0.6	9.51
2014	0.9	1.5	0.2	2.02

Source: Davy calculations

The following table describes our estimated statistical equations. Here, the long-term unemployment rate refers to those unemployed for more than one year. The interest rate is the effective rate on the stock of Irish mortgage debt. For both the >90 days and >360 days forecast models, long-term unemployment is the most statistically significant variable. The R-squared statistic measures the overall accuracy of the predictive model; at 98% and 95% respectively, both models fit the data well.

**Table 16: Estimated statistical equations used to forecast arrears**

90-day arrears model	Coefficient	360-day arrears model	Coefficient
Constant	48.488 (8.154)	Constant	47.078 (3.96)
Employment (-2)	-6.435 (-8.799)	Employment (-4)*	-6.566 (4.528)
Long term unemployed	0.799 (17.096)	Long term unemployed (-3)	1.585 (-16.817)
Interest rate (-1)	0.588 (3.557)	Interest rate (-6)	1.226 (3.099)
r <sup>2</sup>	98%	r <sup>2</sup>	95.2%

\*Annualised employment numbers used in estimating this model.

Source: Davy estimates

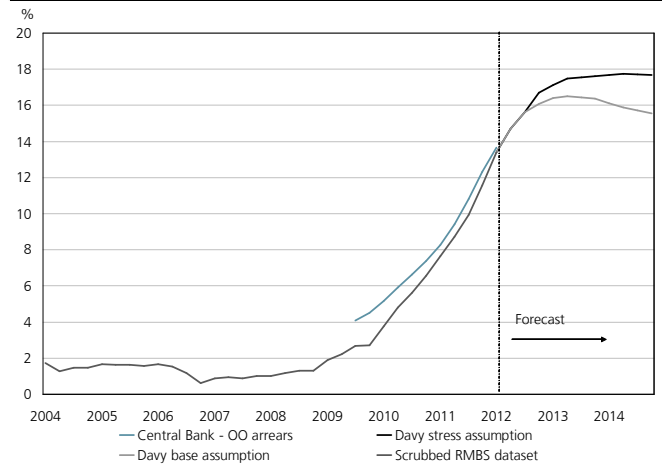
T-statistics in parentheses below coefficient. Figures beside variable names indicate number of lagged quarters used in each equation.

Looking forward, our estimated equations suggest that the 90-days arrears rate should peak at 16.5% under a base scenario (current Davy economic forecasts) and close to 18% using our adverse economic scenario. Our >360 days arrears predictive model shows arrears peaking at 9.9% under a base scenario, approximately double their current level, and peaking at 12.1% in our adverse scenario.

- Forecast model predicts >90days arrears will peak at 16.5% under a base scenario (current Davy economic forecasts) and close to 18% using our adverse economic scenario

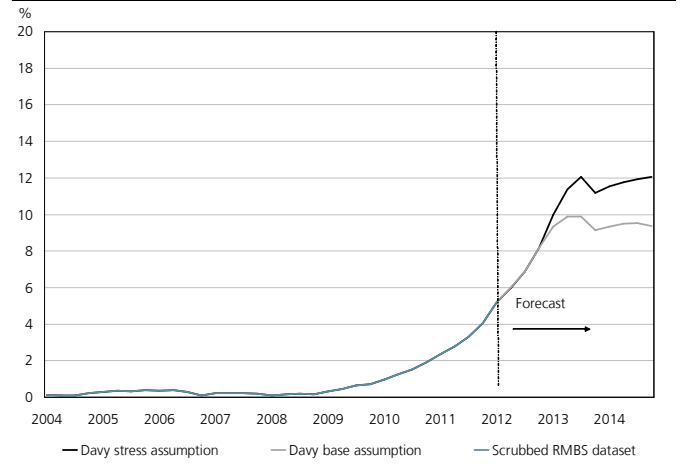
These forecasts imply that the 'cure rate' of 90+ days arrears will eventually fall from close to 60% to 33%, which we believe is realistic. We have already seen the rate at which 90 day arrears translate into longer-term arrears rise. The 360+ day arrears rate has yet to reflect the surge in 90 day arrears in the latter part of 2011. So our forecast for the 90+ day arrears rate flattens off much earlier than 360+ day arrears.

**Figure 11: Davy projections for 90 days RMBS arrears rate**



Source: Davy calculations; Moody's Investors Service

**Figure 12: Davy projections for 360 days RMBS arrears rate**



Source: Davy calculations; Moody's Investors Service

- Our statistical model, coupled with our economic forecasts, suggests that arrears rates will begin to flatten off

- The key point here is that any projection based on labour market variables will lead to a flattening off in the arrears rate

Nonetheless, our model predicts an arrears rate of 12.0% in Q1 2012 compared with the 13.4% out-turn in the scrubbed RMBS dataset >90 days rate. Our statistical models find it difficult to account for some of the sharp rise in 90 days arrears rates through 2011. This leaves open the possibility that for some sectors of the mortgage market there has been strategic non-payment. That said, the inclusion of long-term unemployment helps to explain the bulk of the rise in the 90+ days arrears rate.

The key point from our analysis is that labour market developments are unlikely to sustain upward pressure on the arrears rate going forward. The exceptional sharp drops in employment that occurred in 2009 and 2010 are unlikely to be repeated and, combined with long-term unemployment, the lagged impact onto arrears is most likely less than two years. This suggests that the arrears rate should eventually begin to level off.

### Long-term unemployment contributed to the sharp rise in arrears in 2011

Estimating the statistical relationship infers reasonably short lags, less than one-year, between employment and the arrears rate. However, given that long-term unemployment is defined as greater than one year, the effective lag between labour market developments and arrears is up to two years.

Nonetheless, the exceptionally sharp declines in Irish employment that occurred in 2009 and 2010 should now have fed into the long-term unemployment rate. So, on the basis that labour market conditions will

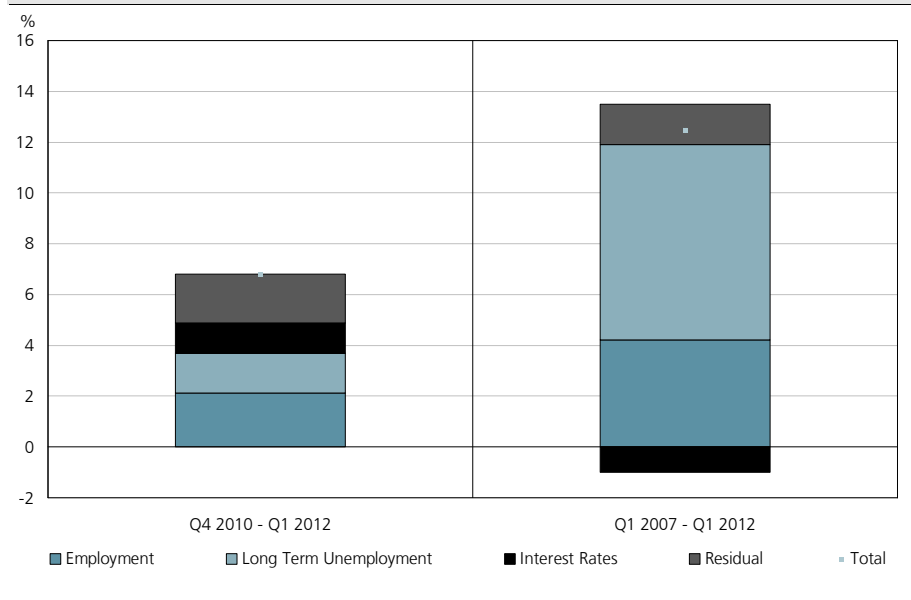
continue to stabilise, the rate of increase in the >90 days arrears rate should be expected to slow.

The chart below illustrates how our statistical model explains the rise in the arrears rate. Although the coefficient on employment is larger than long-term unemployment, it is worth bearing in mind that the percentage changes in long-term unemployment have been larger than overall employment. So both the employment and long-term unemployment variables play a key role in determining arrears in our statistical equation.

Including long-term unemployment helps improve our ability to predict the sharp rise in arrears through 2011. Alternative estimated equations (not reported), including on employment and interest rates, make larger errors in explaining arrears rates over the past year. One possibility is that long-term unemployment may capture borrowers revising down their expectations for employment prospects and deciding not to service mortgage debt with existing (and depleted) savings.

As discussed, the effective interest rate on the stock of outstanding mortgage debt is extremely sensitive to ECB interest rate changes due to the prevalence of tracker mortgages. ECB interest rate cuts have pushed down on arrears since 2007, but the temporary increases in the policy rate in the summer of 2011 may have pushed up on arrears.

**Figure 13: Estimated decomposition of changes in the 90-day arrears**



Source: Davy

Overall, our model suggests that of the 12.5 percentage point (pp) rise in the 90 days arrears rate since Q1 2007 to Q1 2012, 7.7pp is explained statistically by long-term unemployment and 4.2pp by employment, with interest rate cuts reducing the arrears rate by 1.0pp. With respect to the period through 2011, our model explains the bulk of the rise in arrears through rising long-term unemployment.

## 5. Measures to address deteriorating loan performance

Irish banks' success in addressing non-performing loans has been limited. In this section we set out the measures thus far and discuss the advanced forbearance options that are now being rolled out ahead of the new personal insolvency regime.

### Restructurings have had limited success in correcting loan performance

Thus far, 10.4% of the 764,000 total owner occupier mortgages have been restructured. But more than half, 40,700, remain in arrears. Foreclosures have been negligible, just 1,183 in total up to Q4 2011. The table below provides detail on the type of restructurings. Together, interest only and less than interest account for half of the total. However, 17.4% of restructured mortgages included interest and some principal.

- Half of restructured mortgages remain in arrears

**Table 17: Restructured mortgages, owner occupiers**

Restructured loans	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012
Interest only	23.5	24.5	24.8	24.8	27.8
Reduced > interest only	9.2	10.0	10.3	13.2	13.9
Reduced < interest only	8.6	9.4	10.0	11.1	11.4
Term extension	8.6	9.0	9.3	9.2	9.7
Capitalised arrears	7.7	8.4	8.8	9.0	9.6
Other	5.5	5.4	6.4	7.1	7.4
Total	62.9	66.7	69.7	74.4	79.7

Source: Company reports; Davy

The key point on Irish mortgage restructurings so far is that they have excluded reductions in mortgage principals, the most effective in improving loan performance (albeit the most expensive for banks' capital).

**Table 18: Specific types of mortgage modification**

Capitalisation	Arreages and expenses associated with delinquency are added to the loan balance Payment is re-calculated based on amortisation of the higher balance over remaining term of the loan	Lower cost/ Less effective
Interest rate reduction/freeze	Interest rate on the loan is reduced or frozen at its current rate Payments are recalculated at the new interest rate	
Term extension	Term of the loan is extended Payment is lowered by re-amortising the loan over the longer term	
Principal deferral	Payments on a portion of the outstanding balance are deferred and no interest is accrued Payments are lowered by re-amortising the loan over the lower principal balance Deferred principal is repaid at maturity, when non-deferred amount is repaid, or when property is sold	
Principal reduction	A portion of the principal balance of the loan is forgiven Payment is lowered by re-amortising the loan over the lower principal balance	

Source: Blackrock Solutions

- Bias towards restructuring owner occupier over BTL mortgages

The following table summarises restructured loans at ALBK/EBS, BKIR and PTSB at the end of 2011, allowing us to look at the BTL sector. There has been a bias towards restructuring owner occupier mortgages rather than BTL loans. Restructured owner-occupiers accounted for 9.9% of the total book relative to the 13.7% of BTL loans.

