August 29th 2005

Davy Equity Research

Irish banks

Irish banks party on...

but is a hangover likely?

- Over the past ten years, private sector credit in Ireland has increased more than six-fold and is still growing at over 26%. Given that Ireland's "catch up" phase is supposed to be over, we ask what is going on and should we be worried?
- Measured against GNP, Ireland now ranks as one of the most indebted countries in the eurozone, but such statistics do not tell the whole story. Personal debt/disposable income is heading for 140%, but household net assets have gone from €88bn to over €470bn in ten years, while low interest rates have supported affordability.
- However, looking at mortgage credit criteria, we think there are signs of some weakening. Three banks are now offering a 100% LTV product, while posing as a FTB couple with an income of €60k, we were offered a mortgage of up to €360k (repayments 37% of NDI over 30 years).
- So is this rising debt affordable? With interest rates and unemployment expected to remain low, we think the answer is yes, for most people, though credit growth needs to slow from its current stellar pace.

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Scott Rankin
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- Measured against GNP, Ireland now ranks as one of the most indebted countries in the eurozone, but such statistics do not tell the whole story. Personal debt/disposable income is heading for 140%, but household net assets have gone from €88bn to over €470bn in ten years, while low interest rates have supported affordability.

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- So is this rising debt affordable? With interest rates and unemployment expected to remain low, we think the answer is yes, for most people, though credit growth needs to slow from its current stellar pace.

Disclosures

Davy is part of Bank of Ireland Group
Davy acts as stockbroker to Anglo Irish Bank, Bank of Ireland and Irish Life & Permanent
Please see full disclosures page inside back cover

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Introduction

Over the past ten years private sector credit (PSC) in Ireland has increased more than six fold to over €200bn. Having decelerated during 2001/2 PSC growth is back above 26%. Given that Ireland's "catch up" phase is supposed to be over, we ask the question, what is going on and should we be worried?

As a % of GDP, Irish PSC has increased from 65% in 1994 to 136% in 2004 and has long passed the eurozone average of 107%. Using our preferred (PSC-IFSC)/GNP measure which adjusts for distortions within the Irish data, Ireland stands at 147%. Moreover it ranks as the third most indebted country in the eurozone and could be headed for number one spot by end 2006.

However, such statistics do not tell the whole story. Take the personal sector—personal debt/disposable income may be headed for 140% by the end of this year, but when deposits are netted out, indebtedness is under half this level while net assets have gone from €88bn a decade ago to over €470bn, reflecting rising house prices.

In the mortgage market two new trends have supported affordability—increased availability of interest only loans and term extension in particular. But given that perhaps 80% of FTB's are taking out loans with terms of 30 years or more, we think the former will be a less powerful driver of loan demand in the future.

Looking at mortgage credit criteria, we think there are signs of some weakening. First Active is now offering a 100% LTV product to first time buyers while Permanent TSB and Bank of Ireland have followed suit. We also think repayment criteria may be starting to stretch and we would be concerned about a willingness to bend the rules to "do the deal". Posing as a FTB couple with a combined income of €60k (less than average earnings for each), we were offered up to 6x income which equates to 37% of joint disposable income (30 year term).

So is this rising debt affordable? With interest rates and unemployment expected to remain low, we think the answer is yes, for most people, though credit growth needs to slow from its current stellar pace. In the event of asset quality problems down the road, we take comfort from the fact that the Irish banks are so profitable—we estimate that if bad debts were to double at each bank, PBT would fall by just 5% at ANGL, 7% at ALBK and Permanent TSB (less than 3% for IPM as a group) and 9% at BKIR.

Summary

Over the ten-year period 1994-2004, private sector credit (PSC) in Ireland has increased more than six fold to over €200bn. This expansion helped finance a more than three fold increase in the value of economic output. Having decelerated from a peak of over 30% during early 2000 to a more "normal" range of 10–15% during much of 2001/2, PSC growth has accelerated markedly again and has remained stubbornly above 25% since mid-2004. This has prompted us to ask the question what is going on and should we be worried?

Measured as a % of GDP, Irish PSC has increased from 65% in 1994 to 136% in 2004, and as with many other statistics, Ireland has closed the gap with its European neighbours. Using our preferred (PSC-IFSC)/GNP measure which adjusts for distortions within the Irish data (e.g. lending to non-bank companies in the IFSC and transfer pricing which boosts the GDP figure), Ireland's figure is 147%. Moreover it now ranks as the third most indebted country in the eurozone and we estimate that it could be headed for number one spot by the end of next year, if current trends persist.

However such statistics do not tell the whole story. Take the personal sector—personal debt/disposable income may be headed for 140% this year, but when deposits are netted out, indebtedness is less than half this level (50% at end 2004). It was actually only towards the end of 1998 that Irish households in aggregate moved to a net debt position.

On the corporate side one can make the same point. If we look at domestically sourced bank debt (banks borrow overseas and on the capital markets, but this is difficult to track), corporate indebtedness reached 49% of GDP last year versus nearer 25% in 1995 but on a net basis we estimate it was a much lower 25% of GDP up from a mid-high single digit percentage 10 years ago.

Within the corporate sector, real estate lending is showing the fastest growth by far. Growth in construction lending was 56.6%y/y in the year to March 2004, while real estate lending expanded at 36.6 %y/y. In fact of the growth in total credit in the year to March, 75% was property related, 10% of which was construction, 18% real estate activities and 47% residential mortgages.

But what is driving credit growth at the moment and why is it still growing at a 25%+ pace today given that Ireland's supposed "catch-up" phase is largely over? One explanation that resonates with us was posited by a bank CEO—he characterised what is going on as an "upgrading of Ireland's entire commercial infrastructure" to cater for a huge expansion in the domestic workforce and wealth. In other words not only do these people need to be housed but they need shopping centres, recreational and transport facilities etc.

In the mortgage market, two new trends that have helped support affordability in the past couple of years are term extension and the increased availability of interest only loans. Pushing out the term of a loan, helps a borrower pass a bank's NDI rule (i.e. monthly repayments must not be more than a certain percentage of disposable income), but given that the majority of first time buyers are taking out loans with terms of 30 years and more, we think term extension will be a less powerful driver of loan demand in the future.

Looking at mortgage credit criteria, we think there are signs of some weakening. LTV's have generally been well behaved over the past few years but First Active (part of RBS) recently broke ranks and is now offering a 100% LTV product aimed at first time buyers while Permanent TSB and Bank of Ireland have followed suit.

We also think repayment criteria may be starting to stretch a little and we would be concerned about firms (be they sales people within those firms or brokers) willingness to bend the rules to "do the deal". Posing as a first time buyer couple with a combined income of €60k (which is less than average earnings for each),

we were offered loans equivalent to 5–5.2x income from a number of banks and brokers. However we got 6x income (€360k) from one who also suggested we claim that we would rent a room in order to boost our application's chances with their auditors. A loan of €360k is the equivalent of 37% of joint net disposable income over a 30 year term (rate of 3.1%) which is very high for such earners (if the loan was over the traditional 20 year term the NDI % would be nearer 47%).

So is this rising debt affordable? With interest rates and unemployment expected to remain low, we think the answer is yes for most people, though credit growth needs to slow from its current stellar pace. Average economy wide affordability metrics produced by the banks and ourselves do not suggest we have an imminent problem in the personal sector though inevitably it is the person at the margin who is most likely to encounter financial difficulties. For instance a "typical" FTB couple in Ireland would have 20% more residual income (i.e after paying their mortgage) today in real terms than they did in 2000 despite the rise in house prices over the period.

Mortgage debt in Ireland also represents the vast majority of outstanding personal debt (c.80%) and this proportion has not moved much in recent years. The figure for the eurozone at the end of 2004 was 68%. This suggests that most of the rise in personal debt in Ireland has been used to purchase assets. Such lending is by definition less risky from the point of view of both probability of default and loss in the event of default. Moreover such has been the rise in Irish house prices that the net asset position of Irish households (value of housing stock+personal deposits - personal debt) has gone from €88bn a decade ago to over €470bn today.

There is an enormous amount of equity now supporting the national mortgage book. For example we estimate that it would take a price fall of over 20% before a typical FTB mortgage issued in 2003 on a new house (based on the national average) would be in negative equity. Moreover it would take a fall of over 30% before those issued in 2002 would be in negative equity.

On the corporate side, given the huge level of lending to the construction and commercial property sectors it is encouraging that the underlying demand/supply conditions in the Irish market are improving. However one would have to say that there still appears to be a large gap between the environment suggested by the 35-55% growth rates in credit to the sector and the rise in tenant demand.

In the event that this rising debt contributed to credit quality problems down the road, we take comfort from the fact that the Irish banking sector is extremely profitable - the quoted banks earn operating profits that are anywhere between 12–20x current bad debt provisions. For example we estimate that if bad debts were to double at each bank, that PBT would fall by just 5% for ANGL, 7% for ALBK and Permanent TSB (less than 3% for IPM as a group) and 9% for BKIR.

1. How large is the debt and how fast is it rising?

Introduction

Most investors will be familiar with the fact that credit growth in Ireland has been running at a rapid pace for much of the past decade reflecting the unprecedented expansion in the Irish economy. Over the ten-year period 1994-2004, private sector credit (PSC) increased more than six fold to over €200bn. This expansion helped finance a more than three-fold increase in the value of economic output.

Having decelerated from a peak of over 30% during early 2000 to a more "normal" range of 10-15% during much of 2001/2, PSC growth has accelerated markedly again and has remained stubbornly above 25% since mid-2004.

As an analyst covering the Irish banks, there is a tendency to become almost immune to this pace of credit growth and hence it struck us that it was time we looked at this question of rising debt in more detail to see if Ireland Inc and the banks in particular are storing up problems for the future.

What does the aggregate data tell us?

Ireland - third most indebted in eurozone but heading for number one

So given the economic progress this country has made in the past decade, how indebted is Ireland and how do we now compare with other developed economies?

Before proceeding we would state up-front that in discussing Ireland's economic performance we prefer to use GNP rather than GDP as its strips out the distortions associated with multinational transfer pricing which is particularly prominent because of Ireland's 12.5% corporate tax rate. For most countries the difference between the two is not significant (1-2% at most) and therefore one can virtually interchange between the two terms, whereas for Ireland the difference is 19% or €24bn last year i.e. GNP is considerably smaller.

The second is a related point. Ireland's PSC data includes a high level of lending to non-bank entities located in the IFSC in Dublin (c €19bn at end 2004) which largely reflects international transactions that have little to do with the domestic economy. This is the rationale for the Central Bank stripping this lending out and producing an adjusted measure for PSC (it also adjusts for FX movements too). Hence we think there is logic in using a (PSC-IFSC)/GNP ratio for Ireland - coincidentally the IFSC distortion largely offsets the GDP/GNP gap leaving the outcome not too different than using the standard PSC/GDP calculation.

Using the standard measure, Irish PSC as a % of GDP has increased from 65% in 1994 to 136% in 2004 and, as with many other statistics Ireland, has closed the gap with its European neighbours who average around 107% within the eurozone. On our preferred PSC (ex IFSC)/GNP measure, Ireland's ratio had reached 147%.

Since EMU in 1999, PSC in Ireland has grown at an annual rate of around 3x the Euro area (see table 1) hence, despite faster nominal economic growth, we estimate the PSC/economic output gap between Ireland and the eurozone is widening at a rate of around 15% points p.a.

Table 1: PSC growth rates – Ireland vs. Eurozone

	1999	2000	2001	2002	2003	2004
Ireland – PSC adj.	28.8	21.3	15.1	15.0	17.9	26.6
Eurozone	10.5	10.3	6.7	4.7	5.7	7.0

Source: Central Bank

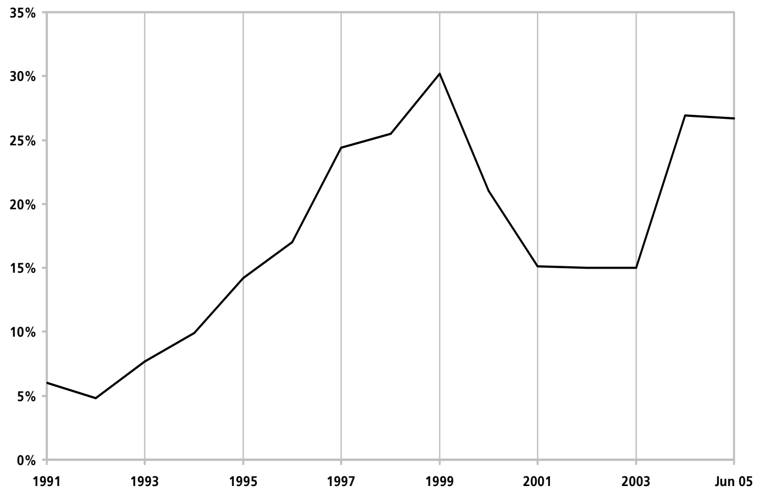
As for where we rank, Ireland was amongst the top three most indebted countries in the eurozone at the end of 2003 which is the latest year for which we have standardised data (see Table 2).