**Table 19: Restructured loans**

Aggregate ALBK, BKIR, PTSB	Loans not in default €m	Number	Loans >90days/ Imp €m	Number	All loans €m	Number
<b>Owner occupied (OO)</b>						
Interest only	2634	15165	931	4955	3565	20120
Reduced payment (< int only)	376	1995	110	548	486	2543
Reduced payment (> int only)	1041	6464	304	1632	1345	8096
Term Extension	756	7557	72	707	828	8264
Other	550	3531	357	1957	907	5488
<b>Total</b>	<b>5357</b>	<b>34712</b>	<b>1774</b>	<b>9799</b>	<b>7131</b>	<b>44511</b>
As % of mortgages					9.90	
<b>BTL</b>						
Interest only	1259	5871	877	2863	2136	8734
Reduced payment (< int only)	2	7	0	3	2	10
Reduced payment (> int only)	300	1247	66	190	366	1437
Term Extension	210	1398	31	155	241	1553
Other	184	558	244	770	428	1328
<b>Total BTL</b>	<b>1955</b>	<b>9081</b>	<b>1218</b>	<b>3981</b>	<b>3173</b>	<b>13062</b>
As % of mortgages					13.70	%
Total OO and BTL	7312	43793	2992	13780	10304	57573
As % of mortgages		6.9%		2.2%	10.9%	9.1%
<b>June 2012</b>						
<b>Owner occupied (OO)</b>						
Interest only	2197	13302	1262	6863	3459	20165
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	532	2875	229	1006	761	3881
Term Extension	724	7261	78	805	802	8066
Other	302	2008	357	1896	659	3904
<b>Total</b>	<b>3755</b>	<b>25446</b>	<b>1926</b>	<b>10570</b>	<b>5681</b>	<b>36016</b>
As % of mortgages						
<b>BTL</b>						
Interest only	1065	5165	1085	3842	2150	9007
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	333	1498	127	505	460	2003
Term Extension	195	1392	37	169	232	1561
Other	98	469	303	1021	401	1490
<b>Total BTL</b>	<b>1691</b>	<b>8524</b>	<b>1552</b>	<b>5537</b>	<b>3243</b>	<b>14061</b>
As % of mortgages						
<b>Total OO &amp; BTL</b>	<b>5446</b>	<b>33970</b>	<b>3478</b>	<b>16107</b>	<b>8924</b>	<b>50077</b>
As % of mortgages					13%	

Source: Central Bank of Ireland



Restructured mortgages at the covered lenders have been more successful. Only 22% of restructured loans at the three lenders remained in arrears compared with 51% for the entire market<sup>7</sup>.

## Negligible principal reductions and repossessions

However, reductions in mortgage principals have been negligible. Net charge-offs from BKIR's and PTSB's mortgage books were just 0.2% and 0.01% respectively. ALBK revealed that net charge-offs in its Personal and Business Banking division were €300m or circa 1% of end-2011 loans, of which 38% related to property. This reflects a trend where charge-offs on personal debt have been more substantial.

**Table 20: Net charge-offs (NCOs) in 2011**

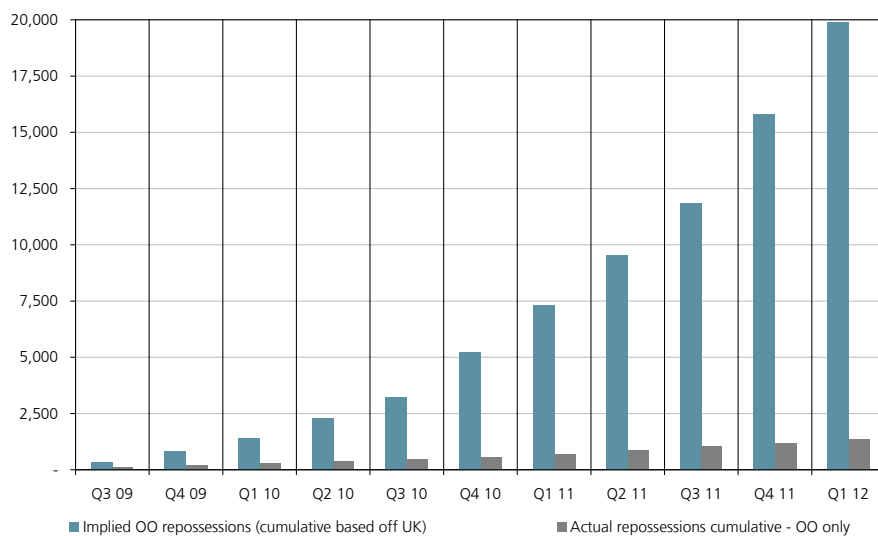
	Net charge-offs €m	End-2010 loans	End-2011 loans	Net charge-offs (%)
<b>BKIR</b>				
Irish mortgages	49	28067	27854	0.18%
UK mortgages	0	32199	29636	0.00%
Total mortgages	49	60266	60804	0.08%
Personal loans	147	3688	3314	4.19%
<b>Aggregate</b>	<b>196</b>	<b>63965</b>	<b>60804</b>	<b>0.31%</b>
<b>BKIR H1 2012</b>				
Irish mortgages	23	27854	27582	0.17%
UK mortgages	0	29636	28930	0.00%
Total mortgages	23	57490	56512	0.08%
Personal loans	57	3314	3213	3.49%
<b>Aggregate</b>	<b>80</b>	<b>60804</b>	<b>59725</b>	<b>0.27%</b>
<b>PTSB</b>				
Irish mortgages	3	26340	25419	0.01%
Personal loans	24	1375	997	2.20%
<b>Aggregate</b>	<b>27</b>	<b>27715</b>	<b>26416</b>	<b>0.10%</b>

Source: Company reports

The quarterly Central Bank data for mortgage arrears indicate that cumulative owner occupier repossessions since the beginning of the data collection (Q3 2009) total only 1,351 to end-Q1 2012. If we contrast arrears data with the UK's experience of arrears conversion into repossessions, cumulative repossessions over the same period would be far higher at nearly 20,000. We do not have data available for BTL repossessions to date, but BTL arrears would significantly add to this implied repossessions figure.

<sup>7</sup> At its 2012 AGC, BKIR raised the issue of its €7bn Irish BTL book, stressing a distinction between 'amateur' landlords (€4bn) where arrears performance was close to that for owner occupiers and 'professional' landlords (€3bn) which are more 'problematic'. The bank is appointing rent receivers in an attempt to tackle BTL investors that 'divert' their property income away from the bank.

**Figure 14: Cumulative OO repossessions versus implied from UK experience**



Source: Davy; CML; Central Bank

### Advanced forbearance options now beginning to appear

Banks have now begun to roll-out advanced forbearance options, along the lines of the government-appointed Inter-Departmental Mortgage Arrears Working Group (Keane Report) published in September 2011 and ahead of the new personal insolvency legislation.

The guiding principles of the Keane Report were:

- those who can discharge their mortgage obligations must do so;
- there is no entitlement to a particular solution;
- in unsustainable circumstances, it is inevitable that some borrowers will lose their homes.

The group ruled out a scheme of blanket debt forgiveness, instead recommending that a range of solutions should be developed by lenders with the aim of keeping people in their homes where appropriate. These measures would go further than the restructuring options relied on to date (interest only, term extension etc), including mortgage to rent schemes; trade-down mortgages; split mortgages; and sale by agreement.

Banks are currently in the process of rolling out such advanced forbearance schemes. For instance, ALBK's menu of options is summarised in the table below. At its recent results briefing, management noted that ALBK had 44 voluntary sale for loss executions in progress and agreed about 19 split mortgages.

**Table 21: Overview of Keane Report's advanced forbearance options**

<i>Advanced mortgage arrears options</i>	<i>Description</i>
Split mortgage	A portion of the principal may be deferred and become payable at a later date.
Trade down	A mortgage on a smaller property based on the customer's affordability.
Voluntary sale for loss	Where advanced forbearance is not sustainable and other resolution options are not available.
Mortgage to rent	Where a customer qualifies for social housing and advanced forbearance is unsustainable.
Outreach Initiatives (pre-arrears)	Programme to increase awareness and improve customer engagement in relation to mortgage arrears, for pre-arrears customers.

Source: ALBK

A split mortgage involves separating a distressed mortgage into an affordable mortgage and warehousing the balance (with interest accruing). The size of the affordable mortgage, paid down over the income earning life of the mortgage holder, is calculated using an agreed formula (for example, setting an appropriate mortgage repayment/net disposable income ratio). The ratio could be recalculated on a periodic basis. Should a mortgage holder's disposable income increase, an amount would transfer from the warehouse to the affordable mortgage, based on a pre-agreed formula.

The mortgage lender and mortgage holder would need to decide how the balance remaining in the warehoused loan is to be settled at term end. In scenario 1, the mortgage holder would need to assess whether the €115,000 is sufficient to meet his or her retirement needs. However, in scenario 2, the mortgage holder and the mortgage lender will in all likelihood need to consider alternative solutions, including sale by agreement, bankruptcy/debt settlement, interest rate reductions on the warehouse, equity sharing or perhaps a life interest arrangement.

**Table 22: Illustration of warehouse forbearance solution**

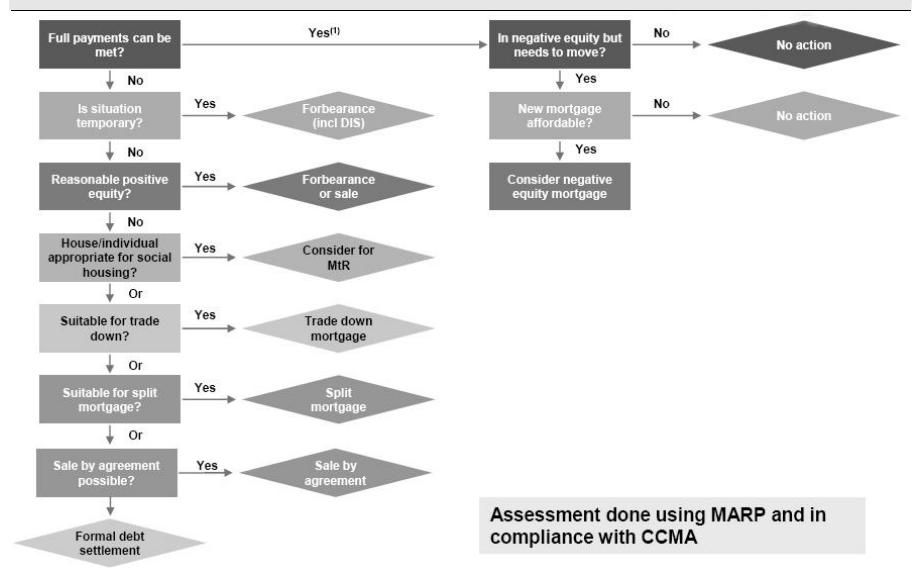
€	<i>Affordable</i>	<i>Scenario 1 warehouse</i>	<i>Scenario 2 warehouse</i>
House value today	120,000	120,000	120,000
Estimated house value at end of 30 years	217,000	217,000	217,000
Existing mortgage		170,000	200,000
Split mortgage today	123,000	47,000	77,000
Year 1-5 principal repaid	-10,000		
Year 1-5 interest roll-up		13,000	21,000
Balance at end year 5	113,000	60,000	98,000
Income increase: transfer from warehouse	28,000	-28,000	-28,000
	<b>141,000</b>	<b>32,000</b>	<b>70,000</b>
Year 5-30 principal repaid			
Year 5-30 interest roll-up		70,000	156,000
Balance at term end	NIL	102,000	226,000
<b>Net equity at term end</b>		<b>115,000</b>	<b>-9,000</b>

Source: Keane Report

Under the mortgage-to-rent scheme, an approved housing body acquires the property and the family stays in their home as a tenant, paying an affordable rent to the housing association rather than as an owner occupier with a mortgage. Such schemes would apply only where the customer qualifies for social housing and other advanced forbearance options are not sustainable.

The scheme was rolled out nationally on June 27th 2012, and housing association Cluid estimates that it could prevent up to 3,500 families from losing their homes. This is modest in the context of the 77,630 homeowners in 90+ days arrears at end-Q1. The Keane Report recommended a decision tree approach to assessment, outlined in the following diagram.

**Figure 15: Decision Tree approach to assessing advanced forbearance criteria**



Note: (1) Not a focus of the Group’s work as customers are not in arrears but the issue is worthy of consideration

Source: Inter-Departmental Mortgage Arrears Working Group

These more advanced forbearance options are intended to go further than basic restructuring options such as term extension, interest only etc. However, to the extent that they stop short of principal forbearance – a point acknowledged by ALBK when it suggested they would be capital neutral – we expect their success in restoring loan performance to be limited.

## 6. The new Irish personal insolvency legislation

The government published its much anticipated Personal Insolvency Bill, which will modernise Ireland's personal insolvency and bankruptcy system, on June 29th 2012. A new personal insolvency regime was one of the conditions contained in Ireland's signed memorandum of understanding with the Troika. The goal of the new personal insolvency regime is to provide a regulated, non-judicial process to try to resolve unsustainable debts when bilateral negotiations between banks and borrowers have failed but with the ultimate recourse to a reformed formal bankruptcy regime. The bill is particularly needed when set against the high levels of household indebtedness and a previously penal discharge period of 12 years under bankruptcy, which will now be reduced to three years.

- Ireland's financial institutions are preparing to deal with the legacy of non-performing household debt

The effort to reform Ireland's personal insolvency laws has been coupled with the Central Bank's engagement with Irish banks to enhance their operational capability to deal with distressed mortgages. Irish banks are now expected to pilot new products such as mortgage to rent, split mortgages, trade-downs and voluntary sales for loss schemes to deal with unsustainable mortgages by the end of Q3. These schemes, referred to as 'advanced forbearance', represent a progressive step beyond the short-term hopeful measures such as interest-only offerings that have accounted for the bulk of mortgage modifications to date. The schemes follow on from recommendations in last year's government-commissioned Keane Report. Full implementation of these new schemes and enactment of the personal insolvency legislation are expected by year-end.

### Creditors retain veto on debt write-down in Personal Insolvency Arrangement (PIA)

The table below sets out the non-judicial options under the new regime, with our focus on the Personal Insolvency Arrangement (PIA) for unsecured and uniquely secured debt up to €3m<sup>8</sup>. The arrangement is provided to allow a debtor to discharge his or her unsustainable debts among one or more creditors and return to a position of solvency after a six-year period (with a possible agreed extension to seven years). To approve a PIA, 50% of secured and 50% of unsecured creditors must agree, with an overall approval condition of 65% by value<sup>9</sup>. The majority approval rates are significant as creditors will effectively retain a veto on any proposed arrangement. Furthermore, in its current form the bill does not offer any process for a right of appeal on the part of disgruntled debtors.

- The personal insolvency regime provides a framework to work-through unsustainable debts, albeit with a veto for creditors, but with a costly and reformed bankruptcy law as a stick for banks

<sup>8</sup> Apart from personal unsecured debt and mortgages, sole trader debt/any debt backed by personal guarantees may also be included.

<sup>9</sup> Additionally, approval is required of more than half of voting secured creditors (based on the value of security or if less the debt) and half of voting unsecured creditors (based on the debt).

- The Personal Insolvency Service and Personal Insolvency Practitioners are a key part of the framework to deal with debt

**Table 23: Non-judicial options**

<i>Scheme</i>	<i>Criteria</i>
Voluntary debt settlement	Unsecured debt up to €20,000
Debt settlement arrangement	Unsecured debt over €20,000
Personal insolvency arrangement	Secured and unsecured debt up to €3m

Source: Department of Finance

The process will be facilitated by a Personal Insolvency Service (PIS) and Personal Insolvency Practitioners (PIPs). PIPs will be practising accountants, solicitors and insolvency experts. The PIP must prepare a financial statement for the debtor, incorporating a full description of debts, incomes and assets. It is also a criminal offence for the debtor to provide any misleading information in the statement, an issue that the current version of the bill considerably tightens up on in comparison with the draft version of the bill published earlier this year. The PIS will check the details and has recourse to the Revenue Commissioners, Social Welfare to verify information.

The PIA specifically does not require that a debtor disposes of his/her interest in or ceases to occupy his/her private residence. That is unless it is the debtor's wish to dispose of or vacate his/her private residence or where it is determined through a debtor's consultation with his/her appointed personal insolvency practitioner that the costs of continuing to reside in the principal private residence are disproportionately large.

**Table 24: Non judicial debt settlement proposals**

<i>Voluntary debt settlement</i>	<i>Debt settlement agreement</i>	<i>Personal insolvency arrangement</i>
1. For unsecured debt <€20,000	1. For unsecured debt >€20,000	1. Secured and unsecured debt €20,000-3m.
2. Debtor must have disposable income < €60 per month/no assets over €400m (bar car <€1200)	2. Apply for a Protection Certificate	2. May have income but unable to pay debts.
3. Applies for a Debt Relief Certificate	3. Prevents creditors taking action for a 30 day period giving the trustee time to negotiate with creditors	3. Trustee will assess eligibility and apply for a Protection Certificate granting a 60 day period to negotiate with creditors.
4. Gives one-year debt moratorium	4. Creditors will be offered a % of the debt over a 5-year period	4. Unsecured creditors will be offered a % of their debt to be paid over six years (with a possible agreed extension to seven years).
5. At the end of the year if the debtor still can't pay the debt is written off	5. 65% of creditors must agree to offer	5. Deal agreed in relation to secured debt on principal private residence that may include term extension, reduced interest, principal reduction.
6. Cannot apply for another certificate for six years (only two in a lifetime)	6. If agreed, arrangement is registered on the Insolvency register	6. BTL properties sold and a deal agreed in relation to any shortfall over six years.
7. Similar system operates in UK, Australia	7. If the debtor makes the payments as agreed, then the debts will be discharged at the end of 5 years	7. To approve a PIA, 50% of secured and 50% of unsecured creditors must agree, with an overall approval condition of 65% by value.
	8. Only one Debt Settlement Arrangement is permitted in a ten-year period	8. If agreed, arrangement is registered on the Insolvency register.
	9. Similar system operates in UK, Australia	9. Only one Personal Insolvency Arrangement is permitted in a lifetime.
		10. Possible claw-back of any uplift in value of principal private residence - if subsequently sold - up to maximum amount of any written down principal.

Source: Department of Finance

- Intention remains to liquidate BTL investments and maintain owner occupiers

The alternative to a negotiated PIA arrangement is the reformed bankruptcy proceedings, now a three-year timeframe (down from 12 years). Negotiations will take place against this three-year bankruptcy option. So although creditors retain a veto against a PIA proposal, if a debtor instead decides to petition for bankruptcy, the debtor will emerge with his/her debts cleared after three years – presumably leaving substantial write-offs in their wake. So in many cases there will be an incentive for creditors to agree a PIA as it is the less costly option. The intention is that negotiations will proceed on a case-by-case basis with no formal guidelines on how debt should be negotiated.

An example of how the PIA might work in practice has been published<sup>10</sup>. This suggests that, consistent with Central Bank guidance to banks, the emphasis should be on realising losses on BTL loans, with smaller write downs on owner occupier losses. In the worked example, unsecured creditors take a 60% write-off; the home mortgage is written down by 17%; while the BTL lender takes a 24% loss as the property is sold.

**Table 25: Illustrative example of PIA**

	Debt €	Payments	Loss	%	Comment
Unsecured	50,000	20,000	30,000	60%	Spread over 6 years
Owner occupier	300,000	250,000	50,000	16.7%	Term extended by 5 years
Buy to let	250,000	150,000			Proceeds of disposal
		40,000	60,000	24%	Pays €40,000 towards €100,000 shortfall

Source: Department of Finance

### PIA only to be offered where forbearance options have been exhausted

Importantly, it is not intended for the PIA to offer an attractive blanket debt forgiveness opportunity for all over-indebted borrowers in negative equity. To avail of a PIA, a debtor must prove the following after engagement with a personal insolvency practitioner:

- the debtor must be cash-flow insolvent (i.e. unable to meet his/her debts in full as they fall due);
- it is unforeseeable that over the course of a five-year period that the debtor will become solvent;
- a debt settlement arrangement (DSA) would not be a viable alternative to a PIA as a mechanism to make a debtor solvent within a five-year period;
- the debtor has co-operated for a period of at least six months with his or her secured creditors with respect to the debtor’s principal private residence in accordance with any process approved or required by the Central Bank and that, notwithstanding such co-operation, the debtor has not been able to agree an alternative repayment arrangement or the secured creditor has confirmed in writing its unwillingness to enter into an alternative repayment arrangement.

<sup>10</sup> See Department of Justice on June 29th ([Mortgage Arrears Supporting Information](#)).

Evidence that a debtor is cash-flow insolvent will be important in applying an arrangement to those in unsustainable positions rather than to those that are able to pay but just unwilling to do so. The final point above is noteworthy regarding a debtor's co-operation with his/her secured lender prior to a PIA arrangement. This suggests to us that debtors will first need to participate in a restructuring under one of the banks' new 'advanced forbearance' measures before any restructuring under a PIA is possible.

In our view, the PIA in its current form differs significantly from expectations of debt relief that circulated in the latter part of 2011. During this period banks were vocal regarding a rising trend in tactical delinquencies. There are still uncertainties regarding how the PIA will evolve into its final legislative form and how accommodative banks will be in facilitating a PIA. Banks' advanced forbearance measures may offer credible solutions or instead act as delaying mechanisms to tie up debtors and spread out the timeframe of realisation of the ultimate underlying losses. Estimates of the number of individuals who will apply for a PIA when the legislation is enacted later this year range from 10,000 to 30,000 <sup>11</sup>.

### **Bankruptcy risk if solutions for unsustainable mortgages lack credibility**

Households in severe distress (our Moody's RMBS adjusted dataset shows 5.46% in arrears for +360 days at end April) and with significant negative equity may be sceptical about engaging with banks without any near term debt write-down. This is more likely if debtors feel that they are being coerced into unrealistic advanced forbearance solutions that protect banks' capital but merely delay ultimate loss realisation.

In comparison, bankruptcy offers a shorter discharge period. The insolvency bill states that to avail of bankruptcy a debtor must show that he/she is insolvent and has made a reasonable attempt to use alternatives such as a PIA or the banks' mortgage arrears resolution process. So debtors may not be able to simply opt for bankruptcy if frustrated by the advanced forbearance/PIA process.

We presume that a debtor's credit standing will be similarly tarnished under a PIA as under bankruptcy. The main advantage of a PIA is that it allows a debtor to remain in his or her principal private residence. Under bankruptcy, the treatment of the family home is less clear, depending on factors such as whether the property is jointly owned and whether there is a family resident and on the judge's discretion.

Bankruptcy restricts a debtor from involvement in certain professions such as the financial and legal industries and from assuming the role of

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<sup>11</sup> The Department of Justice reportedly estimated that 16,000-17,000 would avail of the provisions of the act in its first year. This was described as "a tentative estimate, based on a rough extrapolation from comparable British and Northern Ireland situations". At the other extreme, the Independent Mortgage Advisers Federation suggested that up to 30,000 people would require this form of debt resolution to deal with their home loan difficulties.



an elected representative. A bankrupt cannot be a director in a company or be in any way involved in the management of a company. If a bankrupt wishes to travel outside of the state, he or she must tell an official assignee (court official) or may be arrested if deemed by the High Court to be leaving the state to avoid the consequences of bankruptcy. The cost of a PIA is likely to be less than the cost of bankruptcy due to court appearances, solicitor and counsel fees and advertising costs.

In summary, we do not currently believe that debtors will actively seek out bankruptcy over engagement with banks. The bankruptcy option is more public, disruptive and leaves an uncertain outcome for the principal private residence. However, any attempt to protect capital and delay loss realisation by banks could incentivise debtors to pursue bankruptcy as a more credible, visible alternative. This suggests that banks should simultaneously embrace the PIA legislation in tandem with forbearance measures for less-stressed delinquency cases.

## 7. Delinquent BTL properties pose a threat to property prices

### BTL repossessions will increase through the PIA process

- Repossessions of delinquent loans have been negligible in Ireland, providing artificial support to the Irish property market

A remarkable feature of the Irish house price crash is that despite sharp falls in house prices and rising arrears, the number of repossessions has been negligible. We believe prices in Ireland are now at long-run sustainable levels after a 60% fall from peak. However, the low level of transactions in the marketplace – only €2.1bn of mortgages for property purchase in 2011 versus the peak of €28bn in 2006 – does not give confidence that the residential property market is either fully-functioning or has yet found a floor. Moreover, the large number of delinquent properties that are being kept off the market poses the threat of further distressed sales should banks start to increase repossessions.

- But the PIA regime raises the prospect of far higher sales of repossessed BTL properties, potentially putting downward pressure on house prices

Debtor engagement in a PIA will keep the majority of delinquent owner occupier homes from hitting the property market. However, the same cannot be said of BTL properties. Banks may seek to avoid repossession and sales of BTL properties through forbearance measures, but it seems clear to us that through a PIA, BTL properties will be repossessed. This expectation of BTL repossessions also echoes calls from the Central Bank Governor earlier this year for banks to get more aggressive with BTL repossession.

### BTL arrears continue to grow at a faster pace than for owner occupier loans

The number of BTL mortgages in arrears across the covered banks by balance was 25.1% at end-2011. As we showed earlier, BTL arrears grew to over 2x the owner occupier rate of 10.8% at end-2011 – up from a ratio of just under 2x a year earlier. Macroeconomic factors will have pushed up on BTL arrears rates in a similar fashion to owner occupier loans. However, additional factors have pushed up on BTL arrears rates, including the diversion of rental income by some borrowers away from mortgage servicing, less emotional attachment to the property than with a family home and higher LTVs.