Table 2: Private sector debt rankings for the Eurozone, 2003

Country	PSC/GDP	Rank	Country	PSC/GDP	Rank
Netherlands	154.8	1	Netherlands	154.8	1
Portugal	146.2	2	Portugal	146.2	2
Ireland (GDP)	**120.1**	**3**	**Ireland (PSC-IFSC/GNP)**	**126.0**	**3**
Spain	119.2	4	Spain	119.2	4
Germany	117.3	5	Germany	117.3	5
Lux	114.8	6	Lux	114.8	6
Austria	104.7	7	Austria	104.7	7
France	90.8	8	France	90.8	8
Italy	85.3	9	Italy	85.3	9
Belgium	76.7	10	Belgium	76.7	10
Greece	71.9	11	Greece	71.9	11
Finland	63.9	12	Finland	63.9	12

Source: Central Bank; Davy

Figure 1: Irish private sector credit growth



Source: Central Bank

Using the data in table 2, consensus economic growth forecasts and current credit growth rates, we have estimated where Ireland would rank in the eurozone at the end of 2005. We calculate that Ireland would move up a place overtaking Portugal both using the standard PSC/GDP measure and our preferred PSC-IFSC/GNP approach. Moreover, if current growth rates in credit persist to end 2006 we believe Ireland could become the most indebted country in the eurozone.

Table 3: Ireland's private sector debt ranking at end 2005 (e)

Country	PSC/GDP	Rank
Netherlands	181%	1
Ireland (PSC-IFSC/GNP)	172%	2
Portugal	155%	3

Source: Davy

The fact that Ireland's ratio has been rising so fast relative to other European countries is not surprising given that income per capita or living standards here have also been rising at a much quicker pace. More developed economies have higher debt levels as they become more monetised. GDP per capita in Ireland in 2004 was well above the eurozone average, however using our preferred GNP measure, we estimate that Ireland was just below the eurozone average and will probably only exceed it for the first time this year.

Table 4: Economic output per capita (PPP's) – Ireland vs. Eurozone (€)

	2004		2000
Luxembourg	50067	Luxembourg	43697
Ireland GDP	**31231**	**Ireland GDP**	**25234**
Austria	28141	Austria	25129
Netherlands	27513	Netherlands	24261
Belgium	27305	France	23730
eurozone	26788	Belgium	23221
Finland	26654	eurozone	23207
France	26522	Finland	22866
Ireland GNP	**26166**	Germany	22623
Germany	24715	Italy	22161
Italy	24455	**Ireland GNP**	**21583**
Spain	23949	Spain	18906
Greece	19040	Portugal	15410
Portugal	16931	Greece	14902

Source: Davy estimates

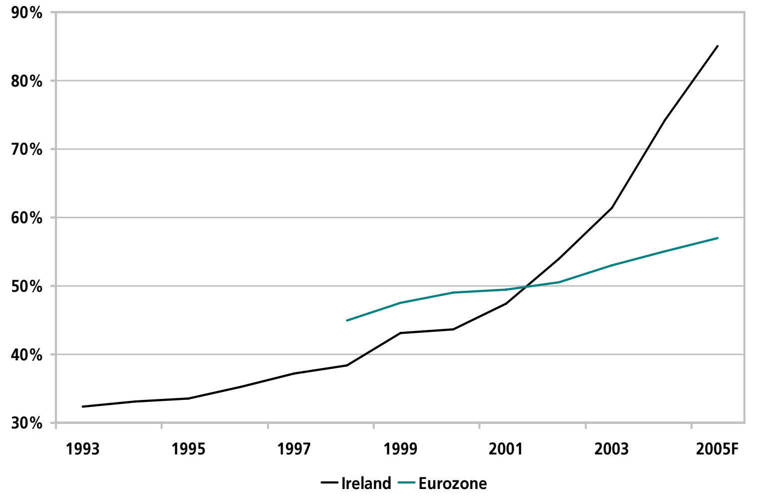
Personal sector debt

Another way to look at the same picture is to examine the sub-level data i.e. the level of indebtedness of the personal and corporate sectors in isolation. If we take the personal sector first, which accounts for 46% of total credit (or 56% if we ignore the category financial intermediation), personal debt in Ireland as a % of GNP has increased from 33% ten years ago to 74%. This is above the euro-household area average of around 55% (using GDP, see figure 2).

However such is the difference in the trajectory of credit growth in Ireland that we estimate by the end of this year, Ireland will have reached 85% (up 11% during the year) while the eurozone figure will have reached maybe 57%.

Measured as a proportion of personal disposable income, personal debt breached 100% for the first time last year reaching 122% by our estimates. By the end of 2005 this figure will be nearer 140%. While the eurozone average by contrast was around 85% in 1993 and will probably reach the mid-90%s by the end of this year, the UK will be over 150%, the Netherlands over 200%, and Denmark over 220%.

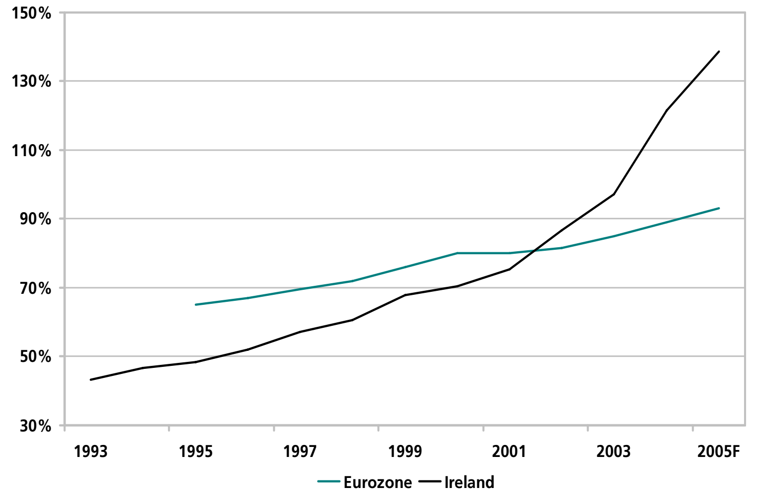
Figure 2: Personal debt/GNP, Ireland vs Eurozone



Note: Using GDP for Eurozone which is little different than GNP

Source: Davy

Figure 3: Personal debt/disposable income, Ireland vs Eurozone



Source: Davy

Net indebtedness much lower

These standardised measures only calculate gross indebtedness. Ireland's savings ratio is around 11% and while comparable to the European average is certainly well in excess of that in the UK and US. Most of this "saving" takes the form of pensions investment/repayment of principle on debt etc. However, Irish households have traditionally maintained sizeable deposit balances too.

As table 5 shows, in 1994, the personal sector had more deposits than debt and it was only towards the end of 1998 that Irish households on aggregate moved to a net debt position. By the end of 2004, net debt was up to 50% of disposable income but still considerably less than the gross measure would suggest.

Table 5: Personal indebtedness on a net basis (€bn)

December	Personal debt	Personal deposits	Net debt	Net as % of disposable incomes
1994	13,812	17,924	–4,112	nm
1999	32,935	27,531	5,404	11%
2004	90,970	53,688	37,282	50%

Source: Davy; Central Bank

Corporate sector debt – property is our main focus

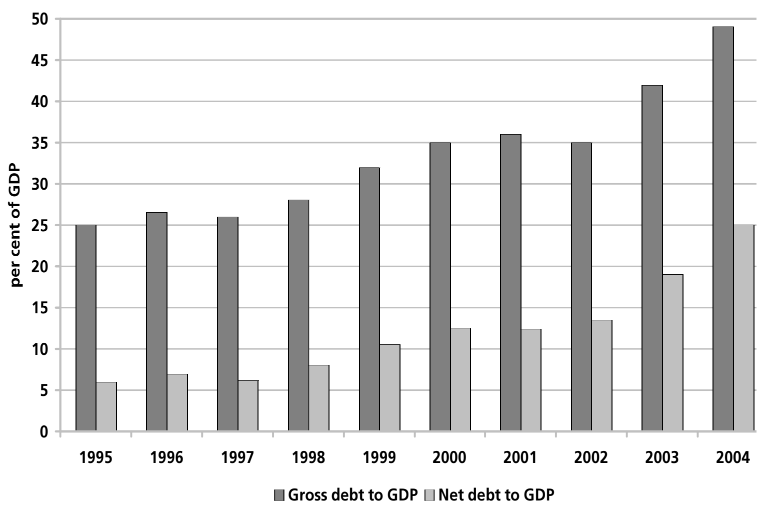
Overall macro trends

Measuring corporate indebtedness is not an easy exercise given that larger firms can use international capital markets as well as traditional bank debt, be it from domestic or overseas banks, to fund their operations.

In their financial Stability Report in 2004, the Central Bank focused only on the bank debt component given this data problem. They concluded that Irish corporates have become increasingly indebted in the past couple of years. Total indebtedness of the sector, be it Irish or overseas borrowings (which is sourced from the BIS), as a % of GDP rose to its highest level since records began in 2003 (at 77%) when one adjusts for movements in exchange rates.

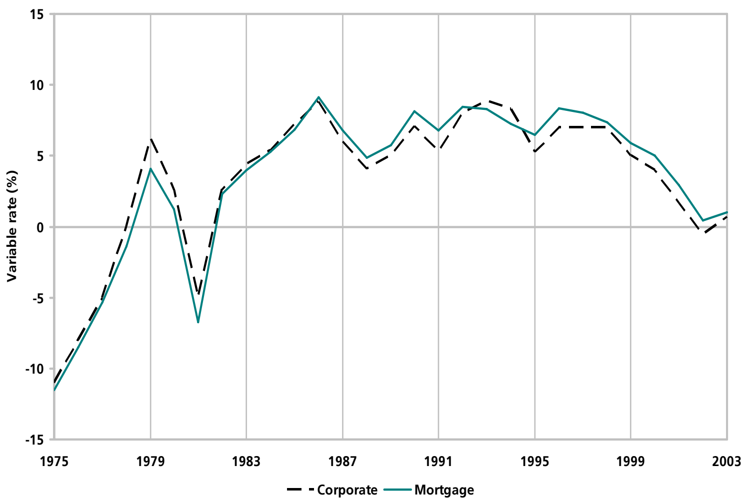
Around half of this total debt is sourced from Irish banks. If we measure this debt as per the Central Bank methodology (stripping out financial intermediation) it reached 49% of GDP last year versus nearer 25% in 1995. Of course the corporate sector keeps a substantial level of deposits too, so on a net basis we estimate net indebtedness to resident credit institutions reached a much lower 25% of GDP at the end of 2004, up from 19% in 2004 and a mid-high single digit percentage 10 years ago.

Figure 4: Corporate indebtedness (resident institutions only)



Note: Gross figure strips out financial intermediation category; net deducts equivalent deposits
Source: Central Bank; Davy

Figure 5: Real corporate lending rates



Source: IMF

Property lending has seen massive growth

Once again the above metrics describe the aggregate situation of corporate Ireland. Our main focus in this section is on the construction and property sectors where we have seen the most significant increase in bank lending and where we think the greatest risk would lie in the event of a shock to the system down the road.

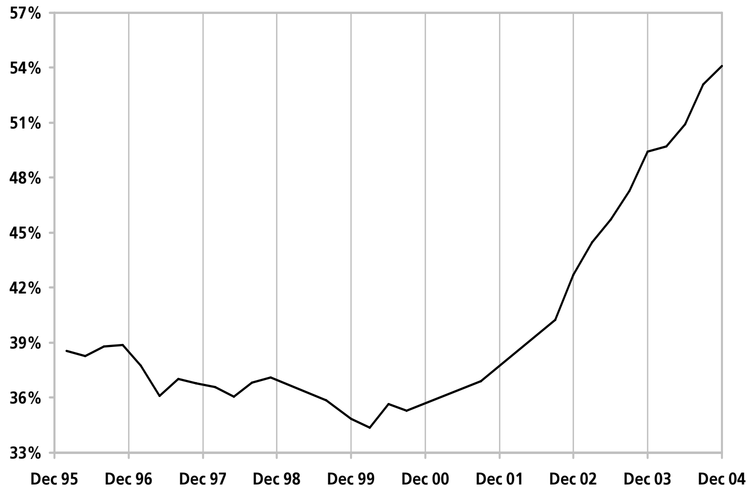
Growth in construction lending was 56.6% yoy in the year to March 2005. This surpasses the last peak in September 2000 (56%), while real estate lending expanded at 37.8% yoy. In fact, of the growth in total credit in the year to March, 75% was property related, 10% of which was construction, 18% real estate activities and 47% residential mortgages.