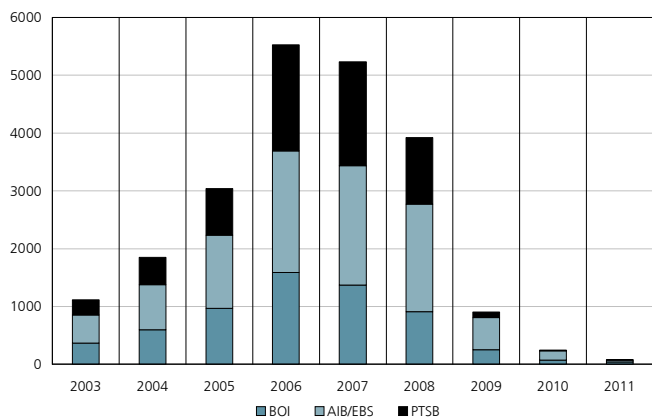
- In addition to macroeconomic factors, the switch of BTL loans from interest only to payments to cover both interest and principal has pushed up on arrears rates

However, these issues are compounded by the adjustment facing BTL borrowers as their mortgage contracts switch from paying interest only (IO) to paying principal and interest (P&I). This dynamic suggests that BTL arrears will continue to grow at a faster pace than owner occupier arrears. For both BKIR and ALBK, a typical BTL mortgage at origination was IO for a fixed period between three and five years. Thereafter, the mortgage would switch to paying P&I. Our analysis of the BKIR interim results suggests that the IO period is more likely to be five years, especially so for later vintage mortgages that have not yet faced the switch in repayment terms.

- BTL loans in H2 2007 and 2008 have yet to reach the five-year trigger point, where payment of principal and interest is required

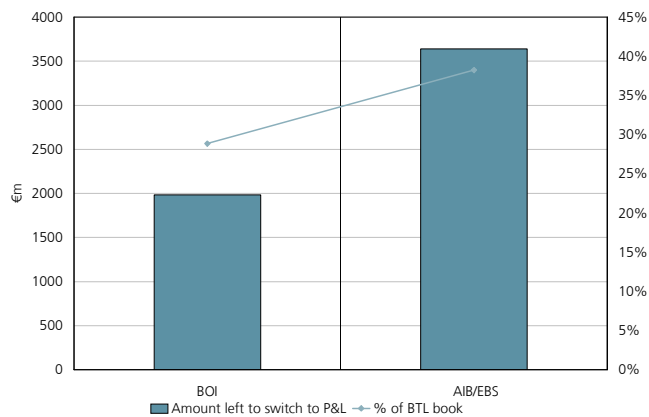
We estimate the respective banks' BTL originations by vintage in the chart below<sup>12</sup>. We can then construct flow analysis, which indicates (based on five year IO term) that BKIR and ALBK have a further €2bn (29% of BTL balances) and €3.6bn (38%) respectively of BTL mortgages outstanding yet to switch to P&I. These potentially vulnerable mortgage loans mainly comprise those originated in the second half of 2007 and in 2008 when BTL lending remained significant before the sharper decline in 2009.

Figure 16: Covered banks' BTL originations estimated



Source: Company accounts; IBF; Davy

Figure 17: Residual BTL balances subject to P&I switch



Source: Company accounts; IBF; Davy

- Efforts to restructure newly delinquent BTL loans appear to have been lacking

In the case of PTSB, there are well documented legal challenges from BTL borrowers who have argued against any move by the bank to enforce a P&I switch. As such, we would expect that the proportion of borrowers yet to see a P&I switch is much higher for PTSB. Consistent with this, the ratio of BTL to owner occupier arrears was the lowest for PTSB (among all the covered banks) at 1.73x at end-FY2011.

Our flow analysis throws up a concern regarding BTL borrowers' engagement with the banks. BKIR has disclosed that rent receivers have been appointed to 500 BTL properties – an estimated 10% of its delinquent BTL mortgage balances. In a scenario where a borrower was successfully paying IO but is unable to pay P&I, it is a win-win situation for both borrower and the bank to continue the IO arrangement as a forbearance option. However, in H1 2012, an estimated €685m of BKIR's BTL mortgages switched to P&I terms, which compares with a rise of only €178m in restructured BTL balances over the same period.

BKIR specifically highlighted the P&I switch as a significant driver of its BTL arrears balances. It is also worth noting that the restrictions imposed on banks with regards to contact of borrowers under the CCMA (Code of Conduct for Mortgage Arrears) apply only to owner occupier mortgages. Therefore banks should be able to actively engage with customers with visibility of the switchover date. Furthermore, banks should be able to quickly restructure mortgages where appropriate as, unlike owner occupier borrowers, BTL borrowers are not required to fill out a Standard Financials Statement (SFS).

<sup>12</sup> This is derived from their residential mortgage vintage analysis and applying BTL %s derived from the IBF mortgage data.

In summary, a significant factor over and above macroeconomic developments pushing up on arrears rates for the BTL sector has been the switch of mortgage contracts into P&I repayments. Our analysis suggests that this factor may continue to push up on BTL arrears up to the end of 2013 as BTL loans originated in H2 2007 and 2008 hit the trigger points associated with a shift from interest only to payments covering both principal and interest.

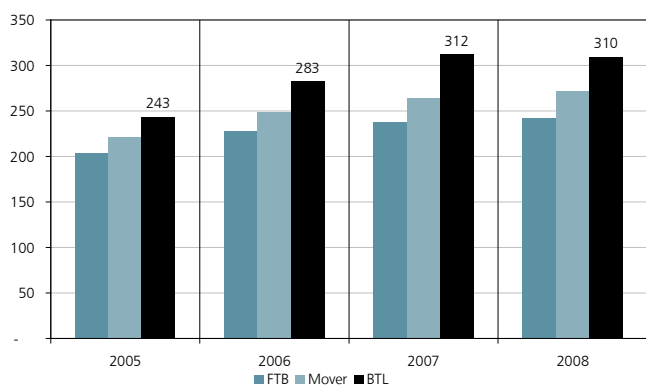
## Volume of delinquent BTL properties demands a balanced approach

Our forecast model indicates that owner occupier arrears +90 days will peak at 16.5%. Simply assuming the over 2x rate holds (owner occupier arrears rates relative to BTL arrears) would see BTL arrears peak at 38.4%. To estimate the quantum of potential BTL properties in distress that may be brought to market by Irish banks, we make the following assumptions:

- Total BTL properties of €30bn at end-Q1 2012 (including holiday/second homes), as reported by the Central Bank. Assuming 37.5% peak delinquency gives delinquent balances of €11.25bn.
  - IBF mortgage data show that average BTL draw-downs between 2005 and 2008 were consistently higher than principal home mortgages (first-time-buyers or movers) and averaged €285,000.
  - We assume an average delinquent balance of €250,000, below the 2005-2008 average, to account for some capital pay-down, in line with average delinquent BTL balances reported by BKIR in FY 2011.
  - Central Bank research has previously indicated that the ratio of BTL loans to properties is 1.14, which implies that the average mortgage debt per BTL property is €285,000 and at the peak may be 40,421 delinquent BTL properties.
  - The average LTV on delinquent BTL mortgages at FY 2011 was 128% based on a 47.2% fall in the CSO house price index.
  - A **60% PTT fall in house prices** indicates a 169% average LTV on delinquent BTL mortgages and a market worth of €6.82bn.
  - To clear this amount of property using mortgage finance (assume 80% LTV) represents 2.6x the level of mortgage finance in 2011.
  - A **65% PTT fall in house prices** indicates a 193% average LTV on delinquent BTL mortgages and a market worth of €6bn.
  - To clear this amount of property using mortgage finance (assume 80% LTV) represents 2.28x the level of mortgage finance in 2011.
- The key point here is that BTL properties with a current value of €6-7bn (depending on house price assumptions) may be brought to market should Irish banks begin to more aggressively repossess. These sales are more than twice the current level of mortgage finance. An oversupply of BTL properties would pose the risk of further residential property price falls.
- We estimate that there may be as many as 40,421 delinquent BTL properties
  - BTL properties with a current value of €6-7bn may be brought to market should Irish banks begin to more aggressively repossess. The oversupply of BTL properties would pose the risk of further house price falls.

This suggests that either mortgage lending will need to expand to clear the market or that the banks will resist efforts to liquidate their BTL portfolios and maintain forbearance on troubled loans. The pillar banks (ALBK and BKIR) account for the bulk of mortgage lending at present. ALBK has committed to €1bn of mortgage lending in 2012, which includes re-opening the EBS brand for new business, and BKIR has indicated a target of €1.5bn. These levels do not appear high enough to help the housing market absorb large-scale BTL sales without further sharp falls in residential property prices.

**Figure 18: Average mortgage draw-downs by product**



Source: IBF

**Table 26: BTL delinquency analysis**

Total BTL loans (Q1) €m	30,000
% delinquent +90days	38.4%
Delinquent balances €m	11,520
Avg. balance for BTL mortgage in arrears €k	250
Ratio of BTL loans to properties	1.14
Avg. mortgage debt per BTL property	285
Total delinquent BTL properties	40,421
Avg. LTV BTL NPL (FY11)	128%
Avg. LTV BTL NPL adjusted for 60% PTT	169%
Avg. LTV BTL NPL adjusted for 65% PTT	193%
Market worth (60% PTT) of BTL delinquent properties €m	6,819
Multiple of 2011 property purchase mortgages (80% LTV)	2.60
Market worth (65% PTT) of BTL delinquent properties €m	5,966
Multiple of 2011 property purchase mortgages (80% LTV)	2.28

Source: Davy; IBF; Bank annual reports

## Appointment of rent receivers to increase where BTL debtor engagement fails

An increased number of repossessions with resultant sales is desirable in our view to help unlock and add transparency to an illiquid housing market. This is most likely to happen from BTL property's involvement in the PIA process.

Banks have been unable to repossess properties as a consequence of enforced regulatory forbearance but also due to a legal obstacle, where banks have been unable to pursue a summary judgement against delinquent mortgages due to the repeal of the old process for repossession under Section 62 (7) of the Registration of Title Act 1964. In an oversight, its replacement (the Land and Conveyancing Reform Act) is only applicable to mortgages originated after the introduction of the act on December 1st 2009.

Recent legal developments, however, have facilitated the appointment of rent receivers to delinquent BTL properties. Despite the obstacle to repossession presented by the Dunne ruling, it has been clarified that this ruling does not override a bank's contractual right to appoint a receiver if such a condition was contained in the mortgage document. Banks are increasingly likely to therefore appoint receivers where BTL borrowers are unwilling to engage in a restructuring arrangement. It is

- Legal obstacles to appointing recent receivers, perhaps to sell properties, are less clear for the BTL sector

- Some repossessions will be required to ensure BTL borrowers begin paying down principal repayments in addition to interest

- But it will not be possible to liquidate the entire delinquent BTL portfolio, with weak mortgage lending holding back market demand

- The current stalemate of high Tier 1 capital ratios and provisions set against rising arrears rates and low repossessions cannot be expected to continue indefinitely

also a right of the receiver to sell the property, but we have not seen any evidence of this so far.

A combination of measured repossessions and the appointment of rent receivers may also serve to act as deterrents against any tactical delinquency on the part of borrowers. Banks have mentioned that the tactical delinquency evident in the latter part of last year/early this year has not been evident in the recent rise in new mortgage arrears.

However, mass repossessions could pose the threat of renewed falls in prices, an outcome that banks will seek to avoid. There is simply not enough mortgage lending to allow the market to absorb a large-scale liquidation of the banks' delinquent BLT portfolios. So the most likely outcome is that repossessions will rise but with rent receivers appointed to large swathes of the portfolio rather than banks realising large discounts as BTL properties are brought to the market.

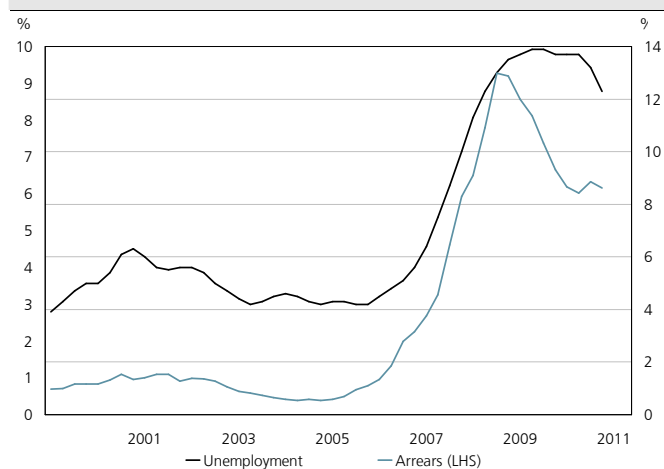
That said, the starting point is that the level of repossessions in Ireland has been negligible thus far. Larger numbers of repossessions, particularly for BTL loans in arrears, seem likely as the PIA regime is rolled out. This poses the threat of further falls in residential property prices. Subsequent sales may lead to bank losses in excess of those already provided for.

Overall, it may be desirable for banks to demonstrate that they can absorb resultant losses within their existing core Tier 1 capital. The current combination of high core Tier 1 capital ratios, set against further expected loan losses, has not helped Irish banks to regain market confidence. Absorption of these losses would leave these banks with sufficient but lower capital and provide greater certainty regarding the state of their mortgage books. Increased certainty would help banks to regain access to wholesale market funding and generate further equity interest.

## 8. Comparing Ireland's mortgage arrears to international episodes

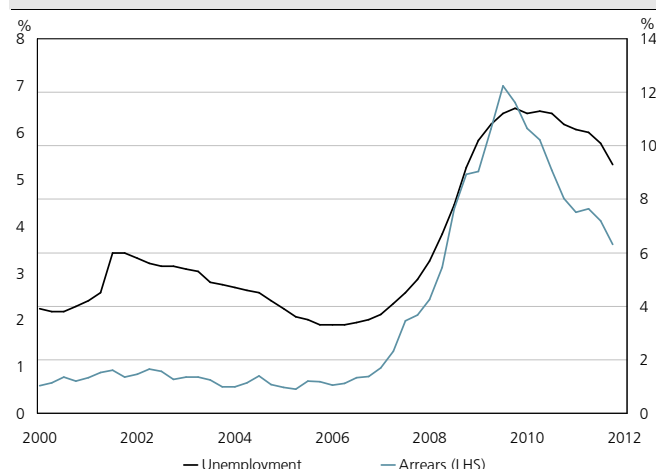
As a cross-check on our view of Ireland's mortgage arrears path, we briefly discuss developments in the US and Spain. The only comparable housing market bust of recent times to Ireland has been in the US. In Nevada, house price declines exceeded 55%, unemployment hit 14%, but arrears peaked at just 9.3% in Q4 2009. This compares to a national average of 17% PTT, unemployment peaking at 9.9% and arrears at 5%. The current Irish arrears rate of 10.2% and rising is now well above peak rates in comparable US housing busts.

**Figure 19: Development of arrears and unemployment in Nevada**



Source: Mortgage Bankers Association

**Figure 20: Development of arrears and unemployment in Florida**



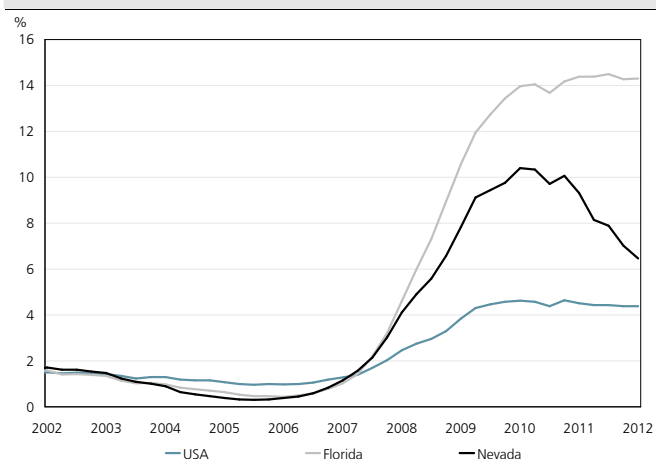
Source: Mortgage Bankers Association

### US – high foreclosure rate aids quicker resolution of delinquencies

A key difference between the US and Ireland is the number of foreclosures. In Ireland, 961 properties were foreclosed in Q1 2012, less than 1% of mortgages outstanding. In Nevada, the peak rate of foreclosures was 10.4% in Q1 2010. In Florida, the rate stands at 14.3%, haven fallen little from a peak of 14.4 in Q1 2011. Unemployment in this state peaked at 11.4% in Q1 2010, with house price declines of 42.5% to date.

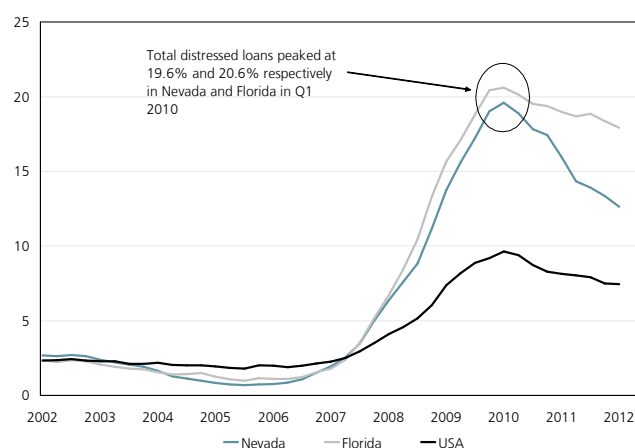
The sum of the stock of 90-day arrears and foreclosures peaked at 20.6% in Q1 2010 in Florida and 19.6% in Nevada. This compares with the current 10.2% for arrears greater than 90 days in Ireland or 15.2% for troubled mortgages encompassing both arrears and restructured mortgages. These rates were also well above the peak US average of 9.7% in Q1 2010. What is clear is that unemployment is the key driver of arrears in the US with the arrears and foreclosure rates peaking with unemployment in early 2010 as house prices only now begin to bottom out in 2012.

**Figure 21: Foreclosure rates in the US**



Source: Thomson Datastream

**Figure 22: Arrears plus foreclosures peaked at 20%**



Source: Thomson Datastream

However, the comparisons between the US and Ireland are limited, not least given the stark contrast between insolvency laws. The constrained ability of US lenders to pursue borrowers for losses is well documented, particularly the advent of 'jingle mail' with banks' only option to repossess the homes against which the loans were secured. The incentive for home owners in negative equity to default on their mortgages is perhaps reflected in the comparatively high foreclosure rate in many US states as evidence<sup>13</sup>.

While it is easy to cite the non-recourse model as the key driver of arrears and foreclosures in the US, there is conflicting evidence. A recent Federal Reserve study<sup>14</sup> found that only 11 states fully restrain the recourse available to lenders. Nevada and Florida, states with the largest rates of foreclosure, were surprisingly classed as 'recourse states' in terms of their legal framework. Of the non-recourse states, Arizona and California are the only states to have experienced significant house prices declines in the past five years.

**Table 27: Non-recourse states in the US**

Alaska	North Carolina
Arizona	North Dakota
California	Oregon
Iowa	Washington
Minnesota	Wisconsin
Montana	

Source: Ghent & Kudlyak (2009)

Evidently, other factors are also at play in driving up arrears and foreclosure rates in Nevada and Florida.

Many of the loans taken during the boom were of a sub-prime level. At peak in 2007, sub-prime loans accounted for 19.6% of the market in Nevada and 16.7% in Florida compared to a national peak of 14%. Of

<sup>13</sup> See <http://www.econ.umd.edu/documents/fore15r.pdf>

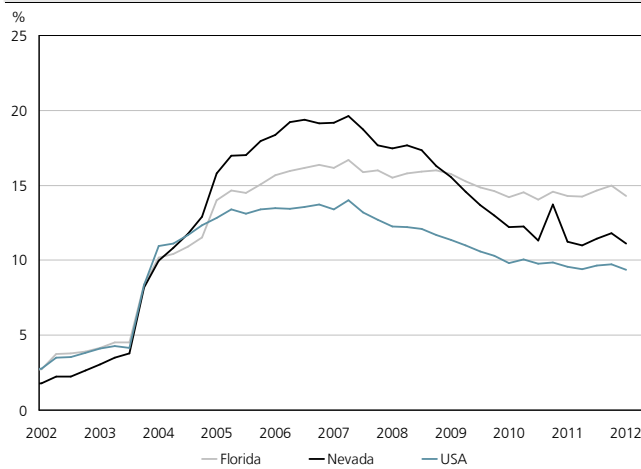
<sup>14</sup> See [http://www.fhfa.gov/webfiles/15051/website\\_ghent.pdf](http://www.fhfa.gov/webfiles/15051/website_ghent.pdf)



these sub-prime loans, 43% and 48% were in 90-day arrears or foreclosure in Nevada and Florida respectively compared to a national peak of 30.6% in Q4 2009. Sub-prime borrowers are usually of a lower credit rating, with few assets to chase, so in many cases the legal costs to a lender of pursuing the loans may outweigh any potential recoupment of losses despite the supposed scope for recourse in many US states.

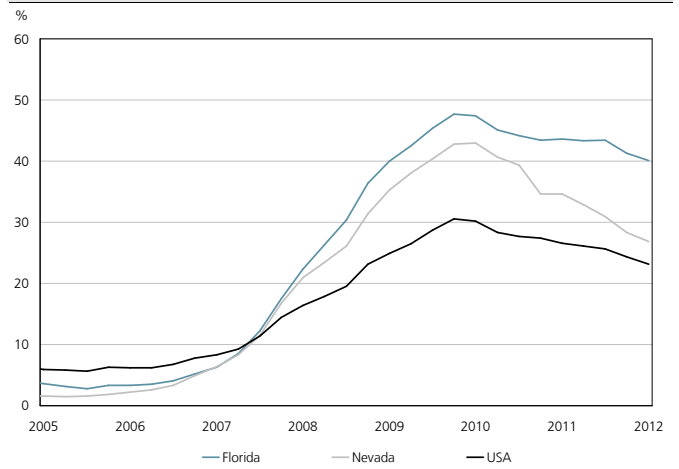
So, rather than strategic default by those in negative equity, stemming from non-recourse mortgages, the constant in both states appears to be borrowers' inability to repay loans, driven by high unemployment rates in each state (a similar situation to Ireland).

**Figure 23: Sub-prime loans as % of total mortgages**



Source: Mortgage Banker Association

**Figure 24: % of sub-prime loans in arrears or foreclosure**

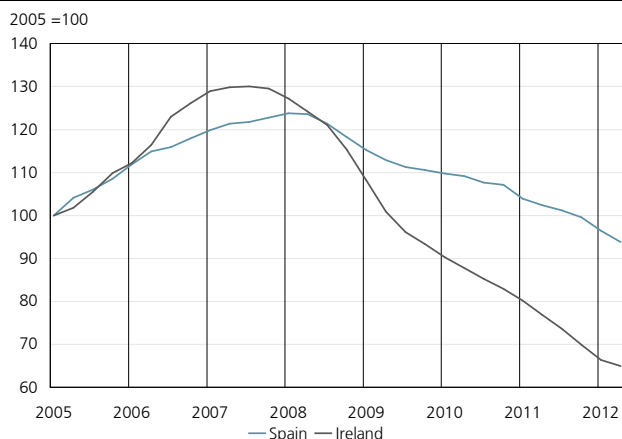


Source: Mortgage Bankers Association

### Spain – mortgage arrears remain at surprisingly low levels

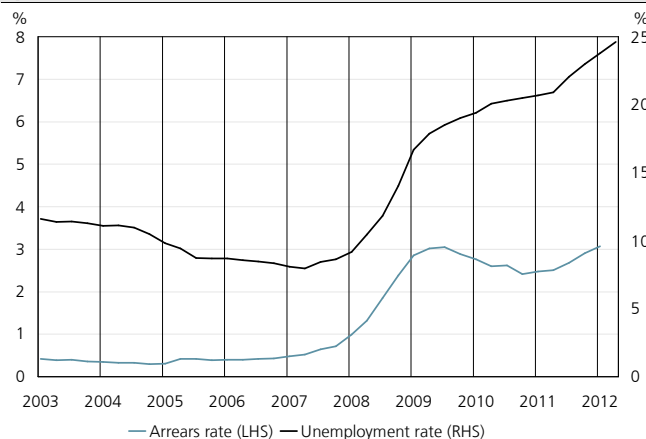
In contrast to Ireland, Spanish house prices have not fallen as far as expected since the turn of the market in 2007. The PTT fall in the Spanish market currently stands at just 22.1%, according to Bank of Spain's index. However, it is accepted that unemployment, not negative equity stemming from prices declines, is the main driver of mortgage arrears. With Europe's highest unemployment rate, standing at 23.8% in Q1, the arrears rate in Spain would be expected to be comparable to (if not greater than) Ireland's current 10.2% rate. This is not the case. Latest Bank of Spain figures indicate an arrears rate of just 3.07% in Q1 2012.