If we look back a decade, at the end of 1995 construction and commercial real estate lending accounted for less than 6% of total PSC. Nine years later, at the end of last year, this figure was 17.4%. If we include residential mortgages, all property related lending has gone from 38% to 54% of PSC (see figure 6). To a large extent, the growth in lending to the construction sector is linked to the growth in housebuilding activity and residential mortgages and this is because builders need to borrow to build houses. However, it is the real estate category we find harder to explain.

Of course, property has generated massive profits for both the firms and individuals involved over the past decade and the banks themselves would point to huge cash piles and equity as backing for the lending they are doing at the moment. Tracking this using available data is virtually impossible as many of these assets could be held in companies within other sectors (many property entrepreneurs are involved in other business activities) or overseas.

In table 6 we show both the gross and net lending position to the construction and real estate sectors combined, but only using figures from domestic credit institutions for Irish resident borrowers. The net exposure is around two thirds of the gross position but this figure has still multiplied eight-fold in the past five years.

Figure 6: Property lending as % of PSC



Source: Davy

Table 6: Lending to construction and real estate sectors (resident figures only)

€m	1999	2003	2004	% change 2004	% change 1999–2004
Gross lending construction and real estate	9587	29734	41794	41%	436%
Deposits	5991	11539	13390	16%	224%
Net lending	3596	18195	28404	56%	790%

Source: Central Bank

But non-property lending has accelerated too

While we have focused here on property lending, we must point out that "non-property" lending has also accelerated in the past couple of years. According to the Central Bank, non-property related lending (i.e. ex resi mortgages, construction and real estate) grew by 12% in the year to March 2005 and in Q4 showed the fastest quarterly increase for three years.

Moreover if we exclude the mercurial category "financial intermediation" (a lot of which is banks' funding of their non-bank based IFSC activities e.g. Bank of Ireland group funding BOIF's international lending operations) it was up 24%. One can see this from looking at, say, manufacturing which showed growth of 19.5%yoy - so the acceleration in pure business lending in Ireland as the economy has picked up is genuine. This is a positive from the point of view of the economy and the banking sector in general.

2. What is driving credit growth?

Demand factors – where the real change has occurred

The market for credit can be characterised like any other market in that it is influenced by demand and supply factors. In an Irish context, we think those drivers of demand are well-known and understood in general terms and include (see charts 24–28 in appendix):

- Almost a 200% rise in the nominal value of GNP in the past ten years.
- An unprecedented increase in employment from 1.2m in 1994 to almost 1.9m people now (53%).
- The collapse in real interest rates and the anticipation of low and more stable rates in the future
- Creation of the single currency which eliminates another source of volatility for companies

Why should credit be growing at 25%+ when our catch-up phase is over?

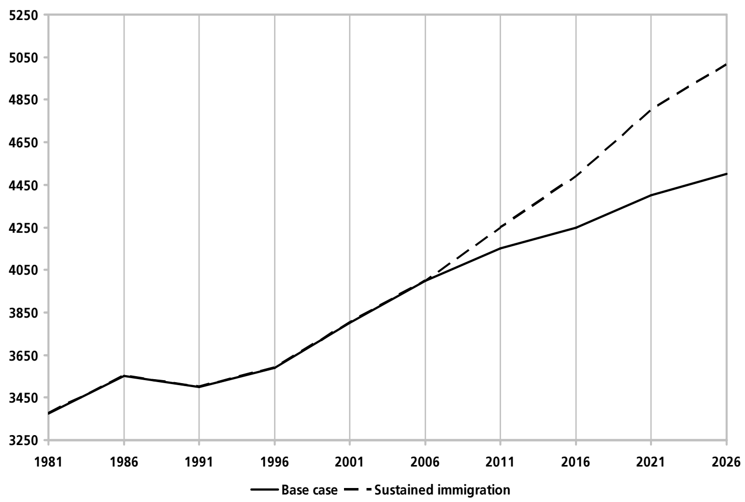
What is less understood is how and why these factors should still be driving credit growth at a 25%+ pace today given that Ireland's supposed "catch-up" phase is largely over.

If we take commercial lending which represents the largest proportion of PSC, one banking CEO recently characterised what is going on as an "upgrading of Ireland's entire commercial infrastructure" to cater for a huge expansion in the domestic workforce and wealth. In other words, not only do these people need to be housed but they need shopping centres, recreational and transport facilities etc.

This is an explanation which certainly resonates with us and any investor to Ireland will certainly observe that, while there may be visible signs of "wealth" which dovetails with our statistics produced earlier on say GNP per capita, Ireland's social and transport infrastructure is seriously sub-standard relative to say London, Paris or Madrid.

Moreover if population projections are to be believed, Ireland's population could be heading for 5.0m people by 2020 (assuming inward migration continues) which would represent an increase of 22% from today's level. There is no guarantee that all these extra people within the working age cohorts will find work of course (net immigration could reverse if unemployment rates increase) but such a trend would obviously be supportive of credit growth and the financial services sector in general well into the future.

Figure 7: Population growth historic and projected



Source: CSO; Irish Life

What's driving the mortgage market?

It is interesting to note that mortgage debt is rising at the same pace now as it was during the best of the Celtic tiger years i.e. 1998-2000. In fact, if one looks at it in real terms i.e. adjusting for house price inflation, it is rising at its fastest pace ever.

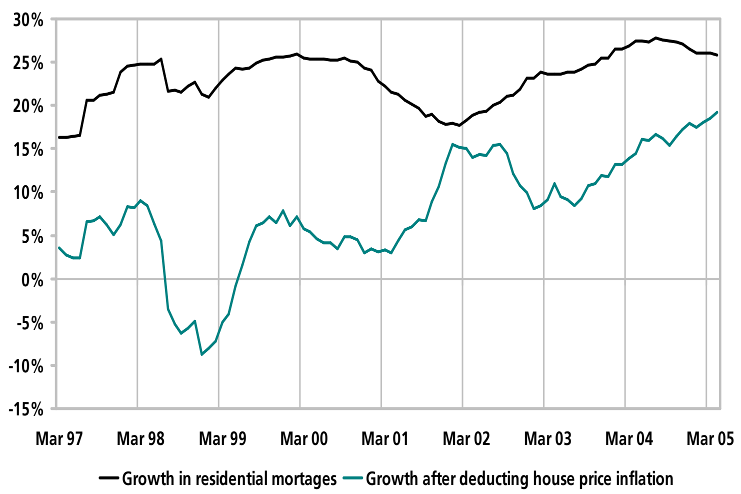
House price inflation has slowed considerably—latest data from the Permanent TSB/ESRI index (the best source) suggest that prices were up 6.3% yoy in the year to June. This suggests that the volume of mortgage transactions has been rising which is easy to see from the massive boom in new house completions which reached 77,000 in 2004 (or 19 per 1000 population, see table 7).

According to the latest housing statistics bulletin, around 44,000 of these had a mortgage which is up from less than 30,000 in 1998. Transactions in the second-hand market have also increased substantially according to DOE figures from around 35,000-40,000 in 1998-99 to over 54,000 last year.

We also know that MEW (mortgage equity withdrawal) is now a big driver of lending volumes too. While no official data is recorded for this, figures we have seen suggest it may account for 15%-20% of gross lending. However, survey evidence from the ESRI/IIB would suggest that over half of this lending is used for property related purposes i.e. house purchase or RMI, with the balance used for debt consolidation or the purchase of other goods.

One factor that may also be driving Irish mortgage lending is the growing trend towards investment in overseas property. While we tend to assume that the financing of this activity in the eurozone is done by local banks, if an Irish bank gives an equity release loan for the purchase of a holiday home, they do not always know whether this property is located in Mayo or Malaga. Not does it matter really as long as the security for the loan is an Irish property and repayment criteria are met. Our back-of-the-envelope estimates from conversations with banks suggests that this could represent 20–30% of all MEW or up to 5–6% of total gross lending.

Figure 8: Mortgage growth (nominal and net of house inflation)



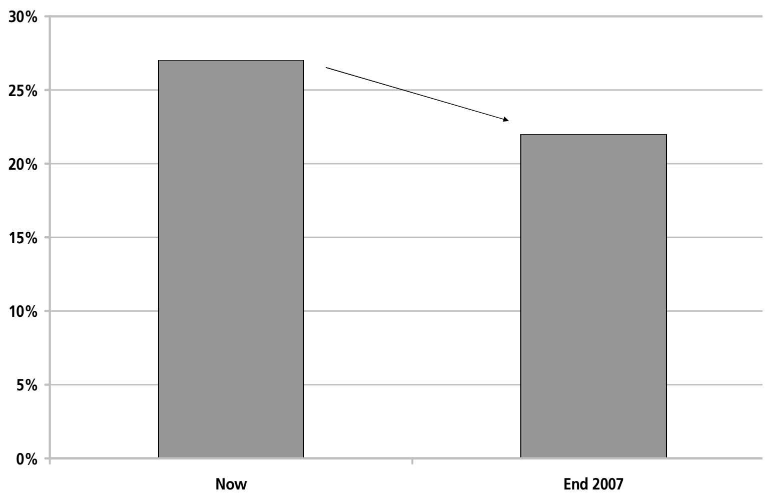
Source: Davy

We expect the number of house completions to be around the same this year as in 2004 but decline thereafter to around 65,000 by 2007. We also expect activity in the second hand market to level out next year and conservatively assume no further house price inflation beyond this year's assumed rate of 5%.

With these assumptions our model would suggest mortgage growth would slow from around 23% at the end of this year to 17% in 2006 and 12% in 2007. If we assumed no change in the growth rate of non-mortgage lending over this horizon, this would knock 5% points off the growth in PSC (36.7% of total PSC) taking it down from 27% to 22%.

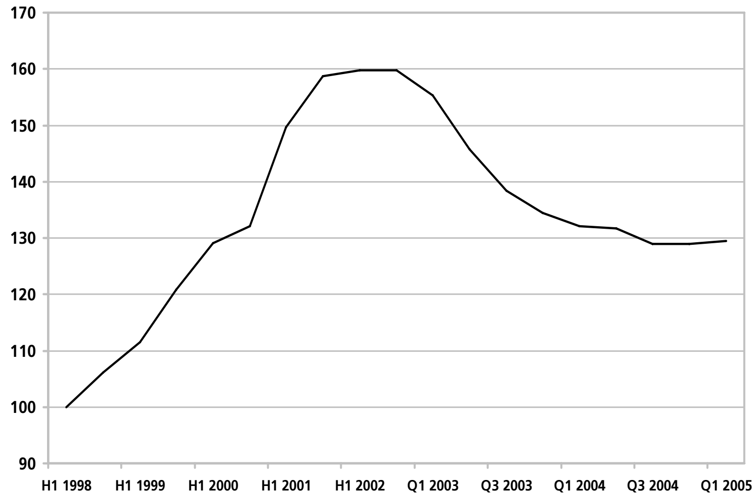
Investors are probably aware that Davy has harboured some concerns about the supply situation in the housing market for some time, particularly as we could not fully explain the trend in new house completions. One of the metrics that was flashing red in our view was housing rents and as these were falling sharply it seemed to suggest that there was a large number of un-let properties coming onto the market. As figure 10 shows rents appear to have stabilised over the past year suggesting that we may have underestimated the demand for accommodation (i.e. the immigration angle) and/or the number of units that were bought as second/holiday homes.

Figure 9: PSC growth assuming mortgage slowdown to 12%



Source: Davy

Figure 10: Gunne index of residential rests



Source: CBRE Gunne

Figure 11: Rental yields in Ireland (%)

Source: Bank of Ireland

Table 7: Davy Irish mortgage model, 1995–2006F

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004F	2005F	2006F
New homes (DOE data)												
House completions	30575	33725	38842	42349	46512	49812	52602	57695	67819	76954	77000	72000
Transactions	19320	25628	28193	27335	31359	31533	29431	32298	35292	44231	44257	41384
% growth		33%	10%	–3%	15%	1%	–7%	10%	9%	25%	0%	–6%
% that have a mortgage	63%	76%	73%	65%	67%	63%	56%	56%	52%	57%	57%	57%
Average house price	77994	87202	102222	125302	148521	169191	182863	198087	224567	249191	261651	261651
House price inflation		12%	17%	23%	19%	14%	8%	8%	13%	11%	5%	0%
Average loan (paid)	48478	50398	60139	71966	88549	98107	112439	134801	152955	167665	176048	176048
Avg LTV (loans paid)	62%	58%	59%	57%	60%	58%	61%	68%	68%	67%	67%	67%
Value of lending	936.6	1292	1696	1967	2777	3094	3309	4354	5398	7416	7791	7286
Other homes (DOE data)												
Transactions	27715	30381	29708	34052	39458	42725	37355	46994	49457	54478	58291	61206
% growth		10%	–2%	15%	16%	8%	–13%	26%	5%	10%	7%	5%
Average house price	74313	85629	102712	134529	163316	190550	206117	227799	264898	294667	309400	309400
House price inflation		15%	20%	31%	21%	17%	8%	11%	16%	11%	5%	0%
Average loan size (paid)	48623	54906	63740	76938	94787	105432	116576	137707	164298	174698	185640	185640
Avg LTV (loans paid)	65%	64%	62%	57%	58%	55%	57%	60%	62%	59%	60%	60%
Value of lending	1348	1668	1894	2620	3740	4505	4355	6471	8126	9517	10821	11362
Total DOE lending	2284	2960	3589	4587	6517	7598	7664	10825	13524	16933	18613	18648
% change		30%	21%	28%	42%	17%	1%	41%	25%	25%	10%	0%
Calculation of repayments												
Assumed avg loan life (years)	7	7	7	7	7	7	7	6.5	6.5	6.25	6.25	6.0
Equity release/churn (estimated)	622	689	1688	1537	1800	2577	2762	3800	5854	8311	11220	13464
% change		11%	145%	–9%	17%	43%	7%	38%	54%	42%	35%	20%
Total gross lending (estimated)	2906	3648	5277	6125	8317	10175	10426	14626	19377	25244	29833	32112
% change		26%	45%	16%	36%	22%	2%	40%	32%	30%	18%	8%
% of mortgages housing related		81%	68%	75%	78%	75%	74%	74%	70%	67%	62%	58%
Model of volumes												
Opening mortgage balance	**10537**	**11938**	**13620**	**16951**	**20146**	**24435**	**29474**	**34025**	**43416**	**54614**	**73120**	**91253**
DOE gross lending	2284	2960	3589	4587	6517	7598	7664	10825	13524	16933	18613	18648
Equity release/churn	622	689	1688	1537	1800	2577	2762	3800	5854	8311	11220	13464
Securitisations/BOSI reclassification*	0	–261		–508	–1150	–1645	–1664		–1500	2000	0	0
Repayments	–1505	–1705	–1946	–2422	–2878	–3491	–4211	–5235	–6679	–8738	–11699	–15209
Closing mortgage balance	**11938**	**13620**	**16951**	**20146**	**24435**	**29474**	**34025**	**43416**	**54614**	**73120**	**91253**	**108156**
Outstanding securitisations*	0	259	244	709	1751	3072	4318	3796	4628	3909	3362	2891
Total outstandings	**11938**	**13879**	**17195**	**20855**	**26186**	**32546**	**38343**	**47212**	**59242**	**77029**	**94615**	**111047**
% change outstandings	13.3%	16.3%	23.9%	21.3%	25.6%	24.3%	17.8%	23.1%	25.5%	26.6%	22.8%	17.4%
Breakdown of gross lending												
New homes	32%	35%	32%	32%	33%	30%	32%	30%	28%	29%	26%	23%
Second hand/trader up	46%	46%	36%	43%	45%	44%	42%	44%	42%	38%	36%	35%
Other	21%	19%	32%	25%	22%	25%	26%	26%	30%	33%	38%	42%

Source: Central Bank; DOE; Davy

Supply factors - what's happening to credit criteria?

There is a number of supply side drivers including the fact that bank asset quality is at all time high, while bank capital and profitability levels are also extremely high and have been for a very long time (see charts 28-29). For example, we estimate that the aggregate ROE of the four quoted banks we cover will be 22% this year and this figure has been over 20% for the past decade.

The impact of such a trend cannot be under estimated and has contributed to an environment where banks feel extremely confident about lending money. In fact one senior banker commented to us recently that asset quality was the best he had ever seen it in his entire career spanning 30 odd years.

Increasing competition is another factor in the mix which is no doubt improving access to credit particularly in the personal market. This has become evident in Ireland within the last two years in particular, with more choice appearing and spreads coming down on products such as credit cards, term loans and mortgages.

Given this collection of factors there is a general perception amongst the public that we are living in an "easy money" environment. But how true is this?

Survey evidence suggests modest easing

The ECB has developed a survey of bank lending in the euro area. The survey addresses issues such as credit standards for approving loans as well as credit terms and conditions applied to enterprises and households. The survey is addressed to senior loan officers of a representative sample of euro area banks and is conducted four times a year.

The latest survey for Ireland from last April suggested that standards remained basically unchanged for consumer credit and other non-housing related loans. However, one bank reported an easing of standards for house purchase loans and therefore the overall result pointed to a slight easing of credit standards for such loans for the first time in two years.

The only factor identified as contributing to an easing of credit standards for house purchase loans was competition from other banks. Most terms and conditions for house purchase loans were reported as remaining basically unchanged, although one bank reported an easing in terms and conditions relating to the loan-to-value ratio and maturity of loans (see table 8).

Table 8: EU Bank lending survey – results for Ireland

	Apr 2005	Jan 2005	Oct 2004	Jul 2004	Apr 2005
Change in credit standards (last three months)					
House purchase	3.3	3.0	3.0	3.0	3.1
Factors affecting credit standards					
Cost of funds and balance sheet constraints	3.0	3.0	3.0	3.0	3.0
Pressure from competition					
– competition from other banks	3.3	3.3	3.0	3.0	3.2
– competition from non-banks	3.0	3.0	3.0	3.0	3.1
Perception of risk					
– expectations regarding general economic activity	3.0	3.0	2.8	3.0	3.0
– housing market prospects	3.0	3.0	3.0	3.0	2.9
Change in terms and conditions					
Price					
– margin on average loans	3.0	2.8	3.0	2.5	3.3
– margin on riskier loans	3.0	3.0	3.0	3.0	3.0
(tightened = wider margin; eased = narrower margin)					
Other terms and conditions					
– collateral requirements	3.0	3.0	3.0	3.0	3.0
– loan-to-value ratio	3.3	3.0	3.0	3.0	3.1
– maturity	3.3	3.0	3.0	3.0	3.2
– non-interest charges	3.0	3.0	3.0	3.0	3.0

Note: 2= tighten somewhat; 3= basically unchanged; 4= Ease somewhat; 5= ease considerably

Source: Central Bank

We think criteria are starting to stretch …

If we take a look at the mortgage market where we have the most data, loan to value ratios (LTVs) have largely remained well behaved, until now that is. By way of background, Ireland like the UK and the US has always had higher LTV's than in other markets (see table 9).

For the past few years there has been a general reluctance by the bank's here to offer LTV's above 92%. That been said 95-100% has generally been available to certain professionals on a case-by-case basis. For example, published figures would show that around 6% of BKIR's new mortgage advances had an LTV over 92% last year (in 2000 5% was >90%) while the average LTV at Permanent TSB for FTB's was 81%.

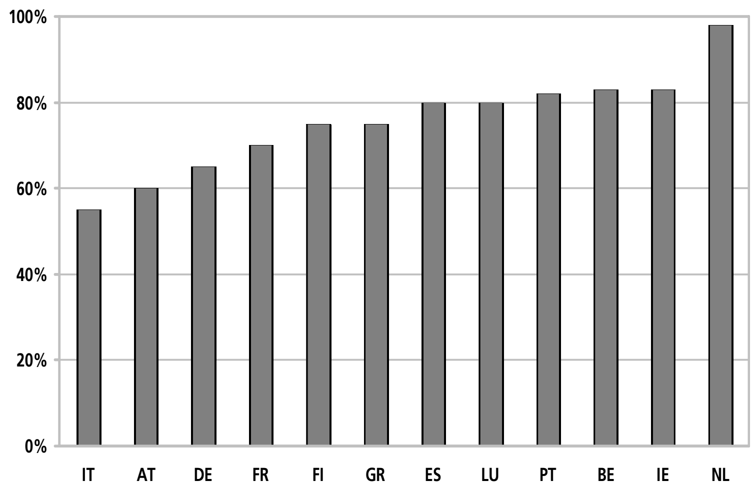
In recent years, where a house buyer(s) fell short on their deposit or could not meet the price of their chosen house due to income hurdles, parents have often bridged the gap. Figures from Bank of Ireland suggest that one in four of their FTB's received assistance and the average amount given by parents/family members was €30,000 (effectively a deposit). The equivalent figures for Permanent TSB are one-in-five and €15,000.

Table 9: Maximum mortgage LTVs (%)

Australia	80
Belgium	80–85
Canada	75
Denmark	80
Finland	75
France	80
Germany	60
Ireland	92
Italy	50
Japan	80
Netherlands	75
Norway	80
Spain	80
Sweden	80
Switzerland	66
United Kingdom	90–100
United States	75–80

Source: Tsatsaronis and Zhu (2004); Davy

Figure 12: LTV's on new mortgages, 2003



Source: ECB

With FTB's finding it increasingly difficult to put together a deposit, First Active (part of RBS) recently broke ranks and is now offering a 100% LTV product aimed at first time buyers. The product was described by one mortgage broker as the "biggest development in the Irish mortgage market in years" and First Active admit that it will add to house price inflation in the short term. Ulster Bank (First Active's sister company), Permanent TSB and Bank of Ireland have all followed the move (i.e. over half the market by stock and flow) and even if the rest do not with their "off the shelf" offerings, it will up the ante in the market and encourage banks to offer 95–100% LTV's more frequently.

The initial indications are that the product has been very popular, however the requirement to still meet repayment criteria means that it is only suitable to those on medium to higher incomes, particularly in Dublin where house prices are much higher.

In any discussion of 100% LTV's in Ireland, it should be noted that stamp duty is payable on any second hand houses at a rate of up to 9%, and this is not just for those houses at the top end. Based on current prices, the average second hand house in Dublin (€389k in 2004) would be liable for a rate of 6%.

Term extension and interest-only supporting market

Two new trends which have been helping to support mortgage affordability in the past couple of years are term extension and the increased availability of interest only loans.

A casual run through various bank and broker websites suggests that the typical mortgage term for first time buyers or young people trading-up has run out from 20 years to 30-35 years. AIB told us that their average FTB loan has a term of 28.5 years while another leading bank's book split as follows with 79% of FTB's taking out loans of 30 years or more:

Table 10: Term split of new lending to FTB's ("Bank A")

31–35 years	38.5%
26–30 years	44.1%
21–25 years	11.7%
Up to 20 years	5.7%
Total	100.0%
30 years and over	79%

Source: "Bank A"

Pushing out the term of a loan helps a borrower pass a bank's NDI rule (i.e. mortgage repayments must not be more than 15.8% of net disposable income – see below), though there's nothing wrong with that from either party's point of view (the next generation in Ireland might not agree!). However, given the change that has already taken place, we think term extension will be a less powerful driver of loan demand in the future.

The easier availability of interest only loans is another new trend in the market particularly for investors. In fact one really has to go the interest only route to make a buy to let deal work at current house prices (unless you've got one serious deposit; see table 11).

Hence despite falling yields, buy to let still represents 20%-25% of many banks' new lending. Moreover it is now common for banks to suggest to aspiring trader uppers that they should hold on to their first house as an investment rather than take the equity with them.

Looking at BKIR's recent ACS fundraising document we note that the proportion of its new mortgage advances in Ireland that were interest only seems to have increased to 16% for the year to March 2005* vs 12% in the previous year while interest only loans made up 10% of the entire book at end March 2005* versus 6% a year previously.

Table 11: Interest-only vs. repayment mortgage

New house price (€)	250,000				
Term 25 years rate of 3.5%					
Gross yield	2.50%	2.75%	3.00%	3.25%	3.50%
Rental income (€ per month)	521	573	625	677	729
Rental after voids (15%)*	443	487	531	576	620
A. Loan (80%) – capital repay	200,000				
Cost per month (€)	1000	1000	1000	1000	1000
Net cash outflow (€)	–557	–513	–469	–424	–380
B. Loan (80%) – interest only	200,000				
Cost per month (€)	583	583	583	583	583
Net cash outflow (€)	–140	–96	–52	–7	37
C. Loan (70%) – capital repay	175,000				
Cost per month (€)	875	875	875	875	875
Net cash outflow (€)	–432	–388	–344	–299	–255
D. Loan (70%) – interest only	175,000				
Cost per month (€)	510	510	510	510	510
Net cash outflow (€)	–68	–23	21	65	109

Source: Davy

Table 12: Sensitivity of repayments to a 1% rise in rates (€175k loan)

	Rate 3.5%	Rate 4.5%	Change
Interest only	€875	€982	€107
Repayment	€510	€656	€145

Source: Davy

If all interest only loans were for buy-to-let purposes then 62% of BKIR's new buy-to-let loans over the past year were interest only, though we suspect the real number is in the 50%'s as we know that some owner occupiers are getting interest only loans too.