**Figure 25: Property declines less abrupt in Spain than in Ireland**



Source: Bank of Spain, CSO

**Figure 26: Evolution of arrears and unemployment in Spain**



Source: Thomson Datastream

Forbearance by lenders has masked losses in property markets thus far. However, latest stress tests published in June estimate future capital requirements of Spanish banks of up to €62bn<sup>15</sup>. Much of these losses are forecast to be property related. 41.6% of Spanish banks' loan exposure is to residential mortgages, equivalent to €600bn, with the stress test forecasting significant growth. The stress testing did, however, identify some mitigating factors specific to the Spanish mortgage book:

- LTVs are low, just 62% on average, compared to LTVs of over 100% on Irish loan books.
- Most mortgages (c.88%) relate to primary residences, providing an incentive to keep current on payments. Just 7% of mortgages relate to second homes and 5% to BTL. In Ireland, BTL accounts for c.24% of the mortgage book.
- Full recourse is available to Spanish lenders as personal guarantees are commonly given by borrowers or third parties for the full value of the mortgage. This provides a further incentive not to default on loans.
- Low interest rates have kept repayments down for borrowers with tracker mortgages.

A further reason recently proposed by Bankia CEO Alfredo Saenz is the culture of protecting property as a valuable asset and meeting mortgage repayments by obtaining financial aid from immediate family if a borrower becomes unemployed. While this may be the case in some instances, this assertion is impossible to quantify and justify as rising unemployment erodes borrowers' ability to service debts and savings are depleted. Indeed, RMBS data suggest a 90 day arrears rate upwards of 6% in many mortgage pools (see <http://www.edf-sg.com/securitisation-funds> for details of Spanish RMBS pools) with arrears topping 14% in some cases, while official statistics indicate an overall arrears rate of just 3% overall.

<sup>15</sup>See [http://www.bde.es/webbde/en/secciones/prensa/info\\_interes/informe\\_oliverwymane.pdf](http://www.bde.es/webbde/en/secciones/prensa/info_interes/informe_oliverwymane.pdf)

## 9. Mortgage losses and bank capital

### Review of PCAR assumptions for Irish mortgages

- Last years, PCAR base case stress test envisaged €5.7bn of mortgage losses for the covered Irish banks

- The adverse stress test assumed €9bn of mortgage book losses

- But Irish banks have now already made provisions in line with base case losses, so attention has focused on whether adverse case losses of €9bn will be realised

In last year's PCAR stress-testing exercise, a base case assumed a 54% peak-to-trough (PTT) fall in house prices and unemployment of 14%, leading to €5.7bn of mortgage losses – a 5.8% loss rate split between 4.7% for owner occupiers and 9.5% for BTL.

In the adverse scenario, it was assumed that house prices fall by 59% PTT, unemployment reaches 16% and interest rates rise by 125 basis points. Under this scenario, €9.0bn of mortgage book losses were projected – a 9.2% loss rate split between 7.6% for owner occupiers and 14.3% for the BTL sector<sup>16</sup>.

Irish banks had already achieved base case loss-estimates by end-2011. So attention has focused on whether Irish banks will realise the PCAR adverse case mortgage book losses. The three lenders – ALBK, BKIR and PTSB – had provisions of €5.1bn at end-2011 for future losses, with an additional €100m written off<sup>17</sup>. We expect the banks to make further provisions over the timeframe envisaged by PCAR (2011-2013). Central Bank and the Department of Finance officials have acknowledged losses are now running between the base and adverse scenarios.

**Table 28: Adverse case mortgage book losses**

		<i>ALBK</i>	<i>EBS</i>	<i>BKIR</i>	<i>PTSB</i>	<i>Total</i>
Owner occupier	CB 3-yr losses	1791	1164	1115	1598	5668
	%	8.9%	8.3%	5.3%	8.2%	7.6%
BTL	CB 3-yr losses	1216	216	901	996	3330
	%	16.5%	11.2%	12.7%	14.4%	14.3%
Irish mortgages	CB 3-yr losses	<b>3007</b>	<b>1380</b>	<b>2016</b>	<b>2594</b>	<b>8997</b>
	%	10.9%	8.7%	7.2%	9.9%	9.2%

Source: Central Bank

- But the timing of banks' recognition of losses will be delayed by the PIA, forbearance measures and assumptions on the fall in house prices

The timing of banks' loss recognition is uncertain. Accounting rules are based on 'incurred' rather than expected losses. It may be mid-2013 before the new personal insolvency regime is operational, which could potentially delay loss recognition by banks. In the interim, current and new advanced forbearance measures may also delay loss recognition.

Banks' provisioning charges will also see revisions as they acknowledge further falls in house prices. The covered banks currently expect 55% PTT declines. However, both Ulster Bank and NIB (Danske) indicated with their interim results that their expectation is now for house price declines of between 55% and 60%.

<sup>16</sup> For interest rates, the starting assumption was the Euribor curve, and the Central Bank's estimates were the 3-year losses, derived from Blackrock's lifetime losses.

<sup>17</sup> Between them, BKIR and PTSB had written off c.€100m (ALBK does not disclose its mortgage write-offs).

## Assumptions regarding mortgage loss modelling

In this section we update our mortgage book loan loss estimates for the covered banks and compare it to the €9bn PCAR adverse case estimate. In doing so, we need to make several key assumptions:

- the final PTT fall in residential property prices;
- the carry costs (legal costs, capitalised arrears) of liquidating loans in arrears;
- where arrears rates will peak, based on our macroeconomic model (and scenarios), discussed in Section 4;
- the proportion of 90 day arrears that are 'cured' and do not eventually fall into the 360 day category where losses are inevitable.

At end FY 2011, the covered banks had provided for €5.2bn of Irish residential mortgage losses, which represented coverage of 38% on €13.5bn of NPLs (14.4% of total). Each of the banks assumed a PTT decline in house prices of 55%, in line with the PCAR base scenario. We assume that house prices will eventually fall by 60-65% from their peak. A 60% PTT fall would see the weighted average LTV for non-performing mortgage loans increase to 163%. A 65% PTT decline would see the weighted average LTV for non-performing mortgages increase to 186%.

- We assume that house prices are likely to fall closer to 60-65% from their peak in our mortgage book loan loss estimates

On top of this, we model for carry costs – capitalised arrears, administration, legal fees, sales costs etc. We assume these costs amount to between 10% and 20% of the mortgage balance at origination. This would result in an aggregate loss rate on delinquent mortgages of 48%, where we assume a 60% PTT fall in house prices and 10% carry cost assumptions. When we change our assumptions, the aggregate loss rises to a 66% loss rate, based on a 65% PTT fall and a 20% carry cost.

Although it is too early to judge the outcome of either advanced forbearance restructurings or PIA resolutions, both outcomes would likely result in lower carry costs than under a repossession and sale scenario. So if PIAs are successful in restoring loan performance, they could have the benefit of reducing carry costs.

The covered banks stop accruing interest income on mortgage loans in arrears once they are classified as impaired (typically >90 days). BKIR does not capitalise arrears unless a debtor demonstrates that he or she can adhere to revised terms under a formal restructuring for a period of a year. BKIR's interim disclosures did not report any capitalised arrears restructurings. In comparison, capitalised interest restructurings accounted for 11.7% of formal restructurings by balance for ALBK in H1 and 8.5% for PTSB at FY2011. Specifically looking at capitalised interest in non-performing loans, it accounted for 7.2% and 2.6% by balance respectively. For now, with the exception of ALBK, capitalised arrears are not a large portion of the potential losses.

- We use our statistical estimated equations, together with economic scenarios, to forecast the 90-day arrears rate. This means slowly stabilising labour market conditions push down on arrears formation.
- We assume the 'cure rate' on owner-occupier arrears is 40%, and 0% for BTL loans in arrears
- Allsop auctions and evidence from RMBS securities point to loan losses in excess of the 60% fall in house prices that we assume

We assume 90-days arrears rates follow the scenarios set out in Section 4, based on our statistical models, and the alternate scenarios for employment and long-term unemployment going forward. As set out earlier, this means the 90-day arrears rate rises to 16.5% and 18.0% at peak in either case. So we assume that while the arrears rate increases, slowly stabilising labour market conditions lead to a slower pace of arrears formation. That said, clearly the movement in BTL mortgages from interest only to payments covering both interest and principal (see Section 7) poses an upside risk to our assumptions on arrears rates and banks' non-performing loans.

Loan modifications may be effective in curing delinquencies, particularly where there is an upturn in the borrower's financial circumstance (for example if he/she finds employment). But an increasing proportion of shorter-term delinquents are moving into the unsustainable category (>360 days). We apply a 40% cure rate ('base case') to owner occupier arrears >90 days based on our previous analysis of peak 360 days arrears versus peak 90 days arrears. This cure rate falls to 30% if we adopt our stressed macro assumptions. For BTL, given the downside risk in this category, we assume a 0% cure rate<sup>18</sup>.

In our view, the Allsop auctions already point towards the fact that house prices are down 60% from peak, which supports our high modelled loss rates. In addition, Blackrock assumed an average loss severity of 63% on repossession under PCAR based off PTT declines of 59% in a stress scenario and included carry costs of between 20% and 35%. Some of the public RMBS investor reports give informative detail on losses from repossessions. BKIR's Kildare RMBS calculates an estimated 67% loss on properties in possession. Ulster Bank's Celtic 11 RMBS highlights a 72% loss on repossessions since inception, with capitalised arrears representing on average 14% of the balance. PTSB's Fastnet 2 RMBS reports a weighted average loss of 60.24% since inception.

### Losses up to €1bn above PCAR adverse in our base case, €2.5bn in adverse

In our scenario modelling detailed in the table below, we arrive at cumulative provisions of €7.34bn, well below the PCAR adverse losses, in the most benign scenario (60% PTT and 10% carry cost). In the most severe scenario (65% PTT and 20% carry cost), we arrive at €9.966bn of provisions, 11% or €968m higher than the PCAR adverse scenario.

We forecast a peak NPL of 16.5% for owner occupier mortgages using our scrubbed RMBS dataset, which compared with a >90 days arrears rate of 11.56% at end-2011. To allow for bank-by-bank differences, we

<sup>18</sup> Therefore, for owner-occupier mortgages we apply our loss rate assumptions to the peak >90 days arrears number but adjust for the cure rate – multiply by (1-40%) – to get resultant loss provisions. For BTL mortgages, we apply our loss rate assumptions to the peak >90 days arrears number with no cure adjustment.

have arrived at sector losses using a bottom-up model. For each bank, we have increased its end-2011 owner occupier >90 days arrears number by the same proportion at which we forecast the scrubbed dataset to grow (1.43x or 16.5%/11.56%).

Our forecast model was based principally on owner occupier data and the same level of loan detail was not available for BTL mortgages. To arrive at total losses for the banks' mortgage books, we assume that the ratio of their peak BTL arrears to their peak owner occupier arrears keeps the same factor as at end-2011. This seems reasonable given the continued rollover of BTL mortgage terms from IO to P&I. Using this approach, we arrive at peak NPLs of 15.4% and peak BTL arrears of 36% (for bank-by-bank data, see Appendix 3).

**Table 29: Base scenario analysis of covered banks' loan losses**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	15.4%	40%	155%	45%	3,014	15.4%	40%	177%	53%	3,552
BTL	36.0%	0%	174%	52%	4,330	36.0%	0%	199%	60%	4,924
Total	20.4%		163%	48%	<b>7,344</b>	20.4%		186%	56%	<b>8,476</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	15.4%	40%	155%	55%	3,679	15.4%	40%	177%	63%	4,217
BTL	36.0%	0%	174%	62%	5,155	36.0%	0%	199%	70%	5,749
Total	20.4%		163%	58%	<b>8,835</b>	20.4%		186%	66%	<b>9,966</b>

Source: Davy; banks' annual reports

To illustrate the downside risk to the numbers from the downside risk to deterioration in our macro assumptions, we have applied the same methodology but to our higher adverse arrears numbers derived earlier – 17.8% >90 days peak forecast against our scrubbed Moody's dataset. An adverse set of forecasts is also appropriate in our view given the evidence of arrears development unexplained by macro developments. In the adverse scenario, our loan loss sensitivity would see losses of €8.5bn in the most benign scenario and losses of €11.5bn (€2.5bn or 28% in excess of PCAR adverse) in the most severe scenario (65% PTT, 20% carry cost).