**The interest only stats we quote for March 2005 are based on loans included within Bank of Ireland Mortgage Bank (BOIMB) which is an entity set-up for the purposes of the ACS programme while the previous year's numbers are the entire Irish book. Having said that, BOIMB had €10.95bn of Irish mortgages on its balance sheet which represents around 73% of the entire Irish mortgage book at BOI Group (c €15bn). Hence they should be fairly representative.*

What's happening to income criteria?

Affordability criteria employed by the Irish banks used to be based on a multiple of income. However, since the introduction of the euro, when interest rates came down dramatically, the sector has moved towards an NDI rule i.e. your net repayments must fall below a certain percentage of disposal income and this figure is now stress tested for a 2% rise in interest rates following guidance from the Central Bank.

Most banks apply certain bands to the rule which are tiered for different income levels. Generally speaking the range is 30-45% for single buyers and 30-40% for joint buyers with the lower end aimed at lower income earners. However some also look for a "minimum income" level after mortgage repayments, as what matters at the end of the day is not percentages but cash left in the borrowers' pocket.

The banks tend to guard their affordability models, so little is known about how these are implemented i.e. what minimum income levels are used? Is it realistic, does it take account of childcare costs for example?

This latter point particularly interests us as childcare costs in Dublin can typically be between €600-€800 a month or the equivalent of another mortgage. When one considers that most FTB couples and the banks are relying on both salaries to support the mortgage and the average age of a first time mother in Ireland is 28.5 versus somewhere between 28-32 for a typical FTB (banks have different profiles), one has to ask the question as to how relevant these NDI rules really are. Put another way, there is a reasonable probability of a couple's financial circumstances being radically changed within 2-3 years of taking out their mortgage, even allowing for wage growth in the meantime. Having said that we do recognise that banks have to assess the loan on the basis of the facts presented to them e.g. someone could just as easily lose their job.

Hence it is not easy to track how NDI rules are being implemented particularly as the outcome of a NDI test depends on the mortgage term chosen. We can however track old style income multiples fairly easily. Figures contained in the document for Bank of Ireland's recent ACS issue give us some insight. The document quotes an income multiple of 4.0-5.0x for single borrowers and up to 4.5x for married/joint borrowers. These compare with 3.25-4.5x and 3.0-3.75x in the document for the first ACS issue published in August 2004.

We understand that this change was in response to the bank's general confidence about the state of the economy/interest rate trends etc (remember too that mortgage charge-offs are effectively zero right now and ROE's 30%+). Tracking back even further, maximum income multiples were 3x (the main income) plus 1.25x (the second income) five years ago (as per the Liberator securitisation document in mid-2000), while the traditional rule across the sector in pre-EMU Ireland (when interest rates were much higher of course) was 2.5x plus 1.0x.

Shopping around – how much money could we raise?

This "news" prompted us to do a quick ring around brokers and a few banks (chosen at random) to see how much money we could raise in the form of preliminary mortgage approval (obviously with no documentation shown). In fact we did this on two occasions around six weeks apart. The first survey was conducted before the announcement of First Active 100% LTV offer and the second afterwards.

Posing as a 27-year old first time buyer with an income of €60k per annum (average male FTB at BKIR was €47,000 last year) and a parental deposit of €30k, we were easily able to raise 5.3x our income or €320k (92% LTV) in order to buy a €350k apartment in Dublin. This is the equivalent of 40% of net disposable income over a 30-year term (rate of 3.1%) which is in the middle of the 30-45% range given the fairly good salary we quoted (note all our NDI calculations ignore mortgage interest relief).

Posing as a first time buyer couple with a combined income of €60k (split €35k/25k; BKIR said their average FTB couple had income of €64,000), we were offered loans equivalent to 5-5.2x income from most of our chosen companies. On our second ring around we got €360k from one building society. This institution also suggested we claim that we would rent a room in order to boost our application's chances with their auditors. Moreover, they had numbers to show as to what it would do to our income - i.e. €420 per month or €5k a year. When we asked if we should claim this when we had no intention of doing so, the sales person suggested it was up to us.

A loan of €360k is the equivalent of 37% of joint net disposable income over a 30-year term (rate of 3.1%) which is high for two average income earners (if the loan was over the traditional 20-year term the NDI % would be nearer 47%) though not above the top of the range indicated to us by the banks (40%).

In a number of instances the same organisation offered us roughly 10% more the second time we phoned despite the fact that our circumstances hadn't changed suggesting some easing of credit criteria.

One other approach pursued by one broker worth noting was their willingness to lend us considerably more money if we took out a three-year fixed rate mortgage rather than a variable rate product. Despite the fact that the cost of the two loans were more or less the same (3.45% vs 3.55%), the fixed rate option meant that the salesperson did not have to run the mandatory stress test for a 2% rise in rates that applies to variable loans. There is logic to this approach of course as presumably the borrower would benefit from say a 10%–15% rise in wages before the loan reverted to a variable rate.

These findings do not surprise us and confirm our suspicion that the bank's willingness to lend may be as big a driver of the mortgage market right now as any of the other factors we tend to point to i.e. demographics, rising disposal incomes etc. and it is a trend we would prefer not to see.

Table 13: How much money could we get as a single FTB?

	Firm offer	Income multiple	% NDI*	Comment
Broker #1	320	5.3	40%	Maybe up to €350k over 40 yrs.
Broker #2	300	5.0	37%	Confident could get to 320k
Broker #3	315	5.3	39%	Offer over 35 years. Could get to 335k
Bank #1	270	4.5	33%	Consider 350k if took a 3 yr fix (no stress test)
Building Soc #1	300	5.0	37%	Close to €320k at 35 years. Claim rent a room!

Note: Salary of €60k, aged 27; * based on 3.1% tracker over 30 years. No interest tax relief factored in to NDI calculations
Source: Davy

Table 14: How much money could we get as a typical FTB couple?

	Firm offer	Income multiple	% NDI*	Comment
Broker #1	300	5.0	31%	Could maybe get to €320k. Guided max 40% NDI
Broker #2	300	5.0	31%	Might stretch to €325k over 35–40 years
Broker #3	310	5.2	32%	35%–40% of NDI. Maybe 350k with deposit
Bank #1	280	4.7	28%	Max 40–42% of NDI allowed
Building Soc #1	360	6.0	37%	No problem over 30 years

Note: Combined salary of €60k, split €35k and €25k; aged 27; * based on 3.1% tracker over 30 years. No interest tax relief factored into NDI calculations
Source: Davy

3. Is this debt manageable?

Personal sector

Aggregate measures of servicing cost suggest no problem

Economy-wide affordability metrics do not suggest we have an imminent problem in the personal sector. True the servicing cost of this debt has risen considerably since 2003 (see table 15) reflecting the pace of debt accumulation, but in absolute terms it is still well below the level of the UK for instance. Moreover such has been the pace of disposable income growth in Ireland that even allowing for rising debt service costs, "residual" income across the economy has still been increasing.

Table 15: Personal debt service ratio in Ireland and UK

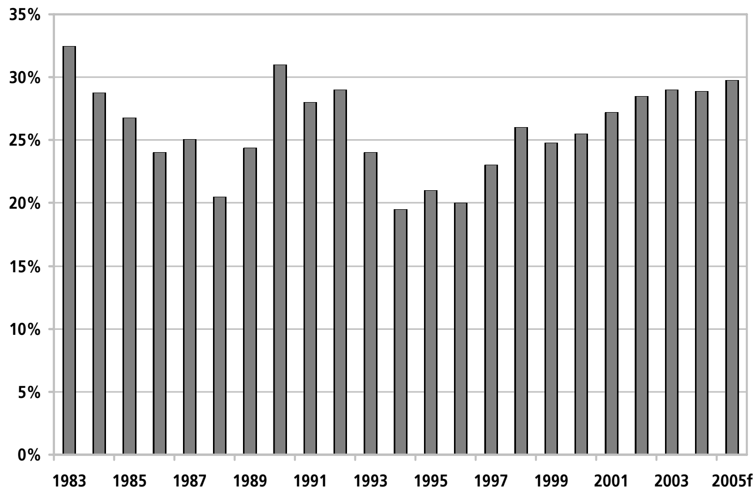
	2003	2004	2005F	2006F
Ireland	13.3%	15.5%	17.5%	19.1%
UK	18.5%	20.1%	22.9%	24.0%

Note: Building in no ECB rate rises and a cut of 0.5% in UK this year
Source: Davy

Mortgage affordability models do not suggest we have an imminent problem either. This is particularly so given that interest rates and unemployment look like staying low for the foreseeable future. However, we would stress that a continuation of the current growth rate in credit for another few years could change this conclusion.

For example Bank of Ireland's series, which is widely quoted, suggests annual repayments for a typical single FTB represented around 29% of average gross economy-wide earnings last year which is about the same as it was two years previously and in line with its 25-year average.

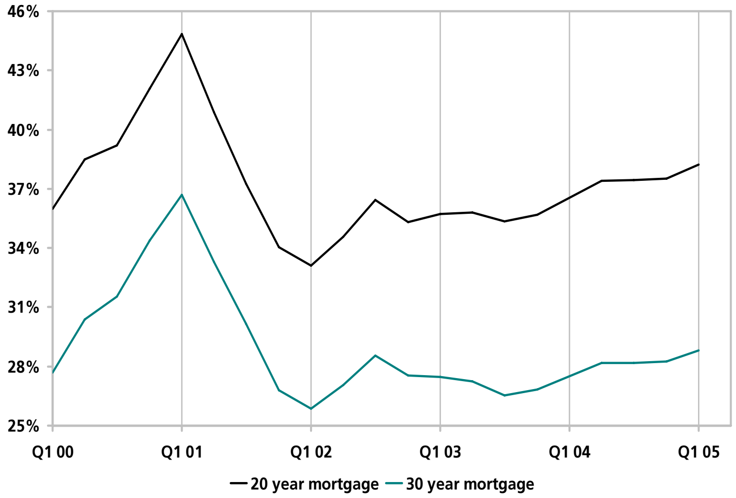
Figure 13: Mortgage affordability nation-wide



Note: compares cost of a typical new house loan (over 25 years) with average gross earnings for a single employee across the economy. Loan amount used is DOE figure for average loan on a new house in Ireland which in 2004 equated to a LTV of 67% which was. skewed down by investor activity.
Source: Bank of Ireland

Our own model gives fairly similar results but in figure 14 we base our numbers on after-tax earnings for a "typical" FTB couple buying an average new house in Dublin where the strongest inflation has taken place. One can see that the NDI results are not too different from the numbers produced by the survey. We also show the benefit provided by an extended 30-year term rather than the more traditional 20-year term.

Figure 14: Mortgage affordability in Dublin (Davy model)



Note: Our couple earns €71k gross based on average economy wide earnings. Dublin earnings would typically be higher than this but given that FTB's would earn a below average income and the average earnings of a FTB at Bank of Ireland on a nation-wide basis was €64,000 we feel this income level is appropriate. Current new house price in Dublin is €342,000 (Q1 2005), and we assume a 92% loan of €315k

Source: Davy

Moreover our economists recently presented the following figures to show that a "typical" FTB couple would have 20% more residual income today in real terms than they did in 2000 despite the rise in house prices over the period. In table 16 we use income of €71,000 which is twice the average earnings across the economy, whereas survey evidence suggests FTBs on average have a combined income of nearer €64,000 but the results would still be the same.

Table 16: Married couple on average earnings buying an averaged priced house

	2000 (€)	2005 (€)	% change
Earnings (gross)	53,694	71,012	32%
Earnings (after tax)	38,603	53,551	39%
Average tax rate	28.1%	24.5%	
Nat'l avg. house price	169,394	261,892	55%
Mortgage rate	5.2%	3.5%	
Annual repayments*	9,551	12,639	32%
As % of after tax income	24.7%	23.6%	
Residual income	29,052	40,912	41%
CPI	110.7	129.5	17%

* based on 90% of value of house and 25 year term

How would our mystery shopper fare if rates went up?

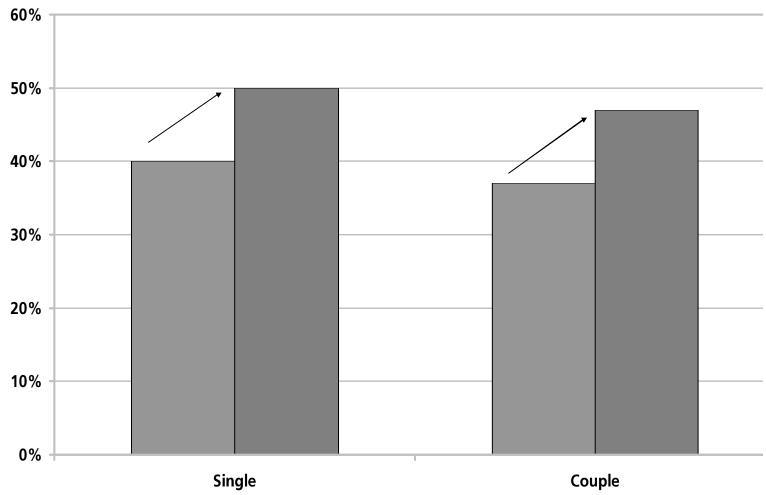
If we take the data from tables 13/14, we can demonstrate what would happen to our would-be buyers if they took one of the mortgages on offer and rates went up say 2%.

For the single buyer, a 2% rise in rates would cause their NDI% to rise by between 6%-10%, and for our couple the deterioration would be of the order of 8%-10%. So if we took the largest mortgage we were offered in each case, the respective increases would have been from 40% to 50% and 37% to 47%.

If we then look at what would happen to their residual income after the mortgage is paid out every month, our single buyer would see theirs fall from €2079 to €1708 or a drop of 18%, while our couple would see theirs fall from €2660 to €2243 which represents a drop of 16% (see figure 16).

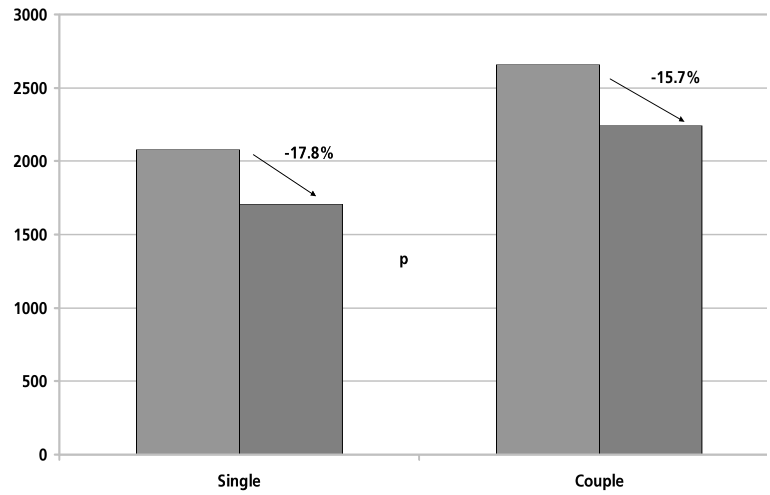
Such a change in financial circumstances would heavily impact on discretionary spending levels in each case but it would not seem large enough to us to automatically suggest any payment difficulties i.e. for our couple to find an extra €400 a month would equate to foregoing a decent night out on the town once a week. Obviously if one had unsecured debts as well e.g. a car loan, than there would be an additional financial burden to worry about.

Figure 15 : Movement in % NDI for a 2% rise in rates



Source: Davy

Figure 16: Net earnings after mortgage interest with 2% rate rise (€)



Source: Davy

Survey evidence

A recently published ESRI/IIB survey contained the best information we have on consumer borrowing behaviour and affordability. Its key findings were as follows:

- 55% of respondents found their mortgage to be somewhat of a burden, 30% no burden and 15% a heavy burden.
- The national average mortgage repayment is €595, up from €500 in 2004. For those finding their mortgage "a burden", the average was €918 (€714).
- Rising house prices has encouraged 20% to increase their mortgage debts. But of these only 25% had borrowed to purchase goods and services. 44% borrowed for extensions/repairs, 16% for trading-up and 15% for debt consolidation purposes.
- The vast majority (64%) of adults do not regularly run into unsecured debt. Of those that do the average unsecured debt is only €5,800 up from €5,100 in 2004.
- 19% of those with unsecured debt described them as a burden up from 17% in 2004 with 40% saying they were no burden (34%).
- Those on salaries below €25,000 are feeling the most strain and the authors estimated that 100-150,000 adults would face significant strains with their unsecured debt if borrowing costs rose rapidly.

Structure of personal debt is important

How big is the average mortgage?

The problem with debt/disposable income and affordability measures is that they measure the financial circumstances of the average borrower whereas it is the borrower at the margin that tends to cause a problem. Moreover many households have no debt at all. So what do we know about how mortgage debt breaks down in Ireland?

Using CSO data from the QNHS in Q3 2003, 62% of owner occupiers surveyed said that they had no mortgage or loans on their dwelling. The majority of these bought their house pre-1980, though around one quarter of the purchases since 1996 also had no mortgage (DOE data suggests 43% of new houses built last year had no mortgage attached).

So according to the QNHS 376,000 private households did have a mortgage. Unfortunately calculating the average mortgage outstanding is not simply achieved by dividing the stock of mortgages at the time (€55.1bn) by this number (one would get €146,000). For example many households have more than one mortgage due to an investment property (these loans would be supported by rental income of course and are probably 20% of the total) or holiday home.

In table 17 we show data from the DOE which shows that two thirds of all new mortgage advances last year (for house purchase) were for amounts under €200k. In fact the average advance for new and second hand properties last year was €167k and €174k respectively. Bank of Ireland for their part indicated that their average new advance was €152k last year (which would include equity release etc), implying that the average mortgage outstanding would be a lot less than this.

Our own back of the envelope estimates would suggest that the average mortgage outstanding is somewhere between €75,000–110,000 and our best guess is that it is towards the upper end of this range.

We have used three different sources to derive this. Our bottom end calculation comes from the QNHS survey, where we employed a simple weighted average calculation of monthly mortgage repayment data. The suggested that the average repayment was €445 two years ago, which would be higher today due to rising prices and mortgage rates being only slightly lower.

The higher end number flows from the ESRI/IIB survey which reports that the average mortgage repayment is currently €595 per month (with an average term of 22 years). Finally data from Bank of Ireland's recent ACS issue would suggest that the average mortgage per property within its €4.8bn ACS pool (around 6% of the national book) is around €113,000.

Table 17: Range of loans paid – whole country

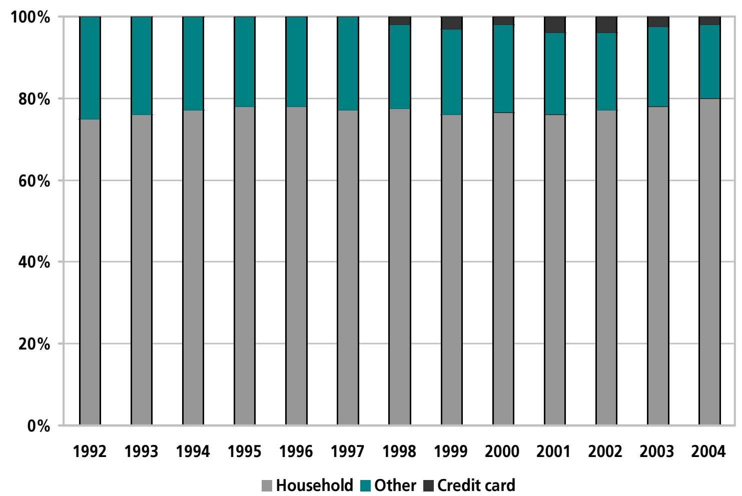
Year	< €100k	€100–150k	€150–200k	€200–250k	€250–300k	>€300k
2000	58.0%	26.8%	10.6%	2.3%	1.2%	1.1%
2004	18.3%	22.8%	24.7%	14.1%	7.6%	12.5%

Source: DOE

80% of personal debt is mortgages (borrowing for asset purchase)

Unlike in some countries, mortgage debt represents the vast majority of personal debt at around 80% and this proportion has not moved much in recent years (see figure 17) despite the rapid increase in indebtedness. The figure for the eurozone at the end of 2004 was 68%. This is an important point and suggests that most of the rise in personal debt in Ireland has been used to purchase assets. Such lending is by definition less risky from the point of view of both probability of default and loss in the event of default. Moreover the level of credit card debt in Ireland is also very small. Total outstanding on cards amounted to just €2.04bn at the end of May, almost all of which was on personal cards (1.95m in issue) which averages just €1,000 per card in issue (charge-off rates are also as low as 1.1% vs 4–5% in other markets).

Figure 17: Mortgages as a % of personal debt (€bn)



Source: Davy

When one considers this, it is reasonable to wonder what has happened to the value of these assets purchased over time. Such has been the rise in Irish house prices that personal debt represents virtually the same percentage of housing wealth today as it did in 1994—18% vs 16% (see table 18).

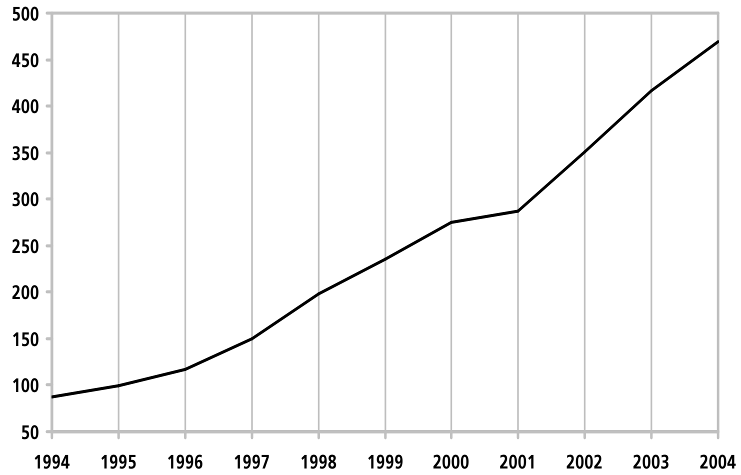
Table 18: No change in personal debt versus housing wealth

	1994	2004
End year pers. debt (€m)	14000	90970
End year housing stock (m)	1.22	1.64
End year house price (€)	70,000	309,000
Value of housing (€m)	85400	506800
Pers. debt/housing wealth	16%	18%

Source: Central Bank; Davy

In fact in figure 18 we chart the net assets of the household sector in Ireland over the past decade expressed as value of housing stock + personal deposits—personal debt. This value has gone from €88bn at the end of 1994 to €470bn at the end of last year.

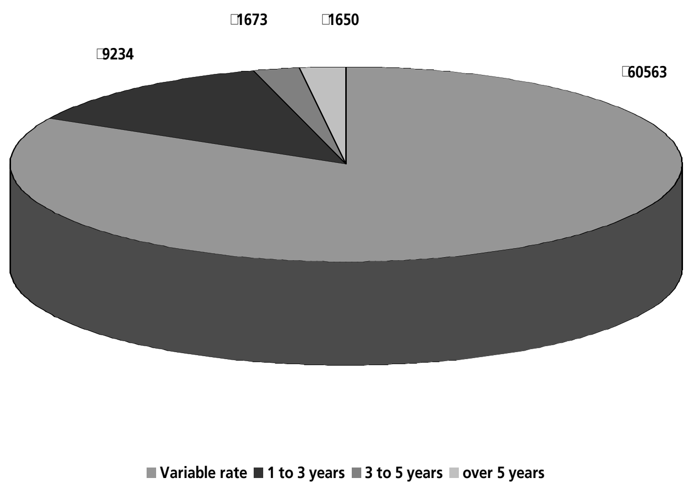
Figure 18: Net assets of household sector (€bn)



Source: Davy

One characteristic of personal debt which is not supportive is that most mortgages in Ireland are variable rate. Of outstandings at the end of 2004, 83% was variable and 17% was fixed but, of this figure, three quarters were fixed for between 1 and 3 years. Hence the Irish mortgage market, like the UK is quite sensitive to rising interest rates.

Figure 19: Split of Irish mortgages (fixed vs variable rate)



Source: Central Bank

Table 19: Breakdown of European mortgages into fixed and variable rate

Country	Interest rate arrangements	Usual length of contracts
Austria	n/a	n/a
Belgium	F (75%), M (19%), V (6%)	20 years
France	F/M (86%), V (14%)	Over 5 years
Finland	F (2%), V (97%)	15–20 years
Germany	Mainly M and F	Up to 30 years
Greece	F (5%), M (15%), V (80%)	15–20 years
Ireland	V (70%), M (30%)	n/a
Italy	F (28%)	10 to 25 years
Luxembourg	V (90%)	20 to 25 years
Netherlands	F (74%), M (19%), V (7%)	10 years
Portugal	Mainly V	25– 30 years
Spain	V (more than 75%)	15–25 years

Source: ECB 2003 (data refer to 2001)

Corporate sector

Unfortunately it is virtually impossible to measure debt affordability in the corporate sector directly and hence we have to rely on an indirect approach by reference to indicators such as profitability, confidence etc.

Unfortunately, recent data on economy-wide profitability for the corporate sector are not available (figures for 2003 will become available shortly). But the evidence of retail sales, business investment and monthly surveys suggest that the rate of profit growth accelerated in early 2005. Forecasts for quoted companies on the Irish stock exchange provide some guide to this trend, although it must be remembered that less than 50% of the earnings of these companies originate in Ireland. Annual earnings growth for the Irish market is set to hit about 16% this year, up from 10% in 2004.