**Table 30: Adverse scenario analysis of covered banks' loan losses**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	16.6%	30%	155%	45%	3,793	16.6%	30%	177%	53%	4,470
BTL	38.8%	0%	174%	52%	4,671	38.8%	0%	199%	60%	5,312
Total	22.0%		163%	48%	<b>8,464</b>	22.0%		186%	56%	<b>9,782</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	16.6%	30%	155%	55%	4,630	16.6%	30%	177%	63%	5,307
BTL	38.8%	0%	174%	62%	5,562	38.8%	0%	199%	70%	6,202
Total	22.0%		163%	58%	<b>10,192</b>	22.0%		186%	66%	<b>11,510</b>

Source: Davy; banks' annual reports

- Our central view is that mortgage book losses will exceed the €9bn envisaged in the adverse PCAR stress test

- The remaining €8.5bn of PLAR capital should be more than sufficient to cover mortgage book losses above the PCAR stress scenario

In summary, most of the scenarios outlined above are in excess of the €9bn of mortgage book losses estimated in the adverse PCAR scenario. However, all the risks are to the downside of the benign scenarios where losses are within the PCAR adverse. We believe house prices had already fallen by 60% by the beginning of 2011, and significant numbers of repossessions could push down house prices further. Finally, the 10% carry cost assumption is at the low end of the range. So we expect that final mortgage losses for the covered banks will be in excess of the €9bn envisaged in the PCAR adverse scenario.

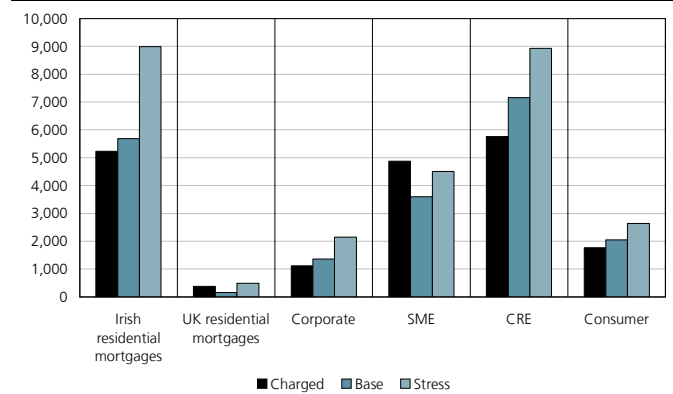
## Losses should be manageable within current capital resources

In our review of the covered banks one year after the PCAR exercise, we showed that despite loan losses close to the base stress case, bank capital levels remained high at an aggregate core tier 1 ratio of 17.4%. These high ratios remained, reflecting the €2.3bn of contingent equity capital required as part of the recapitalisation requirements. Furthermore, the banks have realised far lower discounts on asset sales as they have de-levered. The PLAR capital provided to realise the costs of asset sales amounted to €9.5bn, but just €1bn has been used. Any losses identified above in excess of PCAR stress should be seen in the context of the €8.5bn of remaining unused capital from the PLAR.

However, we will continue to review our forecast model given the advanced forbearance and insolvency developments. In addition, our forecasts are driven off macro-economic developments. Further significant increases in delinquencies caused by other reasons such as tactical delinquencies will not be captured. The banks have indicated that tactical delinquency was more evident in the latter part of last year and early this year but less so now. Widespread liquidation of delinquent BTL properties presents a risk to collateral values, but the banks should be able to control the pace of any increased supply. Credible advanced forbearance measures and PIA engagement are also necessary so that delinquent mortgage holders do not seek out the bankruptcy route as an alternative.

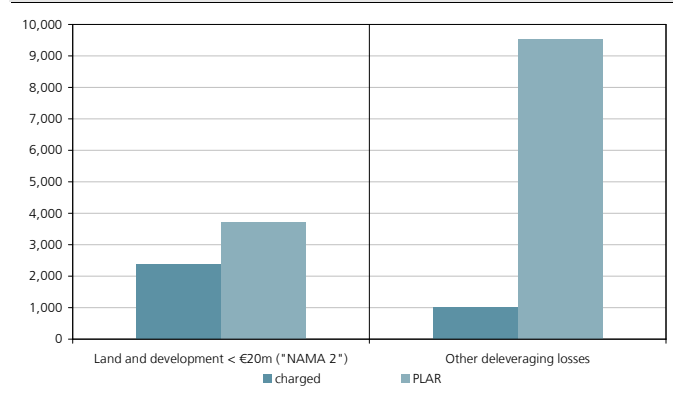
We will conclude a wholesale review of the banks' capital levels on completion of their interim results, when we can review the banks' Irish residential mortgage exposures alongside their other loan exposures. However, the banks' success in conserving capital in asset sales appears to have continued in the first half of the year, which gives us comfort. BKIR announced the completion of its €10bn disposal programme at an average discount of 8% versus 25% expected (Davy estimate). ALBK has, however, published its interim results and has now achieved two-thirds of its estimated €12bn sales target at a discount of 6.6% versus an expected 30% (Davy estimate).

**Figure 27: Covered banks' loan book provisions vs. PCAR base and adverse scenarios – FY2011**



Source: Davy; Central Bank; Banks' annual reports

**Figure 28: Covered banks' deleveraging losses vs. PLAR assumptions – FY2011**



Source: Davy; Central Bank; Banks' annual reports

### Lower capital ratios may be desirable

The covered banks currently have very high capital ratios. But behind these ratios investors are still concerned with rising arrears balances. Investors still question banks' ultimate mortgage book loan losses given uncertain collateral values, an illiquid housing market and the current extreme situation of negligible repossession despite high arrears rates on both owner occupier and BTL loans.

For this reason, investors do not equate the banks' high capital ratios with being well capitalised given the potential for significant unrealised losses. This is clearly an important factor holding back the Irish banks from regaining market confidence.

An increased level of repossessions and resultant sales, backed by increased mortgage funding, is desirable to help find a floor in property prices. Some increase in repossessions is warranted to exhibit that banks can absorb the resultant losses within their existing provisions and capital.

However, it will not be possible to liquidate the entire portfolio of delinquent BTL loans. There is simply not enough mortgage finance available to allow the market to absorb the €6-7bn value of delinquent BTL properties, based on current market prices, without further substantial declines in residential property prices.

A credible roll-out of advanced forbearance measures and PIA restructurings is also desirable to show that banks can work through the mortgage arrears difficulties. Impractical forbearance options may delay loss recognition and protect capital ratios in the short term, but this tactic of stalling will further delay the banks' return to profitability. Banks need to demonstrate that they can deal with unsustainable mortgages through long-term solutions. Visibility of this, which will result in lower capital ratios, is needed in our view.

From a macroeconomic perspective, the least desirable outcome would be for banks to maintain high core tier 1 ratios but for unsustainable loans to remain unresolved. In this case, Irish banks are unlikely to be able to access wholesale funding at sufficiently low rates to help profitability and facilitate a recovery in lending growth to the real economy.



## Appendix 1: Covered banks' restructured mortgages

**Table A1: Covered banks' restructured mortgages (end-2011)**

	<i>Loans not in default</i>		<i>Loans &gt;90days/ impaired</i>		<i>All loans</i>	
	€m	Number	€m	Number	€m	Number
<b>ALBK</b>						
<b>Owner occupied (OO)</b>						
Interest only	1855	10091	665	3351	2520	13442
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	126	763	58	251	184	1014
Term extension	483	4517	41	447	524	4964
Other	320	1987	237	1204	557	3191
<b>Total OO</b>	<b>2784</b>	<b>17358</b>	<b>1001</b>	<b>5253</b>	<b>3785</b>	<b>22611</b>
<b>BTL</b>						
Interest only	1046	4819	810	2547	1856	7366
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	70	316	29	107	99	423
Term extension	117	783	15	89	132	872
Other	85	340	197	654	282	994
<b>Total BTL</b>	<b>1318</b>	<b>6258</b>	<b>1051</b>	<b>3397</b>	<b>2369</b>	<b>9655</b>
<b>OO &amp; BTL</b>						
Interest only	2901	14910	1475	5898	4376	20808
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	196	1079	87	358	283	1437
Term extension	600	5300	56	536	656	5836
Other	405	2327	434	1858	839	4185
<b>Total</b>	<b>4102</b>	<b>23616</b>	<b>2052</b>	<b>8650</b>	<b>6154</b>	<b>32266</b>
<b>As percentage of mortgages</b>		<b>9.20%</b>		<b>3.40%</b>	<b>14.80%</b>	<b>12.50%</b>
<b>BKIR</b>						
<b>Owner occupied (OO)</b>						
Interest only	519	3415	200	1230	719	4645
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	261	1228	29	114	290	1342
Term Extension	191	2162	15	116	206	2278
Other	28	176	5	36	33	212
<b>Total OO</b>	<b>999</b>	<b>6981</b>	<b>249</b>	<b>1496</b>	<b>1248</b>	<b>8477</b>
<b>BTL</b>						
Interest only	209	1030	65	310	274	1340
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	185	796	23	48	208	844
Term extension	75	517	13	49	88	566
Other	1	4	0	0	1	4
<b>Total BTL</b>	<b>470</b>	<b>2347</b>	<b>101</b>	<b>407</b>	<b>571</b>	<b>2754</b>
<b>OO &amp; BTL</b>						
Interest only	728	4445	265	1540	993	5985
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	446	2024	52	162	498	2186
Term extension	266	2679	28	165	294	2844
Other	29	180	5	36	34	216
<b>Total OO &amp; BTL</b>	<b>1469</b>	<b>9328</b>	<b>350</b>	<b>1903</b>	<b>1819</b>	<b>11231</b>
<b>As percentage of mortgages</b>		<b>4.70%</b>		<b>1.00%</b>	<b>6.50%</b>	<b>5.60%</b>

**Table A1 continued**

	<i>Loans not in default</i>		<i>Loans &gt;90days/ impaired</i>		<i>All loans</i>	
	<i>€m</i>	<i>Number</i>	<i>€m</i>	<i>Number</i>	<i>€m</i>	<i>Number</i>
<b>PTSB</b>						
<b>Owner occupied (OO)</b>						
Interest only	260	1659	66	374	326	2033
Reduced payment (< int only)	376	1995	110	548	486	2543
Reduced payment (> int only)	654	4473	217	1267	871	5740
Term extension	82	878	16	144	98	1022
Other	202	1368	115	717	317	2085
Total OO	1574	10373	524	3050	2098	13423
<b>BTL</b>						
Interest only	4	22	2	6	6	28
Reduced payment (< int only)	2	7	0	3	2	10
Reduced payment (> int only)	45	135	14	35	59	170
Term extension	18	98	3	17	21	115
Other	98	214	47	116	145	330
Total BTL	167	476	66	177	233	653
<b>OO &amp; BTL</b>						
Interest only	264	1681	68	380	332	2061
Reduced payment (< int only)	378	2002	110	551	488	2553
Reduced payment (> int only)	699	4608	231	1302	930	5910
Term extension	100	976	19	161	119	1137
Other	300	1582	162	833	462	2415
Total OO & BTL	1741	10849	590	3227	2331	14076
As percentage of mortgages		5.50%		1.60%	8.40%	7.10%

Source: Company reports

**Table A1.2: Covered banks' restructured mortgages (H1 2012)**

	<i>Loans not in default</i>		<i>Loans &gt;90days/ impaired</i>		<i>All loans</i>	
<b>ALBK</b>						
<b>Owner occupied (OO)</b>						
Interest only	8916	1539	4284	857	13200	2396
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	925	157	578	138	1503	295
Term extension	4994	526	629	59	5623	585
Other	1792	267	1776	339	3568	606
<b>Total OO</b>	<b>16627</b>	<b>2489</b>	<b>7267</b>	<b>1393</b>	<b>23894</b>	<b>3882</b>
<b>BTL</b>						
Interest only	3924	818	3215	969	7139	1787
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	415	90	342	81	757	171
Term extension	853	119	99	18	952	137
Other	463	97	1011	302	1474	399
<b>Total BTL</b>	<b>5655</b>	<b>1124</b>	<b>4667</b>	<b>1370</b>	<b>10322</b>	<b>2494</b>
<b>OO &amp; BTL</b>						
Interest only	12840	2357	7499	1826	20339	4183
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	1340	247	920	219	2260	466
Term extension	5847	645	728	77	6575	722
Other	2255	364	2787	641	5042	1005
<b>Total</b>	<b>22282</b>	<b>3613</b>	<b>11934</b>	<b>2763</b>	<b>34216</b>	<b>6376</b>
<b>As percentage of mortgages</b>					<b>na</b>	<b>15.5%</b>
<b>BKIR</b>						
	<b>€m</b>	<b>Number</b>	<b>€m</b>	<b>Number</b>	<b>€m</b>	<b>Number</b>
<b>Owner occupied (OO)</b>						
Interest only	658	4386	405	2579	1063	6965
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	375	1950	91	428	466	2378
Term Extension	198	2267	19	176	217	2443
Other	35	216	18	120	53	336
<b>Total OO</b>	<b>1266</b>	<b>8819</b>	<b>533</b>	<b>3303</b>	<b>1799</b>	<b>12122</b>
<b>BTL</b>						
Interest only	247	1241	116	627	363	1868
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	243	1083	46	163	289	1246
Term extension	76	539	19	70	95	609
Other	1	6	1	10	2	16
<b>Total BTL</b>	<b>567</b>	<b>2869</b>	<b>182</b>	<b>870</b>	<b>749</b>	<b>3739</b>
<b>OO &amp; BTL</b>						
Interest only	905	5627	521	3206	1426	8833
Reduced payment (< int only)	0	0	0	0	0	0
Reduced payment (> int only)	618	3033	137	591	755	3624
Term extension	274	2806	38	246	312	3052
Other	36	222	19	130	55	352
<b>Total OO &amp; BTL</b>	<b>1833</b>	<b>11688</b>	<b>715</b>	<b>4173</b>	<b>2548</b>	<b>15861</b>
<b>As percentage of mortgages</b>					<b>9.24%</b>	<b>8.01%</b>