Plenty of indicators hint that profitability has improved this year. Retail sales have jumped in 2005. In the first five months of the year, the value of sales rose 6.5% yoy. Moreover, a rebound in business investment is evidence of stronger cash flow. Goods vehicle sales were up 30% yoy in H1. Meanwhile imports of capital goods—a proxy for business investment—are rising at their fastest pace for four years. Surveys also point to a pick-up in business confidence. Average monthly readings in the PMI services survey for Ireland are as strong as they have been for five years.

That said, industry is not performing as well as services. In 2005, output is down yoy in both the indigenous and multinational sectors. That partly explains why corporation tax receipts are running well behind target; timing factors and US efforts to encourage profit repatriation are also impacting negatively on receipts. It should be remembered that multinationals have a distorting influence on corporation tax receipts because of the incentive to book profits here but these companies are not significant borrowers from Irish credit institutions.

Demand/supply conditions in commercial property improving

Given the huge level of lending to the construction and commercial property sectors, it is encouraging that the underlying demand/supply conditions in the Irish market are improving. However one would have to say that there still appears to be a large gap between the environment suggested by the 35-55% growth rates in credit to the sector and the growth in tenant demand.

Research from CBRE Gunne suggests that take-up in the Dublin office market in H1 2005 was over 60,000 sq metres and while down on H1's 80,000 sq metres, completion delays mean that at mid-year there was another 70,000 sq metres reserved or under active negotiation. Hence agents are confident that take-up this year will exceed 2004 level.

Prime office rents may be starting to creep upwards while those in the suburbs are holding steady—overall rental growth as of Q1 though was still showing a decline of 1% yoy according to IPD (see table 20). The vacancy rate is also falling and now stands at around 12.3% down from 14% a year ago and as high as 20% during the last economic downturn.

In the industrial sector, prime rents are also rising, albeit slowly, by around 2.5% to €120 per sq metre according to Gunne. The agency indicates that demand levels have increased year-to-date but that letting activity is moderate compared to sales activity. Given low interest rates most occupiers prefer to buy rather than lease and capital values are also edging up.

The most buoyant sector within the market is retail which is not surprising given that consumer spending growth is likely to be at least 5.0% in real terms this year. Rental growth in retail is running in double digit territory.

A recent survey of chartered surveyors (table 21) conducted on behalf of Bank of Scotland (Ire) in May, also suggested that sentiment towards the sector is very positive. Capital values were expected to increase across all sectors in the coming year, as were rents (less so in the industrial market) while forecasts for development activity were positive but down on the previous survey done in November 2004.

Table 20: IPD return for Irish property market

	All property	Retail	Office	Industrial
% over last 3 months				
Total return	4.5	5.0	4.5	2.4
Income	1.4	1.0	1.6	1.7
Capital	3.0	3.9	2.9	0.8
Rental value growth	0.7	2.4	0.0	0.0
Equivalent yield	5.53	4.49	5.99	7.2
% over last 12 months				
Total return	14.2	20.1	11.3	9.5
Income	5.7	4.2	6.5	6.9
Capital	8.1	15.3	4.5	2.5
Rental value growth	2.5	10.7	–1.0	–0.1

Source: IPD

Table 21: Survey of chartered surveyors in Ireland, May 2005

	Demand	New supply development	Rent	Yield	Capital value
Retail	Demand Occupier up 60% Investment up 75% Activity Transactions up 69% Enquiries up 56%	Development Starting up 44% Transactions up 69% Speculative Starting up 38% In Planning up 44%	85% expecting increasing rents 33% > 10% 31% 5–10% 21% < 5%	Increase 18% Static 50% Decrease 32%	88% expecting rise 24% > 10% 36% 5–10% 28% < 5%
Office	Demand Occupier up 65% Investment up 71% Activity Transactions up 76% Enquiries up 71%	Development Starting up 35% In planning up 53% Speculative Starting up 35% In planning up 47%	62% expecting increasing rents 7% > 10% 25% 5–10% 30% < 5%	Increase 26% Static 60% Decrease 14%	67% expecting rise 11% > 10% 30% 5–10% 26% < 5%
Industrial	Demand Occupier up 53% Investment up 65% Activity Transactions up 65% Enquiries up 53%	Development Starting up 53% In planning up 53% Speculative Starting up 59% In planning up 77%	39% expecting increasing rents 3% > 10% 11% 5–10% 25% < 5%	Increase 18% Static 70% Decrease 12%	88% expecting rise 13% > 10% 16% 5–10% 33% < 5%

Note: All figures refer to forecasts for next year. Figures refer to % of respondents answering as shown e.g. in demand box, 60% of respondents felt occupier demand in the retail sector would rise

Source: Bank of Scotland Ireland, July 2005

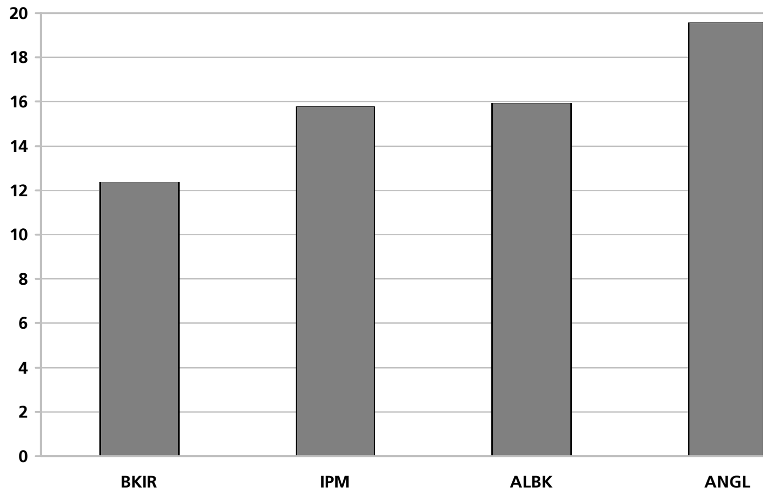
4. Stress-testing the Irish banks

High level of sector profitability and provisions provides protection

The Irish banking sector is highly profitable and the quoted banks earn operating profits that are anywhere between 12x-20x current bad debt provisions (see figure 20). Such profitability would provide strong support in the event of deterioration in asset quality.

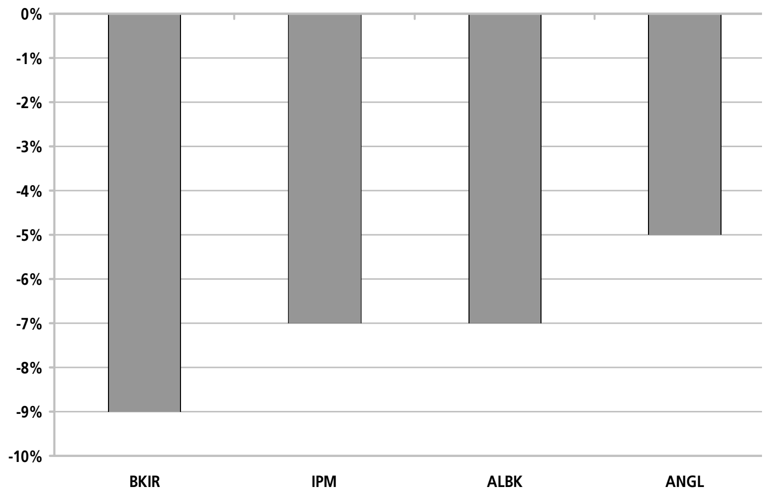
For example we estimate that if bad debts were to double at each bank, that PBT would fall by just 5% for ANGL, 7% for ALBK and Permanent TSB (less than 3% for IPM as a group) and 9% for BKIR (see figure 21).

Figure 20: Group pre-provision profits to bad debts, 2005



Source: Davy; companies (only ALBK on IFRS basis)

Figure 21: Hit to group PBT from doubling of bad debts



Source: Davy

How do the banks' domestic loan books break down?

So far we have analysed PSC on an aggregate economy-wide basis, but how do the loan books of the quoted banks breakdown?

In table 22 we show a rough split for each of the four quoted banks. The bank with the largest residential mortgage exposure is obviously Permanent TSB, followed by BKIR and then ALBK. ANGL would have the largest construction and property exposure, though we would stress that here we use a 20F type definition to make its split comparable with the larger banks. This is a very broad definition and would include commercial investment property lending, loans to businesses to acquire their premises, funding for an MBO of a property company etc (i.e. Anglo's core business).

Anglo has not published a sectoral split of its loan book in the past year but it would put its pure construction exposure at a high single digit percentage of its Irish loan book (usually pre-sales or pre-lets attached) and would classify say a lawyer buying the building he trades from as professional.

Table 22: Split of Irish loan books

	AIB (€bn)	%	BKIR (e) (€bn)	%	Perm tsb (€bn)	%	Anglo (€bn)	%
Residential mortgages	13.23	31.5	15.0	40.0	14.52	84.8	–	–
Other personal	4.32	10.3	6.7	18	1.36	7.9	–	–
Construction/property	10.06	24.0	3.4	9	1.24	7.2	15.8	100%
Other business	14.39	34.3	12.3	33	–	–	–	–
Total Irish	42.00	100.0	37.4	100	17.12	100.0	15.8	100%

Note for ANGL their construction and property exposures is estimated on a "20F" basis

Source: Company sources and Davy estimates (BKIR and ANGL). IPM and ALBK are Dec 2004, BKIR and ANGL are Mar 2005.

Unemployment and rising rates – no real threat at present

Rising unemployment and a sharp increase in interest rates are the two obvious threats to the Irish banking system, but neither looks likely in the short to medium term.

The sector that tends to get the most commentary in such a context is the housing/mortgage market. We did some related stress testing work two years ago (Irish Banks – how dependent on mortgages?, 12 May 2003) where we used Fitch's mortgage default model to predict what would happen to the Irish banks in the event of a recession similar to the one that hit the UK in the early 1990s.

Essentially we applied probability of default estimates to each LTV band within Bank of Ireland's Irish mortgage book and concluded that charge-offs would hit around 16bps (they hit over 20bps in the UK at the time).

Given that LTV criteria has been fairly well behaved since then, and while house prices have continued to rise there is an enormous amount of equity now supporting the national mortgage book. For example, we estimate that it would take a price fall of a little over 20% before a typical FTB mortgage issued in 2003 on a new house (based on the national average) would be in negative equity. Moreover it would take a fall of over 30% before those issued in 2002 would be in negative equity.

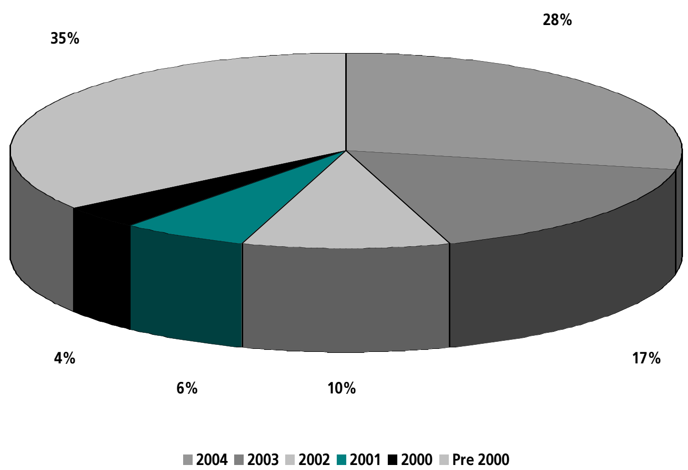
Table 23: Negative equity in the event of house price decline (as % of loan)

	2000	2001	2002	2003	2004
New house price (base index 100)	100	108	117	133	147
Value of loan on issue (92% LTV)	92	99	108	122	136
Value of loan today	83	91	101	118	120
LTV 2004	56%	62%	69%	80%	91%
Loss (as % of loan today) given:					
10% decline in house prices	0%	0%	0%	0%	0.9%
20% decline in house prices	0%	0%	0%	0%	11.9%
30% decline in house prices	0%	0%	0%	12.2%	22.9%

Source: Davy

The incidence of negative equity does not necessarily mean that a borrower will default on their loan of course though the greater its extent, the higher the probability of default (and the greater the loss given default for the banks).

Figure 22: Estimated mortgage stock by year of issue



Source: Davy

An economist at the Central Bank has compiled data on the characteristics of borrowers that were in arrears in Ireland in the early to mid-1990s (see table 24). The finding was, not surprisingly, that unemployment was the most common characteristic.

Table 24: Characteristics pre-disposing households to fall into mortgage arrears

Characteristic	%
Unemployed	10.5
Unskilled manual worker	9.1
In arrears on other debts	8.8
In arrears on utility bills	7.2
Not regular savers	3.9
>30% repayment burden	2.8
Mortgage 1 to 5 years old	2.6

Source: Kearns

Results of Central Bank stress-testing

The Irish Central Bank has conducted detailed stress-testing exercises of the Irish banking system by way of both a "bottom up" survey approach and a "top down" modelling approach. Unfortunately the last exercise was done in Q4 2003. However we believe the results are still worth commenting on here.

As part of the exercise, three scenarios were sent to the various banks as outlined in table 25. These were a baseline or benchmark scenario based on the CB's own forecasts at the time and two alternatives - shock 1 (a recession) and shock 2 effectively the baseline but with a 2.25% rise in rates factored-in off the then current ECB rate of 2.0% (at the pace of a 0.25% rise per quarter).

The key results when aggregated across the sector were as follows:

- Loan growth slowed from a projected 40% over the three-year period under the baseline to c. 20% under shock 1 and 33% under shock 2.
- NPL growth over the period went up from 35% to 120% under shock 1 and 73% under shock 2.
- PBT growth (of their Irish operations) slowed from a projected 22% (i.e. around 7% p.a.) under the baseline to –6% under shock 1 and +7% under shock 2.
- No institutions projected losses, liquidity or capital problems under either shock scenario

Table 25: Assumptions for CB stress-testing exercise, Q4 2003

	2003F	2004F	2005F
Baseline assumptions			
GDP growth	1.75	3.5	5.3
Unemployment	4.75	5.25	5.25
House price inflation	14.0	5.0	4.7
ECB rates	2.0	2.0	2.0
Shock 1 scenario			
GDP growth	1.2	–2.5	–2.75
Unemployment	5.0	7.8	9.8
House price inflation	12.0	–2.0	–8.0
ECB rates	2.0	2.0	2.0
Shock 2 scenario (as per baseline but...)			
ECB rates	2.25	3.25	4.25

Source: Central Bank

The fact that the banks projected that their profits would fall under shock 1 is probably not surprising but the magnitude of the impact of shock 2 strikes us as a little odd. Profit growth of just 7% (i.e. 2% p.a.) over the three year period due to a gradual 2.25% rise in rates seems very low in our view, particularly given the fact that over 30% loan growth was still anticipated. The impact of a projected 70% rise in NPLs obviously prompted a substantial hike in loan loss provisions.

Along with the bottom up survey approach, the Central Bank also employed an early stage econometric model for the purposes of "top down" stress testing (it predicts provisioning levels). We include some of the results from this model for the shock 1 scenario which produced fairly similar results to the bottom-up survey approach. i.e. provisions/loans would rise 38% under shock 1 which was not far-off the 41.6% figure produced by the survey.

It is also interesting to note that the CB predicted that the pure residential mortgage players in the market would fare better under shock 1 than the mixed/non-mortgage banks suggesting that the likes of Permanent TSB and Bank of Ireland might fare best in a downturn ceteris paribus.

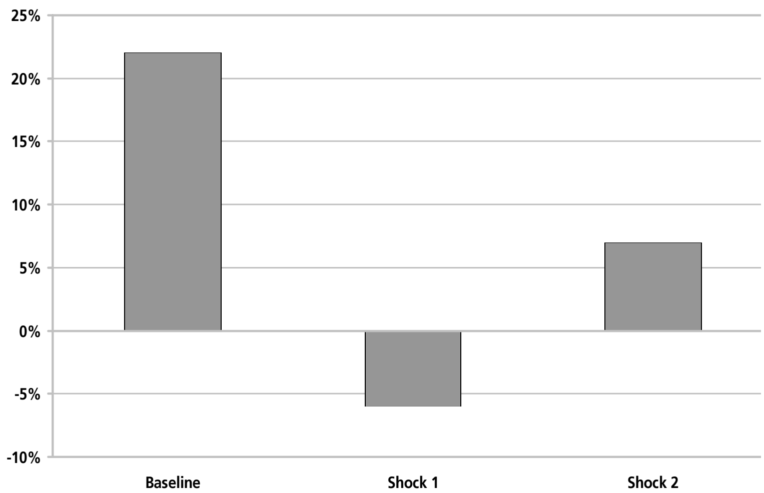
What the results of the two alternative scenarios would be like today, both under the bottom-up or top down approach, in view of the increased level of indebtedness in the system over the past two years, is a moot point. The next stress testing exercise by the CB is likely to be conducted later this year or early next year.

Table 26: Change in provisions/loans ratio under shock 1

	"Top down" Central bank model	"Bottom up"		
	All lenders	Mortgage only	Mixed/Non mortgage	Responses from banks
Baseline scenario	–13.0	–11.6	–7.5	–8.5
Shock 1 scenario	38.2	21.2	48.0	41.6

Source: Central Bank

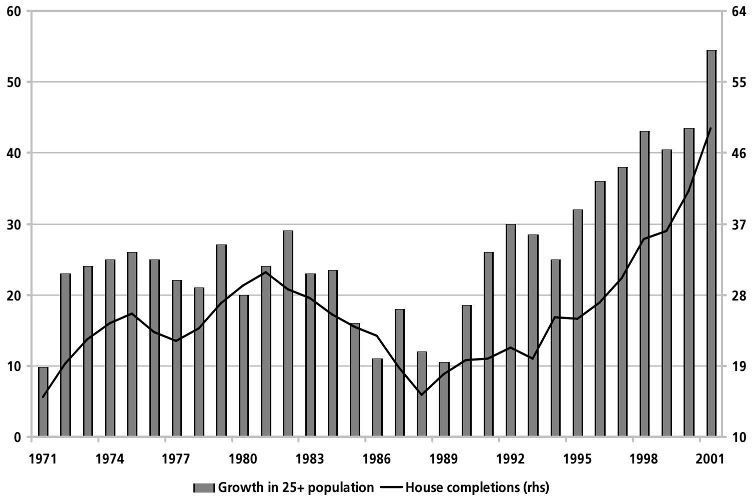
Figure 23: Estimated growth in PBT over 3 years, 2003–2005



Source: Central Bank

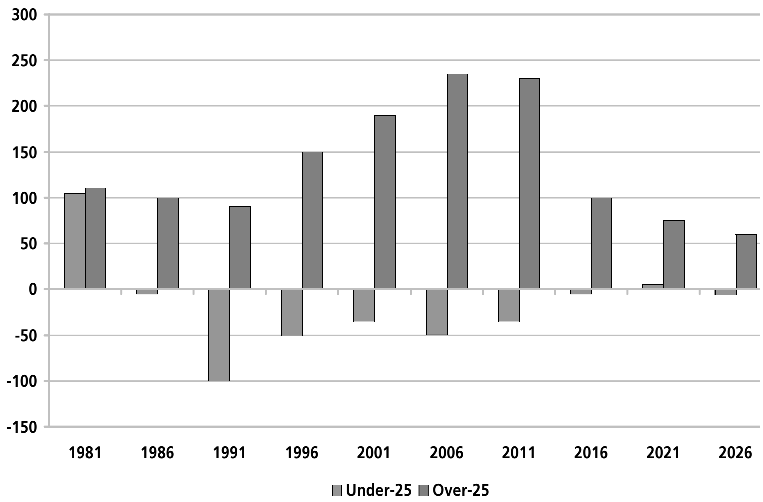
Appendix

Figure 24: Population growth & housing demand (000s)



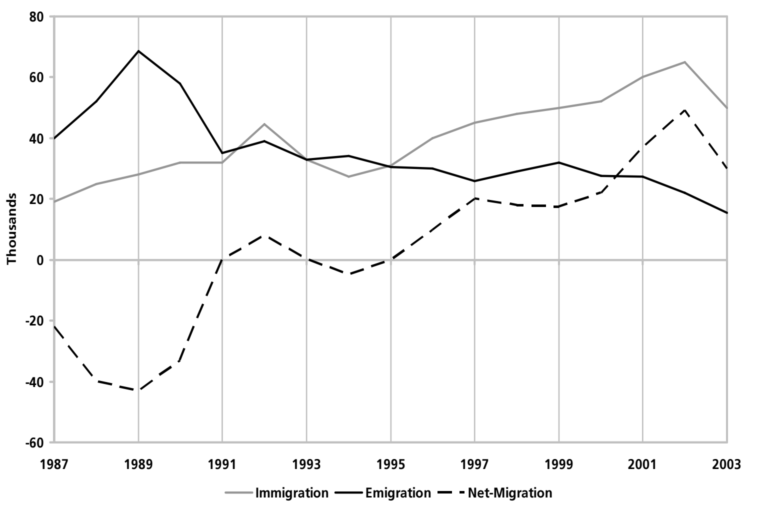
Source: Irish Life

Figure 25: Age composition of population growth (000s)



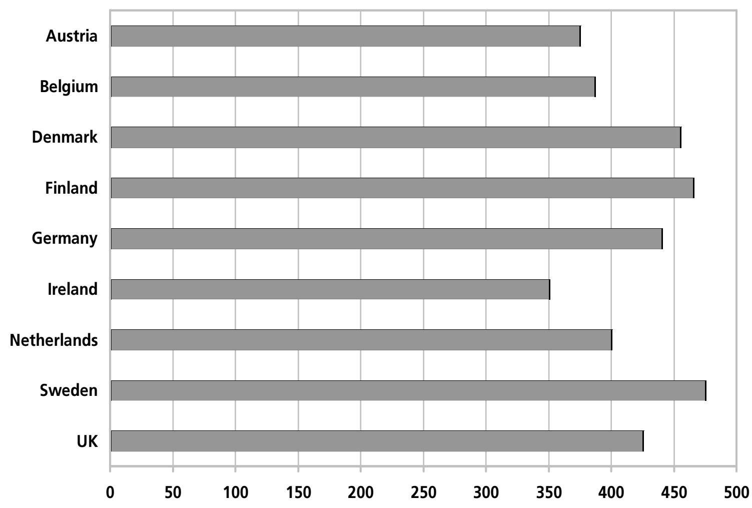
Source: Irish Life

Figure 26: Trend in net migration (000s)



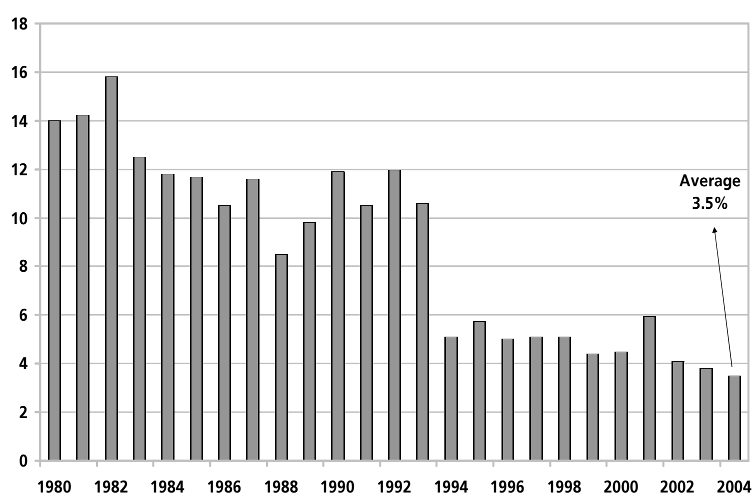
Source: CSO

Figure 27: Housing stock per '000 population



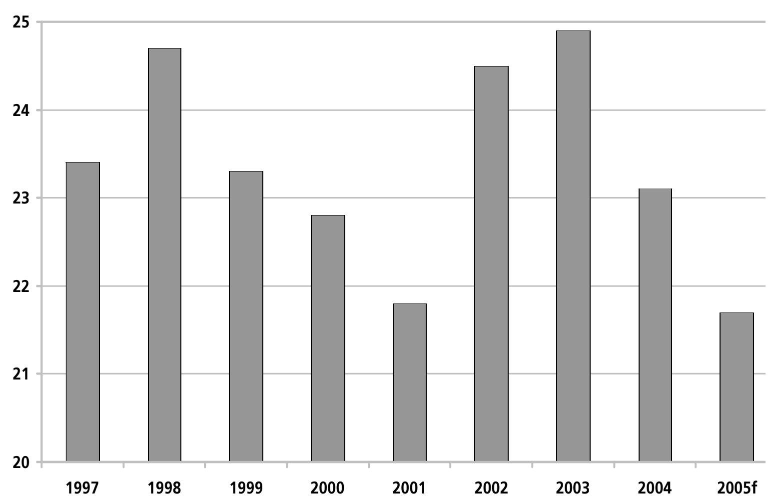
Source: Euroconstruct

Figure 28: Mortgage rates at historic lows (%)



Source: Central Bank

Figure 29: ROE of four quoted Irish banks (%)



Source: Davy

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