Source: Company reports

## Appendix 2: Vintage analysis of Irish mortgage books

**Table A2.1: Vintage analysis of Irish mortgage books (end-2011)**

	<i>Mortgages</i> €m	<i>Number</i>	<i>Average</i> <i>mortgage</i>	<i>Arrears</i> €m	<i>Arrears %</i> <i>By €m</i>	<i>Arrears</i> <i>Number</i>	<i>Arrears %</i> <i>Number</i>
<b>ALBK</b>							
1996/before	298	11054	27	35	11.70%	972	8.80%
1997	134	4091	32.8	16	11.90%	343	8.40%
1998	215	4895	43.9	30	14.00%	414	8.50%
1999	334	6276	53.2	45	13.50%	555	8.80%
2000	478	7126	67.1	58	12.10%	580	8.10%
2001	611	7473	81.8	72	11.80%	661	8.80%
2002	1221	12277	99.5	144	11.80%	1061	8.60%
2003	1964	16526	118.8	262	13.30%	1559	9.40%
2004	3116	21326	146.1	452	14.50%	2088	9.80%
2005	4874	27582	176.7	838	17.20%	3078	11.20%
2006	7264	34373	211.3	1401	19.30%	4451	12.90%
2007	7129	32836	217.1	1290	18.10%	4219	12.80%
2008	6642	30688	216.4	1032	15.50%	3220	10.50%
2009	3983	21559	184.7	297	7.50%	1101	5.10%
2010	2629	15110	174	64	2.40%	272	1.80%
2011	775	4869	159.2	2	0.30%	8	0.20%
Total	41667	258061	161.5	6038	14.50%	24582	9.50%
<b>BKIR</b>							
1996/before	123	6841	18	8	6.50%	356	5.20%
1997	67	2601	25.8	5	7.50%	132	5.10%
1998	112	3475	32.2	8	7.10%	178	5.10%
1999	200	4862	41.1	14	7.00%	239	4.90%
2000	353	6584	53.6	25	7.10%	348	5.30%
2001	492	7417	66.3	32	6.50%	403	5.40%
2002	907	10903	83.2	68	7.50%	599	5.50%
2003	1506	14751	102.1	138	9.20%	965	6.50%
2004	2457	19239	127.7	242	9.80%	1312	6.80%
2005	3814	24510	155.6	399	10.50%	1864	7.60%
2006	5572	29579	188.4	771	13.80%	2933	9.90%
2007	4805	23981	200.4	649	13.50%	2331	9.70%
2008	3315	17577	188.6	303	9.10%	1109	6.30%
2009	1816	11731	154.8	44	2.40%	260	2.20%
2010	1278	7921	161.3	3	0.20%	30	0.40%
2011	1037	6906	150.2	0	0.00%	3	0.00%
Total	27854	198878	140.1	2709	9.70%	13062	6.60%
<b>PTSB</b>							
				<b>Estimate</b>	<b>Estimate</b>	<b>Estimate</b>	<b>Estimate</b>
1996/before	125	7668	16.3	8	6.40%	383	5.00%
1997	64	2716	23.6	0	0.00%	136	5.00%
1998	103	3356	30.7	8	7.80%	168	5.00%
1999	197	5036	39.1	15	7.60%	252	5.00%
2000	303	6180	49	24	7.90%	371	6.00%
2001	366	6101	60	24	6.60%	366	7.00%
2002	601	7904	76	42	7.00%	553	7.00%
2003	1050	11574	90.7	108	10.30%	810	7.00%
2004	1883	15910	118.4	202	10.70%	1273	8.00%
2005	3085	20846	148	372	12.10%	1876	9.00%
2006	6317	31182	202.6	1140	18.00%	4734	15.20%
2007	6193	27364	226.3	1369	22.10%	5360	19.60%
2008	4116	19663	209.3	977	23.70%	3993	20.30%
2009	683	5196	131.4	85	12.50%	522	10.00%
2010	186	1817	102.4	4	2.20%	18	1.00%
2011	147	1293	113.7	0	0.00%	2	0.20%
Total	25419	173806	146.2	4378	17.20%	20816	12.00%

Source: Company reports

**Table A2.2: Aggregate vintage analysis of mortgages (ALBK/EBS; BKIR; PTSB)**

	<i>Mortgages €m</i>	<i>Number</i>	<i>Average mortgage</i>	<i>Arrears €m</i>	<i>Arrears % By €m</i>	<i>Arrears Number</i>	<i>Arrears % Number</i>
<b>Aggregate</b>							
1996/before	546	25563	21.4	51	9.3%	1711	6.7%
1997	265	9408	28.2	21	7.9%	611	6.5%
1998	430	11726	36.7	46	10.7%	760	6.5%
1999	731	16174	45.2	74	10.1%	1046	6.5%
2000	1134	19890	57.0	107	9.4%	1299	6.5%
2001	1469	20991	70.0	128	8.7%	1430	6.8%
2002	2729	31084	87.8	254	9.3%	2213	7.1%
2003	4520	42851	105.5	508	11.2%	3334	7.8%
2004	7456	56475	132.0	896	12.0%	4673	8.3%
2005	11773	72938	161.4	1609	13.7%	6818	9.3%
2006	19153	95134	201.3	3312	17.3%	12118	12.7%
2007	18127	84181	215.3	3308	18.2%	11910	14.1%
2008	14073	67928	207.2	2312	16.4%	8322	12.3%
<b>2006-2009</b>	<b>51353</b>	<b>247243</b>	<b>207.7</b>	<b>8932</b>	<b>17.4%</b>	<b>32350</b>	<b>13.1%</b>
<b>% of total</b>	<b>54%</b>	<b>39%</b>		<b>68%</b>			
2009	6482	38486	168.4	426.4	6.6%	1883	4.9%
2010	4093	24848	164.7	69.8	1.7%	320	1.3%
2011	1959	13068	149.9	2	0.1%	12	0.1%
<b>Total</b>	<b>94940</b>	<b>630745</b>	<b>150.5</b>	<b>13125</b>	<b>13.8%</b>	<b>58460</b>	<b>9.3%</b>

Source: Company reports

## Appendix 3: Bank-by-bank loan loss estimates

**Table A3.1: Base scenario analysis of covered banks' loan losses - Bank of Ireland**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	10.6%	40%	160%	47%	627	10.6%	40%	183%	55%	730
BTL	24.3%	0%	170%	51%	871	24.3%	0%	195%	59%	995
<b>Total</b>	<b>14.0%</b>		<b>162%</b>	<b>48%</b>	<b>1,497</b>	<b>14.0%</b>		<b>186%</b>	<b>56%</b>	<b>1,725</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	10.6%	40%	160%	57%	759	10.6%	40%	183%	65%	862
BTL	24.3%	0%	170%	61%	1,041	24.3%	0%	195%	69%	1,165
<b>Total</b>	<b>14.0%</b>		<b>162%</b>	<b>58%</b>	<b>1,799</b>	<b>14.0%</b>		<b>186%</b>	<b>66%</b>	<b>2,027</b>

Source: Davy; banks' annual reports

**Table A3.2: Base scenario analysis of covered banks' loan losses - Allied Irish Banks**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	15.4%	40%	148%	42%	1,260	15.4%	40%	169%	51%	1,511
BTL	44.7%	0%	170%	51%	2,181	44.7%	0%	195%	59%	2,493
<b>Total</b>	<b>22.1%</b>		<b>153%</b>	<b>44%</b>	<b>3,440</b>	<b>22.1%</b>		<b>175%</b>	<b>53%</b>	<b>4,004</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	15.4%	40%	148%	52%	1,557	15.4%	40%	169%	61%	1,808
BTL	44.7%	0%	170%	61%	2,606	44.7%	0%	195%	69%	2,918
<b>Total</b>	<b>22.1%</b>		<b>153%</b>	<b>54%</b>	<b>4,163</b>	<b>22.1%</b>		<b>175%</b>	<b>63%</b>	<b>4,727</b>

Source: Davy; banks' annual reports

**Table A3.3: Base scenario analysis of covered banks' loan losses - permanent TSB**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	20.7%	40%	161%	48%	1,128	20.7%	40%	184%	56%	1,311
BTL	35.7%	0%	183%	55%	1,278	35.7%	0%	210%	62%	1,435
<b>Total</b>	<b>24.5%</b>		<b>167%</b>	<b>50%</b>	<b>2,406</b>	<b>24.5%</b>		<b>191%</b>	<b>57%</b>	<b>2,746</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	20.7%	40%	161%	58%	1,363	20.7%	40%	184%	66%	1,546
BTL	35.7%	0%	183%	65%	1,509	35.7%	0%	210%	72%	1,666
<b>Total</b>	<b>24.5%</b>		<b>167%</b>	<b>60%</b>	<b>2,872</b>	<b>24.5%</b>		<b>191%</b>	<b>67%</b>	<b>3,212</b>

Source: Davy; banks' annual reports

**Table A3.4: Adverse scenario analysis of covered banks' loan losses - Bank of Ireland\***

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	11.4%	30%	160%	47%	789	11.4%	30%	183%	55%	919
BTL	26.2%	0%	170%	51%	939	26.2%	0%	195%	59%	1,074
Total	15.1%		162%	48%	<b>1,728</b>	15.1%		186%	56%	<b>1,993</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	11.4%	30%	160%	57%	955	11.4%	30%	183%	65%	1,085
BTL	26.2%	0%	170%	61%	1,123	26.2%	0%	195%	69%	1,257
Total	15.1%		162%	58%	<b>2,078</b>	15.1%		186%	66%	<b>2,342</b>

Source: Davy; banks' annual reports

\* Our recently revised forecasts for BKIR incorporate Irish mortgage losses of €2.15bn (previously €1.9bn), the mid-point of our two 65% PTT house price decline scenarios.

**Table A3.5: Adverse scenario analysis of covered banks' loan losses - Allied Irish Banks**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	16.6%	30%	148%	42%	1,585	16.6%	30%	169%	51%	1,902
BTL	48.2%	0%	170%	51%	2,353	48.2%	0%	195%	59%	2,690
Total	23.8%		153%	44%	<b>3,938</b>	16.6%	30%	175%	53%	<b>4,591</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	16.6%	30%	148%	52%	1,960	16.6%	30%	169%	61%	2,276
BTL	48.2%	0%	170%	61%	2,812	48.2%	0%	195%	69%	3,148
Total	23.8%		153%	54%	<b>4,771</b>	23.8%		175%	63%	<b>5,424</b>

Source: Davy; banks' annual reports

**Table A3.6: Adverse scenario analysis of covered banks' loan losses - permanent TSB**

	60% PTT house price decline/10% carry cost					65% PTT house price decline/10% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	22.3%	30%	161%	48%	1,420	22.3%	30%	184%	56%	1,650
BTL	38.5%	0%	183%	55%	1,379	38.5%	0%	210%	62%	1,548
Total	26.4%		167%	50%	<b>2,799</b>	26.4%		191%	57%	<b>3,198</b>

	60% PTT house price decline/20% carry cost					65% PTT house price decline/20% carry cost				
	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions	Peak NPLs	Cure rate	wtd. avg NPL LTV	Aggregate loan loss	BS provisions
OO	22.3%	30%	161%	58%	1,716	22.3%	30%	184%	66%	1,946
BTL	38.5%	0%	183%	65%	1,628	38.5%	0%	210%	72%	1,6797
Total	26.4%		167%	60%	<b>3,344</b>	26.4%		191%	67%	<b>3,943</b>

Source: Davy; banks' annual reports

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